UGAP2018

1. ULUSLARARASI GAP TARIM VE HAYVANCILIK KONGRESİ

25 - 27 NİSAN 2018

HARRAN ÜNİVERSİTESİ - ZİRAAT FAKÜLTESİ - OSMANBEY YERLEŞKESİ - ŞANLIURFA

1ST INTERNATIONAL GAP AGRICULTURE AND LIVESTOCK CONGRESS

APRIL 25 - 27, 2018

HARRAN UNIVERSITY - FACULTY OF AGRICULTURE - OSMANBEY CAMPUS - SANLIURFA - TURKEY

ÖZET BİLDİRİ KİTABI

ABSTRACT BOOK

ISBN 978-975-7113-64-5

UGAP 2018

1st INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS ABSTRACT BOOK

25-27 APRIL 2018 ŞANLIURFA-TURKEY

This abstract book includes original papers sent to the 1st International GAP Agriculture and Livestock Congress and their scientific content is the responsibility of the authors.

ISBN: 978-975-7113-64-5

Congress Organizing Committee

Honorary Presidents of the Congress

Dr. Ahmet Eşref FAKIBABA
Abdullah ERİN
Nihat ÇİFTÇİ
Sadrettin KARAHOCAGİL
Prof. Dr. Ramazan TAŞALTIN
Prof. Dr. Recep GÜNDOĞAN
Prof. Dr. Murat SEVGİLİ

Congress Organizing Committee President

Prof. Dr. Turan BİNİCİ

Congress Secretaries

Assoc. Prof. Dr. Erdal SAKİN
Asist. Prof. Dr. Gonca ÖZMEN ÖZBAKIR

Congress Organizing Committee Members

Assoc. Prof. Dr. Osman ÇOPUR
Assoc. Prof. Dr. Osman Yaşar TEL
Asist. Prof. Dr. Serap KILIÇ ALTUN
Asist. Prof. Dr. Mustafa Hakkı AYDOĞDU
Asist. Prof. Dr. Mustafa Ünal BOYRAZ
Asist. Prof. Dr. Hikmet DİNÇ
Asist. Prof. Dr. Selahattin KİRAZ
Asist. Prof. Dr. Ferhat KÜP
Asist. Prof. Dr. Mehmet MAMAY
Asist. Prof. Dr. Durhasan MUNDAN
Asist. Prof. Dr. Bülent PİŞKİN
Asist. Prof. Dr. Ebru SAKAR
Asist. Prof. Dr. Gönül SEVİNÇ
Asist. Prof. Dr. Selçuk SÖYLEMEZ
Asist. Prof. Dr. Kasım TAKIM
Asist. Prof. Dr. Gökhan İsmail TUYLU
Asist. Prof. Dr. Ünal YAVUZ
Asist. Prof. Dr. Ali YILDIRIM
Dr. Nusret MUTLU
Res. Asist. Dr. Büşra GÖNCÜ
Res. Asist. Bülent BAŞYİĞİT
Res. Asist. Besime DOĞAN DAŞ
Res. Asist. Mehmet İlhan ODABAŞIOĞLU
Res. Asist. Pelin Fatoş POLAT
Res. Asist. Eray ŞİMŞEK
Sect. of Agr. Fact. Servet SARI
Agr. Fact. Ad. Affairs Chief. Selahattin KUMCU

Congress Scientific Committee

Food Engineering Scientific Committee

Dr. Narpinder SINGH	Guru Nanak Dev University, INDIA
Dr. Renata KONGOLI	Agricultural University of Tirana, ALBANIA
Dr. Soultana Maria VALAMOTI-KAPETANAKI	Aristotle University, GREECE
Dr. Hasan VARDİN	Harran University, TURKEY
Dr. Ayhan ATLI	Harran University, TURKEY
Dr. Vural ÖZDEMİR	Amrita University, INDIA
Dr. Mustafa BAYRAM	Gaziantep University, TURKEY
Dr. Mustafa ÇAM	Erciyes University, TURKEY

Agriculture Engineering Scientific Committee

Agricultural Economics

Dr. Vitaly DYRDA	Dnipropetrovsk State Agr. and Eco. Univ., UKRAINE
Dr. Bahri KARLI	Süleyman Demirel University, TURKEY
Dr. Fahri YAVUZ	Atatürk University, TURKEY
Dr. Jumpei KUBOTA	Research Institute for Humanity and Nature, JAPAN
Dr. Takanori NAGANO	Graduate School of Agr. Science Kobe Univ., JAPAN
Dr. Haydar ŞENGÜL	Çukurova University, TURKEY
Dr. İbrahim YILMAZ	Akdeniz University, TURKEY
Dr. Gamze SANER	Ege University, TURKEY
Dr. Bülent GÜLÇUBUK	Ankara University, TURKEY
Dr. Aykut GÜL	Çukurova University, TURKEY
Dr. Vecdi DEMİRCAN	Süleyman Demirel University, TURKEY
Dr. İsmet BOZ	Ondokuz Mayıs University, TURKEY
Dr. Dilek BOSTAN BUDAK	Çukurova University, TURKEY
Dr. Şinasi AKDEMİR	Çukurova University, TURKEY
Dr. Canan Fisun ABAY	Ege University, TURKEY

Animal Science

Dr. Seyed Abbas RAFAT	University of Tabriz, IRAN
Dr. Teodora POPOVA	Institute of Animal Science, Kostinbrod, BULGARIA
Dr. Atakan KOÇ	Adnan Menderes University, TURKEY
Dr. Hossein JANMOHAMMADI	University of Tabriz, IRAN
Dr. Halit Vasfi GENÇER	Ankara University, TURKEY
Dr. Hironori HAMASAKI	Nagasaki University, JAPAN
Dr. Ayhan CEYHAN	Niğde Ömer Halisdemir University, TURKEY
Dr. Abdullah CAN	Harran University, TURKEY
Dr. Tugay AYAŞAN	Eastern Mediterranean Agr. Research Institute, TURKEY

Agricultural Machinery

Dr. Murat KISA	Harran University, TURKEY
Dr. Oleksiy DERKACH	Dnipropetrovsk State Agr. and Eco. Univ., UKRAINE
Dr. Cevdet SAĞLAM	Erciyes University, TURKEY
Dr. Ali Musa BOZDOĞAN	Çukurova University, TURKEY
Dr. Ramazan SAĞLAM	Harran University, TURKEY
Dr. Sfayhi DORRA	National Institure of Agr. Research of Tunisia, TUNISIA
Dr. Vitaly DYRDA	Dnipropetrovsk State Agr. and Eco. Univ., UKRAINE

Agricultural Structures and Irrigation

Dr. Roman ROLBIECKI	University of Tech. and Life Sci. in Bydgoszcz, POLAND
Dr. Lidia SAS PASZT	Dept. of Soil and Orchard Mang., (IO), POLAND
Dr. Öner ÇETİN	Dicle University, TURKEY
Dr. Mehmet ŞİMŞEK	Harran University, TURKEY
Dr. Atılgan ATILGAN	Süleyman Demirel University, TURKEY

Field Crops

Dr. Andrzej SALATA	University of Life Sciences in Lublin, POLAND
Dr. Małgorzata SZCZEPANEK	UTP University of Science and Technology, POLAND
Dr. Tahir POLAT	Harran University, TURKEY

Horticulture

Dr. Georgios ZAKYNTHINOS	Agricultural of University of Athens, GREECE
Dr. Bekir Erol AK	Harran University, TURKEY
Dr. Ebrahim LATIFIKHAH	Agr. Res., Education and Extension Org., IRAN
Dr. Damiano AVANZATO	International Society for Horticultural Science, ITALY
Dr. Ossama KODAD	Ecole Nationale d'Agriculture de Meknès, MOROCCO
Dr. Federico DICENTA	Ecole Nationale d'Agriculture de Meknès, SPAIN
Dr. Yun Chan HUH	National Institute of Hort. and Herbal Sci., S. KOREA
Dr. Yuling BAI	Wageningen University & Research, NETHERLANDS
Dr. Ferhad MURADOĞLU	Bolu Abant İzzet Baysal University, TURKEY

Plant Protection

Dr. Bertrand POURUT	Universite de Toulouse, FRANCE
Dr. Hsin CHI	National Chung Hsing University, TAIWAN
Dr. Anita MUKHERJEE	University of Calcutta, INDIA
Dr. Levent ÜNLÜ	Selçuk University, TURKEY
Dr. Fedai ERLER	Akdeniz University, TURKEY
Dr. Mehmet Ertuğrul GÜLDÜR	Harran University, TURKEY
Dr. Vural ÖZDEMİR	Amrita University, INDIA
Dr. Mounzer KABBAİ	Harran University, TURKEY
Dr. Shady ALKHAZZAM	Harran University, TURKEY
Dr. Abdulkader RASWANI	Harran University, TURKEY
Dr. Abdallah JHAR	Harran University, TURKEY

Soil Science and Plant Nutrition

Dr. Ibrahim Halil YANARDAĞ	Technical University of Cartagena, SPAIN
Dr. Asuman BÜYÜKKILIÇ YANARDAĞ	Technical University of Cartagena, SPAIN
Dr. Ayten NAMLI	Ankara University, TURKEY
Dr. Levet ŞAYLAN	İstanbul Technical University, TURKEY
Dr. Gönül AYDIN	Adnan Menderes University, TURKEY
Dr. Ali SEYREK	Harran University, TURKEY
Dr. Cengiz KAYA	Harran University, TURKEY
Dr. Mehmet Fatih DİLEKOĞLU	Harran University, TURKEY
Dr. Salih AYDEMİR	Harran University, TURKEY
Dr. Fred Barış ERNST	Harran University, TURKEY

Veterinary Medicine Scientific Committee

Dr. Şükrü BEYDEMİR	Anadolu University, TURKEY
Dr. Eşref YEĞİN	Dicle University, TURKEY
Dr. Nilgün PAKSOY	Harran University, TURKEY
Dr. Siddiqur RAHMAN	Bangladesh Agricultural University, BANGLADESH
Dr. Özkan ASLANTAŞ	Harran University, TURKEY
Dr. Oktay KESKIN	Harran University, TURKEY
Dr. Ahmet UYAR	Mustafa Kemal University, TURKEY
Dr. Ufuk MERCAN YÜCEL	Van Yüzüncü Yıl University, TURKEY
Dr. Nurullah ÖZDEMİR	Namık Kemal University, TURKEY
Dr. Mohamed Ahmed JIMALE	Somali National University, SOMALI
Dr. Cafer Tayer İŞLER	Mustafa Kemal University, TURKEY
Dr. Hasan Hüseyin DÖNMEZ	Selçuk University, TURKEY
Dr. Murat BOYDAK	Selçuk University, TURKEY
Dr. Bizena BIJO	Agriculture University of Tirana, ALBANIA
Dr. Dean JANKULOSKI	Ss. Cyril and Methodius University. MACEDONIA
Dr. Aydın VURAL	Dicle University, TURKEY
Dr. Ali AYDIN	İstanbul University, TURKEY
Dr. Zehra HAJRULAİ-MUSLİU	Ss. Cyril and Methodius University. MACEDONIA
Dr. Hisamettin DURMAZ	Harran University, TURKEY

REGULATORY FACULTIES OF ORGANIZATION

HARRAN UNIVERSITY AGRICULTURE FACULTY

HARRAN UNIVERSITY FACULTY OF VETERINARY SCIENCE

SUPPORTING INSTITUTIONS

REPUBLIC OF TURKEY MINISTRY OF FOOD, AGRICULTURE AND LIVESTOCK

REPUBLIC OF TURKEY MINISTRY OF DEVELOPMENT

ŞANLIURFA GOVERNORSHIP

ŞANLIURFA METROPOLITAN MUNICIPALITY

SOUTHEASTERN ANATOLIA PROJECT REGIONAL DEVELOPMENT ADMINISTRATION

HARRAN UNIVERSITY RECTORSHIP

ŞANLIURFA COMMODITY EXCHANCE

EDESSA TELEVİSİON

HARRAN UNIVERSITY SCIENTIFIC RESEARCH COORDINATORSHIP (HUBAK)

Preface of Harran University Rector

GAP is the biggest integrated development project of Turkey, as well as in the world. With this project, It is aimed to mobilize the dynamics of the region, and to reach the objectives of development in all sectors including agriculture. Agricultural activities are the most important components of regional development efforts. It is, therefore, necessary that it would be discusse all aspects of agriculture's current situation as widely as possible.

Also, the tremendous power of agriculture of region is based on its natural resources such as land, water, vegetation, climate, and human power with its history, culture and civilization. For this reason, the continuation of the power depends on the natural and sustainable human resources. In this context, it is necessary that we should not use natural resources to protect our soil, water and biological resources knowing that Allah is entrusted to us.

Through the GAP Agricultural Congresses organized by the Agricultural Faculty of Harran University since 1999, our country's agriculture problems and solutions have been discussed on a wide participation platform. The Congress of GAP on Agriculture, which will be held with the international participent in this year, is aimed discussing the present situation and future of agriculture, developing proposals with a high probability of realistic and transferable solutions to practice, and attracting public attention to the problems of agriculture.

I wish this congress will bring good things to agriculture of region and agriculture society.

Prof. Dr. Ramazan TAŞALTIN
Harran University Rector

Preface of Agriculture Faculty Dean

With GAP Project, one of the most important regional development projects in the world, there have been important developments in the region, especially in agriculture. Many public institutions and NGOs, especially the GAP RDA (GAP Regional Development Administration) and Harran University, played a major role in these developments. The sharing of these studies and the results and experiences obtained from these studies and the transfer at national and international levels is of great importance and great value in terms of achieving the goals of the GAP project more quickly and effectively.

In this context, Agricultural Conferences have been held since a long time in the leadership of Harran University and the GAP RDA. In these congresses, vegetable production, animal husbandry, new agricultural techniques, developments and changes in the changing socio-economic structure of the region were discussed; new situations and problems are being sought.

Our region with great potential in agriculture is based on natural resources such as soil, water, plants, climate and human power. For this reason, the continuation of the power depends on the natural and sustainable human resources. This is only possible through a thorough investigation of our resources and sharing of the results of research with all partners.

Universities, on the one hand, produce science based on universal values, while investigating the natural, social, cultural and economic assets of the region they are in; contribute to the improvement of people's prosperity and living conditions. The congresses are of great importance in this respect. The conventions also provide important opportunities for the introduction of local history and culture.

I am proud of organizing the eighth of the GAP Agriculture Congress, which we have been organizing since 1999, at the international level with the Veterinary Faculty, and I wish that the congress will be beneficial for our country, our region and for many valuable participants.

Prof. Dr. Recep GÜNDOĞAN
Agriculture Faculty Dean

Preface of Veterinary Science Faculty Dean

GAP is among the greatest regional development projects of our country. With this project, it is aimed to activate the dynamics of the region in all sectors including agriculture and animal husbandry and to reach development targets.

The GAP Agriculture Congress, organized by Harran University Faculty of Agriculture since 1999, will be held internationally this year. The International GAP Agriculture and Livestock Congress aims to share scientific research done in our universities on agriculture and animal husbandry.

The development of our country and region animal husbandry should increase the productivity of animals and contribute to the economy of the country by adding added value from animal products. It is useful to keep this in mind when planning the studies on animal husbandry. It is also possible that such scientific meetings can contribute positively to the promotion and tourism of the region.

I wish that this congress will bring benefits to our country and our region's livestock.

Prof. Dr. Murat SEVGİLİ
Veterinary Science Faculty Dean

Preface of Congress Organizing Committee President

GAP (South Eastern Anatolian Project) is a multi-sectoral and integrated regional development project based on the concept of sustainable development. Its basic aim is to eliminate regional development disparities by raising people's income level and living standards through agricultural agri-busines development. The basic development scenario envisaged in the GAP Master Plan is to transform the region into an agriculture based export center. Though total exports from the region came to only $600 million in 2002, it had reached $9 billion at the end of 2017. The share of GAP region in Turkey export has increased from 3% to 6% during the period of 2007-2017. It is clear that GAP project has crucial impact on agricultural sector and people who live in region.

Scientific meetings such as “I. International Agriculture and Livestock Congress” have boost the development of region in terms of agricultural sector. I would like to thank everybody who helped the congress succeed.

Prof. Dr. Turan BİNİCİ
Congress Organizing Committee President

CONTENTS

ORAL PRESENTATIONS

Food Engineering Oral Presentations

Agriculture Engineering Oral Presentations

Agricultural Economics Oral Presentations

Animal Science Oral Presentations

Agricultural Machinery Oral Presentations

Agricultural Structures and Irrigation Oral Presentations

Field Crops Oral Presentations

Horticulture Oral Presentations

Plant Protection Oral Presentations

Soil Science and Plant Nutrition Oral Presentations

Veterinary Medicine Oral Presentations

POSTER PRESENTATIONS

Food Engineering Poster Presentations

Agriculture Engineering Poster Presentations

Agricultural Economics Poster Presentations

Animal Science Poster Presentations

Agricultural Machinery Poster Presentations

Agricultural Structures and Irrigation Poster Presentations

Field Crops Poster Presentations

Horticulture Poster Presentations

Plant Protection Poster Presentations

Soil Science and Plant Nutrition Poster Presentations

Veterinary Medicine Poster Presentations

ORAL PRESENTATIONS

Food Engineering Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Research on the Determination of Chemical and Microbiological Properties of Street Milk Sold in Şanlıurfa

Büşra GÖNCÜ[1*], Musa Serdar AKIN[1], Mutlu Buket AKIN[1]

[1]Harran University, Engineering Faculty, Department of Food Engineering
*Corresponding author: busragoncu@harran.edu.tr

Abstract

Milks contain, with some exceptions, the nutrients required for the growth and development of the neonate. All milks contain specific proteins, fats designed to be easily digested, most have lactose, minerals, vitamins and other components. Raw milk has a high nutritive value, but also for microbes, especially bacterial pathogens. So, raw milk kept at room temperature will be liable to microbial spoilage. The detection of coliform bacteria and pathogens in milk indicates a possible contamination of bacteria either from the udder, milkutensils or water supply used. In this study, some chemical and microbiological characteristics of the 30 street milks, received from different points in Şanlıurfa, were examined. According to the results from this study, the qualities of the important part of the 30 raw milk samples collected from different sources in Sanliurfa center were not adequate the requirements in Turkish Food Codex. The evaluations of the results obtained, the microbial quality of the samples were worse rather than the chemical properties of them.

Key Words: Raw milk, quality, microbiology

Focus Shift and Innovative Approaches of Sensory Analysis

Tugba AKTAR[1*]

[1]Alanya Alaaddin Keykubat Univ., Faculty of Engineering, Department of Food Engineering, Antalya-TURKEY
[*]Corresponding author: tugba.aktar@alanya.edu.tr

Abstract

Sensory application and sensory analyses have been applied very widely not only on food sciences but also for the psychology sciences and behavioral applications in order to understand what the consumer/ patient observes when the product is used/ consumed. Undoubtedly sensory tests are crucial for the market success of a product and also for food/ product design by giving the key of consumer observation and demand towards the product. However, especially for the food sciences/ food engineering studies taste has been very widely or if not mistaken taste with aroma, flavor and smell has been the only focus for the sensory applications. This one focus concept of sensory is now experiencing a focus expansion procedure with involving texture and other physical properties which is one of the missing senses. Particularly texture sensation and mouth feel is becoming popular in the new generation researches and has a general new terminology as "Oral Processing". For oral processing tests and human behavior studies, psychology and physiology of the panelists are being examined and then usual sensory test techniques as 9-point hedonic, threshold and etc. are being applied. The very future aim of this field is to create a modal or preferably a machine to mimic the human sensation by only entering the instrumental result which will help sensory scientists with the time and money consuming sensory tests that are also risky or refused by the panelists.

Key Words*:* Sensory analyses, oral processing, mouth feel, texture perception, behavioral applications

Effects of Rice and Chickpea Flours on the Textural Properties of Gluten-Free Maize Starch Cake

Hüseyin BOZ[1*]

[1]Atatürk Uni., Tourism Faculty, Gastronomy and Culinary Arts Dept., Erzurum-TURKEY
[*]Corresponding author: huseyinboz@atauni.edu.tr

Abstract

Gluten-free bakery products are produced for people with celiac disease due to gluten sensitivity. Starch varieties are widely used in the production of gluten-free bakery products with various gums. Pregelatinized starch is a kind of physically modified starch with desirable pasting and texturizing properties. For this reason, the use of pregelatinized starch in bakery products and gluten-free products has increased in recent years. In this study, it was aimed to determine the effects of rice and chickpea flours on the textural properties of gluten free maize starch cake. For this purpose, three different levels of rice flour (15-30%) and two different chickpea flour (15%) were used. The control cake was produced from pregelatinized maize starch and the amounts of rice and chickpea flours added to the formulations were reduced from the amount of pregelatinized maize starch. The textural properties of the cake samples were significantly affected by variables. The springiness, cohesiveness, and chewiness values increased, while hardness values decreased with the addition of rice flour on the formulations. On the other hand, the hardness, springiness, cohesiveness and chewiness values of the cake samples increased with the addition of chickpea flour. The results showed that the rice and chickpea flour positively affected the textural properties of the maize starch cake.

Key Words: Gluten-free cake, chickpea flour, textural properties

Influence of Fortification with Inulin and Hi-maize on Textural and Sensory Properties of Set-type Probiotic Yoghurt

Gülfem ÜNAL[1*], Elif ÖZER[1]

[1]Ege University, Faculty of Agriculture, Department of Dairy Technology, Izmir-TURKEY
[*]Corresponding author: gulfem.unal@ege.edu.tr

Abstract

The aim of this research was to investigate the effect of fortification with inulin and resistant starch (Hi-maize) on textural and sensory properties of set-type probiotic yoghurt, containing Lactobacillus acidophilus during 21 days of storage. Firmness, adhesiveness and apparent viscosity parameters were evaluated for textural characteristics. Milk was fortified with inulin or Hi-maize at 2% or 4% ratios whereas the control group had no supplement. Probiotic yoghurt supplemented with 2% Hi-maize was firmer than that supplemented with 2% inulin except at the beginning of storage. There were no significant differences between the firmness values of inulin and Hi-maize added yoghurt samples when the ratio increased to 4%. The addition ratio of inulin or Hi-maize did not significantly affect adhesiveness. Supplementation with 2% inulin or Hi-maize did not alter viscosity of yoghurts in most of the storage days. Sensory attributes were evaluated as taste, appearance, aroma, texture and overall acceptability. In general, there were no significant differences in sensorial parameters between yoghurts added with inulin or Hi-maize. Neither the addition rate nor the storage period affected the sensory scores of the samples. Significant reductions ($P < 0.05$) of taste, appearance, aroma and overall acceptability scores of the control probiotic yoghurt were determined at the end of storage when compared to the 1st day.

Key Words: Probiotic yoghurt, Prebiotic, Texture, Sensory characteristics

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Changes in Goat Milk During Heating and Storage After Milking

Damla YANMIŞ[1*], Hayri COŞKUN[2]

[1]Department of Gastronomy and Culinary Arts, Faculty of Art and Design, Istanbul Kultur University
[2]Department of Food Engineering, Faculty of Engineering and Architecture, Abant Izzet Baysal University
*Corresponding author: d.yanmis@iku.edu.tr

Abstract

In this study, the changes in goat milk were investigated during heating at different temperatures and storage in different packaging materials. For this purpose, samples from a farm producing goat milk in Bolu were divided into two groups, the first group was pasteurized at 65 °C for 30 minutes (LP) and the second group at 95 °C for 5 minutes (HP). Each group of pasteurized milk samples was again divided into two group and filled into different packaging containers (transparent glass and amber glass). Samples were taken from raw milk and heat treated milks and on 0th, 5th and 10th days of storage period (+4 °C). Viscosity, sedimentation and color changes and also pH, acidity, dry matter, fat, protein, alkaline phosphatase, total hydroxymethylfurfural (HMF), nonenzymatic browning compounds (EOEB) and vitamins E, B1 and B2 were observed in milk samples. In the samples, the heat treatment caused the increase of the dry matter ratio in the goat milk samples ($P<0.05$); but it did not cause any significant change in fat, acidity, viscosity and vitamin values ($P>0.05$). The pH and sedimentation values of the milk samples increased significantly ($P<0.05$) in the samples heated with HP. Besides, the L* value of the color values, HMF and EOEB values increased as the heating value increased. There was no significant difference in the dry matter, fat, protein and vitamin values of goat milk samples throughout storage ($P>0.05$). The acidity values of the samples increased during storage. The HMF and EOEB values of the LP and HP milk samples were different ($P<0.05$), while the packaging difference and the storage effect were not significant ($P>0.05$). Also, sedimentation and L* values were affected by storage ($P<0.05$).

Key Words: Goat milk; Pasteurization; Storage

Determination of Some Phenolic Compounds of Microencapsulated Licorice Root Extract by Liquid Chromatography-Mass Spectrometry (LC-MS-MS)

Bülent BAŞYİĞİT[1*], İbrahim HAYOĞLU[1], Mustafa ÇAM[2], Eyyüp KARAOĞUL[1], Hamza ADIGÜZEL[1]

[1]Food Engineering Department, Engineering Faculty, Harran University, 633300, Haliliye, Şanlıurfa-TURKEY
[2]Food Engineering Department, Engineering Faculty, Erciyes University, 38039, Melikgazi, Kayseri-TURKEY
[*]Corresponding author: bulentbasyigit@harran.edu.tr

Abstract

Licorice (*Glycyrrhiza glabra* L.) is an important medicinal aromatic plant. Roots (*Liquiritae radix*) and extracts (Liquirritiae succus) obtained from roots are two parts of the most use of plant. The licorice root extract (LRE) is known as Licorice Root Sherbet and consumed widely in Eastern and Southeastern part of Turkey. The objectives of this study were to extract licorice root, microencapsulate this extract and determine some phenolic compounds of the final product. Five gram of licorice root was mixed with 50 mL of water at 60°C and the extraction was maintained for 60 min. The extract was microencapsulated by spray drying using maltodextrin (MD) and gam Arabic (GA) as the wall materials with ratio of core to wall (1:3). Control emulsion was prepared without using any wall material with ratio of core to wall (1:0). Some phenolic compounds of LRE, the microencapsulated LRE and control emulsion were performed by liquid chromatography-mass spectrometry (LC-MS-MS). We determined 20 different phenolic compound in LRE, microencapsulated LRE and control emulsion, namely catechin hydrate, acetohydroxamic acid, vanillic acid, resveratrol, fumaric acid, gallic acid, caffeic acid, phlorizin dehydrate, hydroxycinnamic, ellagicacid, silymarin, 2-hydroxy 1,4 nph, bütein, naringenin, luteolin, kaempferol, curmin, hydroxyben, salisilik acid and quercetin. Among the compounds, hydroxycinnamic and vanillic acid were the highest while acetohydroxamic acid, 2-hydroxy 1,4 nph, gallic acid and caffeic acid were the lowest. This study provides directly comparative data among some phenolic compounds amount of LRE, microencapsulated LRE and control emulsion.

Key Words: Licorice root extract, spray drying, liquid chromatography-mass spectrometer (LC-MS-MS), phenolic compound

Sensory Properties of Microencapsulated Licorice Root Extract During Storage

Bülent BAŞYİĞİT[1*], İbrahim HAYOĞLU[1], Mustafa ÇAM[2]

[1]Food Engineering Department, Engineering Faculty, Harran University, 633300, Haliliye, Şanlıurfa-TURKEY
[2]Food Engineering Department, Engineering Faculty, Erciyes University, 38039, Melikgazi, Kayseri-TURKEY
[*]Corresponding author: bulentbasyigit@harran.edu.tr

Abstract

Licorice (*Glycyrrhiza glabra* L.) root extract as beverage is consumed commonly in Turkey, especially Southeast region. However, the extract shelf life is limited because of high microbial load depending on low acidity and high water activity. Therefore, suitable and reliable methods have been tried to extend shelf life of it. Microencapsulation is also alternative method to improve licorice root extract shelf life as this technique is used to protect core material from environmental factors. The main aim of this study was to investigate changes in sensory properties of microencapsulated licorice root extract during 6 months. For production, spray drying technology was used. Feed emulsions were prepared using maltodextrin as wall material with ratio of core to wall (1:3) (FE1) and without using any wall material with ratio of core to wall (1:0) (FE2). The two samples were stored at 20 °C for 6 months and sensory analysis methods were used during storage. The analysis was done on a monthly basis. 1.25 g of FE1 and 5 g of FE2 were dissolved with 100 mL of boiling water. These two samples were stored at 4 °C for 60 min and then served as 25 mL portion. Consumers were asked to evaluate their degree of taste, aroma, color and flavor after consumption of the samples. Consumers rated samples between 1 and 10. Overall acceptability sensory properties of samples still more than 6.8 value during 6 months. As a result, licorice root extract shelf life could be improved by spray drying technology.

Key Words: Licorice root extract, spray drying, microencapsulation, sensory properties

Effects of Chickpea Flour on Quality Characteristics of Siverek Flat Bread

Ali YILDIRIM[1*], Nebahat ÇELEBİ[1], Ahmet Ferit ATASOY[1]

[1] Faculty of Engineering, Department of Food Engineering, University of Harran, Şanlıurfa-TURKEY
*Corresponding author: ayildirim10@gmail.com

Abstract

In this study, effect of addition of 10 and 20 % of chickpea flour to wheat flour on the nutritional, sensory, and rheological properties of Siverek flat bread was researched. According to the results obtained, increasing the addition of chickpea flour to wheat flour significantly ($p<0.05$) decreased gluten, sedimentation value, falling number, ash, moisture and carbonhydrate contents which are the chemical and physico-chemical qualities of flours. Chickpea flour addition rised in crude fat, protein, fiber and farinograph values, but decreased the extensograph values of flour mixtures significantly ($p<0.05$). It was showed that using chickpea flour effected negatively on crumb softness, fragility and crumb color but positively on crust color, taste and aroma of bread which are sensory characteristics. Although chickpea flour decreased the fermentation time of dough and water absorption values of chickpea added flour were higher than those of without added chickpea flour. It was determined that chickpea flour added Siverek bread retarded the bread stalling due to low moisture content.

Key Words: Chickpea flour, Wheat flour, Quality, Fermentation, Siverek flat bread

The Role of Redox Potential on Aroma Components of Yoghurt

Menekse BULUT[1*], Yusuf TUNCTURK[2], Duried ALWAZEER[1]

[1]Res. Center for Redox Applic. in Foods, Dept. of Food Engineering, Faculty of Eng., Igdir Univ.-TURKEY
[2]Department of Food Engineering, Faculty of Engineering, Yüzüncü Yıl University, Van-TURKEY
[*]Corresponding author: gidabenefse@gmail.com

Abstract

Redox potential (Eh) like pH, it is a measurable parameter which means losing or gaining electrons in a system. Redox potential, expressed as volt, although this parameter is important for quality control of fermented dairy products, it is rarely considered. Yoghurt is a fermented dairy product that *Lactobacillus delbrueckeii* subsp. *bulgaricus* and *Streptococcus thermophilus* are used as combination on producing of yoghurt. The typical yoghurt aroma is generally composed from lactic acid, which provides sour and refreshing taste to yoghurt, and various carbonyl compounds such as acetaldehyde, aceton and diacetyl, which are considered to be the foundation aroma compounds of yoghurt. In yoghurt; S. thermophilus produces more acetaldehyde, acetoin and diacetyl than *Lactobacillus delbrueckeii* subsp. *bulgaricus*. The amount of *Lactobacillus delbrueckeii* subsp. and *S. thermophilus* are the same even the Eh value is different. According to recent studies, different aroma profiles were determined in different Eh conditions, during storage. Oxidative Eh conditions make production of aroma compounds enhanced. For example, under oxidizing conditions (+170 to +245 mV), the both acetaldehyde and dimethyl sulfide concentrations are stable during storage, while under reduced conditions (-300 to -349 mV), the acetaldehyde concentration decreased and the dimethyl sulfate concentration increased. On the other hand, under reducing conditions, the production of dimethyl sulphide is improved and also acetaldehyde may be reduced to ethanol. Aroma compounds are an important parameter on yogurt quality control. The aroma components can be controlled by oxido-reduction potential which allows industry to improve and protect the aroma quality in yoghurt. Therefore, this study has reviewed the role of Redox potential on aroma components of yoghurt.

Key Words: Redox Potential, Aroma, Yoghurt

Environmental Impact Assessment of Dairy Process in Turkey

Menekşe BULUT[1], M. Murat CEYLAN[2*], Mustafa CAVUS[2]

[1]Res. Center for Redox Applic. in Foods, Dept. of Food Engineering, Faculty of Eng., Igdir Univ.-TURKEY
[2]Department of Food Engineering, Faculty of Engineering, Igdir University, Iğdır-TURKEY
[*]Corresponding author: mustafa.cavus@igidir.edu.tr

Abstract

Environmental impact assessment (EIA) has been implemented in Turkey since 1993. The determination of positive, negative and economical effects of EIA are important. Milk and dairy products are also included in EIA. Some of milk and dairy production are; pasteurized and UHT milk, yogurt, cheese, ice cream, butter and cream products, beside that some of liquid wastes are; wastewater, milk, buttermilk and whey.
These wastes, which are not assessed in any way, can be converted to dangerous factor for human and environmental health. Pollution of milk and dairy production facilities is caused by whey. Whey occurs during cheese production. 1 liter of whey includes approximately 50.000 mg / l lactose, 9.000 mg / l protein, 150 mg / l phosphorus, 1.500 mg / l nitrogen. The purification of whey wates is quite difficult but after purification process it can be used in cheese, lor cheese, isolation of bacteria, production of biogases, fertilizer and etc. On the other hand, recycling of wastewater is used in treatment systems, land irrigation, reusing. In this study, we rewiewed environmental impact assessment of dairy process in Turkey.

Key Words: Environmental Impact Assessment, Dairy, whey

3-MCPD and Relationship with Some Vegetable Oils

M. Murat CEYLAN[1*], Ayhan BAŞTÜRK[2], Mustafa ÇAVUŞ[1], Menekşe BULUT[1]

[1]Iğdır University, Department of Food Engineering, Iğdır-TURKEY
[2]Van Yüzüncü Yıl University, Department of Food Engineering, Van-TURKEY
*Corresponding author: m.murat.ceylan@igdir.edu.tr

Abstract

3-Chloropropane 1,2-diol (3-MCPD) is a kind of foodborne contaminants. 3-MCPD has been identified as genotoxic carcinogen by the Food Scientific Committee of the European Commission and is defined as a process-based contaminant recommended by the UK Food Advisory Committee to reduce food and foodstuffs to minimum levels. And also it is known that 3-MCPD can be occured by high temperatures processing on high level oil and high level salt containing products. According to some studies, 3-MCPD has been detected in many products such as such as crackers, biscuits, malt, coffee, fried cheese, baby products, potato products, refined vegetable oils and animal fats. The results of the conducted studies showed that the amount of 3-MCPD in a wide variety of foods was determined as 0.2-20 mg/kg. Especially in products that are contained refined vegetable oil and NaCl (such as bakery products) higher quantities of 3-MCPD have been found. Some studies shows that, 3-MCPD has not been detected in naturel or cold pressed crude vegatable oils; in the refined vegetable oils has been detected as 0.2-13 mg/kg. The lowest amount has been found in the rapeseed oil amount of 0.3-1,5 mg/kg, and the highest amount is 4.5 - 13 mg/kg in palm oil.

Key Words: 3-MCPD, vegetable oils, foodborne contaminants

Effect of Deep Frying Process on Quality of Vegetable Oils

M. Murat CEYLAN[1*], Ayhan BAŞTÜRK[2]

[1]Iğdır University, Department of Food Engineering, Iğdır-TURKEY
[2]Van Yüzüncü Yıl University, Department of Food Engineering, Van-TURKEY
[*]Corresponding author: m.murat.ceylan@igdir.edu.tr

Abstract

Deep fat frying is a process used in food industry and for many homemade foods. This process makes foods enhanced in texture, friability, taste aroma properties and shelf life. On the other hand, deep fat frying has some disadvantages for oils. The oils, which are uses in deep fat frying, can be exposed to some spoiling factors such as high temperature, air, humidity and oxygen. For these reasons, many physical and chemical changes can occur in the oil components like oxidation, formation of polar substances, hydrolysis, and polymerization, isomerization, foaming and increasing of viscosity. Besides, especially after thermal oxidation some typically harmful components like hydroperoxides, aldehydes, ketones, hydrocarbons and etc can be formed. All kind of these reactions can give undesirable taste, aroma, odor and textural qualities to fried food. However, it can also lead to the release of some oxidized volatile components such as free radicals, trans-fatty acids, acrolein, alpha and beta-unsaturated aldehydes. The reactions in deep fat frying depend on factors such as replenishment of fresh oil, frying conditions, original quality of frying oil, food materials, type of fryer, antioxidants, and oxygen concentration. High frying temperature, the number of frying, the content of free fatty acids, polyvalent metals, and unsaturated fatty acids of oil decrease the oxidative stability and flavor quality of oil. Antioxidants prevent the oil oxidation, but the effectiveness of antioxidant decreases with high frying temperature. In this present study, the effects of high temperature on the quality of oils used in deep fat frying are discussed.

Key Words: Deep fat frying, frying oil quality, hydrolysis, oxidation, polymerization.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Can Permeate Be Used Instead of Salt in Bread-Making?

Ayhan DURAN[1]*, Özen ÖZBOY ÖZBAŞ[1]

[1]Aksaray University, Food Engineering Department, Aksaray-TURKEY
*Corresponding author: duranayhan@gmail.com

Abstract

Salt is one of the fundamental component in bread-making. It appears to have two major functions. First is taste; bread made with no salt is quite tasteless. The second is to affect the dough's rheological properties. However, the World Health Organization encourages people to consume reduced-salt products for a healthy lifestyle. Permeate generally emerges as a by-product of the UF process, which has a wide application area in the production of milk products with high protein and lactose content, especially in the production of certain cheeses. Recently, it has begun to be explored as an additive in the other areas of food industry, besides dairy. The aim of this study was to investigate whether permeate can be used as an additive which can substitute salt in bread without lowering the qualities of dough and bread. So, the amount of salt to be added to the bread formulation was reduced to half of the original amount and replaced by 3% of the permeate. Permeate supplemented breads were subject to physical and sensory analysis. Results indicated that the permeate addition improved the bread volume as well as the taste and flavor, and even the crust and crumb colors of the permeate including breads. As a result of this preliminary study, by using permeate in bread formula, it was understood that both the amount of salt can be reduced and the breads can be produced without adversely affecting the quality. However, more work needs to be done in this regard.

Key Words: Permeate, bread, salt

Determining the Food Safeties of Spice Red Peppers in the Market

Emine BAKAN[1], Ahmet Levent INANC[2*]

[1]Şahinbey District Directorate of Provincial Food Agriculture and Livestock, Gaziantep-TURKEY
[2]Department of Food Engineering, Faculty of Engineering and Architecture., KSU, Kahramanmaras-TURKEY
*Corresponding author: linanc@ksu.edu.tr

Abstract

Nowadays, very important changes have occurred in the old-fashioned food processing and consumer presentation approaches due to the fact that countries are updating their food laws in the direction of "producing healthier and safer food" and consciousness of consumer. Food safety has been the most important social issue in recent years. In this study, 50 ground red pepper were researched in terms of aflatoxin contamination. The amounts of aflatoxin in red peppers were determined by HPLC instrument. Aflatoxin (B1+B2+G1+G2) amounts were found between 0-10 µg/kg in 34 samples (%68), >10-20 µg/kg in 6 samples (%12), >20-30 µg/kg in 6 samples (%12), >30-40 µg/kg in 3 samples (%6) and >40-50 µg/kg in 1 samples (%2). In terms of aflatoxin B1 amounts were determined between 0-5 µg/kg in 31 samples (%62), >5-10 µg/kg in 6 samples (%12), >10-15 µg/kg in 2 samples (%4), >15-20 µg/kg in 2 samples (%4), >30-35 µg/kg in 3 samples (%6) and in >35-40 µg/kg 1 samples (%2). Aflatoxin contamination was not detected in 2 (%4) samples. The numbers of the samples; not containing Aflatoxin B2, G1 and G2, but containing only Aflatoxin B1, that is, having the same total aflatoxin value are 9 (% 18). According to European Union and Turkish Food Codex regulations, the upper limit of total aflatoxin in red pepper for spice is 10 µg/kg and is 5 µg/kg for aflatoxin B1. In the 32 percent of the packaged red peppers putting on the market for retail sale, aflatoxin content was determined over the legal limits.

Key Words: aflatoxin, food safety, red pepper

The Determination of Some Physical and Chemical Properties of Bread Wheat Cultivars Harvested in Nevşehir and Their Flours

Kâmil Emre GERÇEKASLAN[1*]

Nevşehir Hacı Bektaş Veli Univ., Engineering-Architecture Fac., Food Eng. Dept., Nevşehir-TURKEY
*Corresponding author: emre@nevsehir.edu.tr

Abstract

In this study, some quality characteristics of bread wheats cultivated in Nevşehir and flour obtained from these wheats were investigated. For this purpose, a total of 15 wheat samples were collected from 9 different bread wheats (Bezostaya (3), Tosunbey (3), Pehlivan (2), Odeska (2), Bayraktar, Konya 2002, Altay 2000, Sönmez 2000, Gerek). The grain size and uniformity, hectoliter weight, thousand kernel weight, ash content and protein content analyses were performed in the wheats. Furthermore, dry-wet gluten, gluten index, normal and delayed zeleny sedimentation tests, ash and protein content analyses were carried out in the obtained flours. It was determined that Tosunbey wheat cultivar has the highest hectoliter weight (84.56 kg), wet gluten (%45.05), dry gluten (%15.7), normal and delayed zeleny sedimentation (32 and 45.5 cm3) and protein (13.56%) values. In addition to this, it was observed that the quality characteristics of the same wheat grown in different regions of Nevşehir province differ from each other at a significant level ($p < 0.05$). For example; the highest and the lowest hectoliter weight values belonged to same wheat (Tosunbey) that brought from different regions.
This study was supported by the project of NEÜADP13F25 by Nevşehir Hacı Bektaş Veli University Scientific Research Projects Coordination Unit (BAP).

Key Words: Bread wheat cultivars, flour, physical and chemical properties

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Some Physicochemical Properties, Antioxidant and Anthocyanin Contents of Traditionally Produced Plum Pestil (*Prunus domestica*)

Memnune ŞENGÜL[1], Neva KARATAŞ[2*], Elif Feyza TOPDAŞ[1], Melek ZOR[1]

[1] Ataturk University, Faculty of Agriculture, Department of Food Engineering, Erzurum-TURKEY
[2]Ataturk University, Health Sciences Faculty, Department of Nutrition and Dietetics, Erzurum-TURKEY
*Corresponding author: ngungor@atauni.edu.tr

Abstract

In this study, pestils were produced using two different formulations (control and with hazelnut). The concentrated pulps were spread over trays in a thin layer and drying process was done in shadow. Plum fruits, pulps and different pestil samples were evaluated in terms of their some physicochemical properties.
Total dry matter (TDM) % values for fruit and its pulp are 15,02±0,07 and 20,305±0,261, respectively. TDM values of pestils increased significantly with addition of hazelnut (90,105%±0,02). Ash content of control and hazelnut added pestil were in the range of 3,215%±0,064 to 4,120%±0,014. There were significant differences ($p<0,05$) in titratable acidity of samples and the highest value was determined in control pestil as 2,935±0,12 (% malic acid). The pH values of the pestil samples varied between 3.6515±0,03 and 3.695±0,07. The lowest protein was determined at fruit (0,265%±0,12) and the highest value was found in the hazelnut added pestil (5,025%±0,15). According to color measurements, L, a and b values were highest in fruit (29,63±0,46, 6,43±0,27 and 10,93±0,07, respectively). The highest anthochyanin content was observed in plum fruit (0,570±0,04 mg/L) while the least was in hazelnut added pestil (0,35±0,12 mg/L). The results showed that antioxidant capacity of pestil samples were positively correlated with the hazelnut addition. It was exhibited that hazelnut added pestil had the highest ABTS scavenging activity in terms of IC50 value (13,23±1,20 µg/ml) and the control pestil sample had the highest DPPH scavenging activity as 30,66±0,85 µg/ml. Total phenolic contents of samples varied between 34,610±2,772 to 77,655± 1,456 mg GAE/g. Pulp had the highest total phenolic content while plum fruit was the lowest. Using formulation and short boiling times provided plum pestils which had high bioactive contents and less browning.

Key Words: Pestil, plum, Prunus domestica, antioxidant activity, anthocyanin content

Good Manufacturing Practices for Problems in Table Olive Processing

Ayşen YILDIRIM[1*], Fatma ÖZTÜRK[2], Latife ERTEN CARAN[3]

[1]Olive Research Institute, Food Technology Department, İzmir-TURKEY
[2]Olive Research Institute, Agriculture Economy Department, İzmir-TURKEY
[3]Olive Research Institute, Plat Protection Department, İzmir-TURKEY
*Corresponding author: yildirimaysen9@hotmail.com

Abstract

Table olive enterprises in our country are generally composed of small family type enterprises and in most of these enterprises, technical and hygienic infrastructure seems to be insufficient. Quality losses are seen in the product due to the problems caused by both improper harvesting method and transport, storage, process of olives in unsuitable conditions before processing, and improper end-product storage. In experiencing these problems; the reasons can be sorted as the fact that the table olive enterprises are small and scattered, technical and hygienic substructure is not enough, the difficulties experienced in supplying quality and continuous raw materials, the time and type of olive harvest can not be determined properly and there is a lack of knowledge and experience of staff working in the business. Preventing product loss is important because it will contribute to the country's economy as well as affect human health positively. For this reason, in order to overcome these problems in this regard, it is necessary that the improvement of technical and hygienic conditions of enterprises, efficient control and inspection, taking all the precautions to cover the appropriate production conditions by employing experienced and educated personnel in all stages of olive growing up to the final product in table olive production. In this context, increasing the numbers of enterprises having good manufacturing practices will play an effective role in solving this problem.

Key Words: Table Olives, Production, Quality, Good Manufacturing Practices, HACCP

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Chickpea Flour on Quality Characteristics of Noodle

Ali YILDIRIM[1*], Ayşegül KAYA[2], Ahmet Ferit ATASOY[1]

[1]Faculty of Engineering, Department of Food Engineering, University of Harran, Şanlıurfa-TURKEY
[2]Şanlıurfa Commodity Exchange, Şanlıurfa-TURKEY
*Corresponding author: ayildirim10@gmail.com

Abstract

In this study, whole wheat flour, refined wheat flour, 10 and 20 % of chickpea-fortified with refined wheat flour was used in noodle production. Effect of chickpea flour on chemical, physico-chemical, cooking and rheological properties of flours, doughes and noodles was researched. According to the results obtained, the amount of ash, oil, crude fiber, protein and moisture in whole wheat flour was found to be higher than that of refined wheat flour due to the increase of the amount of chickpea flour ($p < 0.05$). Addition of chickpea flour decreased in carbohydrate, gluten, gluten index, dry gluten and falling number of flour. The effect of chickpea flour on the rheological properties of the dough was investigated. Most of the farinograph values increased while the glutograph values decreased. When cooking properties of noodles were examined, there was an decrease in cooking time, volume increase, water absorption, an increase in the amount of leached material during cooking. The use of 10% and 20% chickpea flour in the noodle formulation was determined as optimum values in terms of enrichment of the products without detracting from their technological properties.

Key Words: Chickpea flour, Wheat flour, Whole wheat flour, Noodle, Quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Alternative Coating Material to the Cemen of Turkish Pastrami

Ayhan DURAN[1*]

[1]Aksaray University, Food Engineering Department, Aksaray-TURKEY
*Corresponding author: duranayhan@gmail.com

Abstract

Dry cured meat is one of the popular meat products which, constitutes a large proportion of the processed meat products. A great number of dry-cured meat products are produced worldwide with different names such as pastırma (turkish pastrami). Turkish pastrami coated with a cemen paste. Cemen paste composed of ground fenugreek seeds, crushed fresh garlic, dried red chili pepper and cumin. Fenugreek seed powder and garlic in cemen paste is criticized by consumers for their sharp taste and smell. Black pepper, thyme and coriander have been used as food additives. There are many papers showing the antibacterial and antioxidative effects of these spices. But sensory acceptability is an important problem. In this study the pastrami groups has been coated with these spices and the effect of sensory properties was investigated. Color, flavor, appearance and texture were evulated on uncoated meat, coated meat with cemen paste and coated meat with different spices. According to the results of sensory evaluation, the color of coated meat with different spices has received a low color score. The coated meat with different spices did not differ significantly ($p<0.05$) in flavor and texture from the other groups. However, it received a higher score in the appearance of the coated meat with different spices. As a result it can be concluded that fenugreek paste with different spices can be a good alternative for meat processors to overcome the sensory problems that arise from cemen coatings.

Key Words: Pastrami, cemen, sensory evaluation

Effects of High Power Ultrasound on Microbial Inactivatoin in Dairy Products

Vildan AKDENİZ[1*], A. Sibel AKALIN[1]

[1]Ege University, Faculty of Agriculture, Department of Dairy Technology, Izmir-TURKEY
*Corresponding author: vildan.akdeniz@ege.edu.tr

Abstract

Milk is a highly perishable food because of its composition and heat treatment is the most common and traditional method in dairy techonology to reduce the microbial spoilage. But traditional heat treatments often results in the formation of undesirable flavours, colour and the loss of valuable nutrients. Therefore, there has been a tendency towards alternative technologies which provide least damage to the nutritional ingredients and longer shelf life instead of the traditional heat treatment. High-power ultrasound is one of these innovative technologies and called as green technology because of eco-friendly nature.

In the dairy industry, high-power ultrasound is used as a processing technique for microbial inactivation due to its advantages such as minimization of valuable nutrients and flavor loss, greater homogeneity and significant energy savings compared to conventional heat treatment. Microbial inactivation by ultrasound application is mainly due to the acoustic cavitation and its physical, mechanical and chemical effects inactivate bacteria and deagglomerate bacterial clusters. It has been proposed that acoustic cavitation effects by ultrasound damage bacterial cell leading its death. The main mechanisms which provide cell death is resulted from the thinning of cell membranes, the breaking and shearing of cell walls, production of free radicals and localized heating which damage cellular structural and functional components such as DNA.

In this study, the basic principles of high power ultrasound and studies on microbial inactivation in dairy products, including research findings, will be presented.

Key Words: High power ultrasound, microbial inactivation, dairy

Biosurfactant Applications in Food Industry

Ebru UYAR[1*]

[1]Harran University, Biology Department, Molecular Biology Section, Şanlıurfa-TURKEY
*Corresponding author: ebruuyar@harran.edu.tr

Abstract

As a natural class of surface-active compounds, biosurfactants originated from microorganisms has gained attention during the last few decades. These structurally diverse molecules are considered as environmentally friendly because they are biodegradable and moderately non-toxic. Biosurfactants are made up of a hydrophilic and a hydrophobic moieties that confer a wide range of properties including the ability to lower surface/interfacial tension of liquids and to form microemulsions between two immiscible phases. Furthermore, wetting, emulsification, foaming, and detergency are among some of the other substantial activities of biosurfactants for which they are extensively used in different aspects of food industry. In food processing, great deal of attempts have been made to inhibit or eradicate biofilms so far. Even with the best cleaning and sanitizing strategies, biofilm formation which in turn shields the producer bacteria from unfavorable conditions and helps them to attach to the sufaces where the food processing is performed, remains an important problem for food formulation. Through their antibiofilm activity, lower toxicity and environmentally friendly features, biosurfactants are more preferred than chemical surfactants. In addition to this, biosurfactants are also used as biopreservatives for food preservation since they posses effective antimicrobial properties. Various applications of microbial biosurfactants as food additives, including but not limited to food emulsifiers, antibiofilm, antimicrobial, and antioxidant agents, will be discussed in details.

Key Words: Biosurfactants, applications, food industry

Isolation and Molecular Identification of Yeasts from Different Sources for Probiotic Use

Hüsniye Tansel YALÇIN[1*], Birgül GÜRKAN[1], Ebru UYAR[2], Yiğit TERZİ[1]

[1]Ege University, Biology Department, Basic and Industrial Microbiology Section, İzmir-TURKEY
[2]Harran University, Biology Department, Molecular Biology Section, Şanlıurfa-TURKEY
*Corresponding author: tansel.yalcin@ege.edu.tr

Abstract

Although probiotics are as old as the history of fermented foods, they first gain importance in the early 20th century when positive impacts of lactobacilli on the microbial flora of gastrointestinal tract (GIT) has been suggested. Most of the studies indicated that bacterial strains predominantly from *Lactobacillus* and *Bifidobacterium* genera have possess probiotic properties. Through several mechanisms, such as production of antibacterial peptides, probiotics prevent colonization of the pathogenic bacteria within GIT. In antibiotic-treated patients, however, genetic transfer of antibiotic resistance from probiotic bacteria to inhabitant bacteria of GIT makes the use of the relevant probiotic bacterial strains unavailable. Therefore, especially during the antibiotic treatment of some infectious diseases of GIT, such as antibiotic-associated diarrhoea, the yeasts with natural resistance to antibiotics like clinically approved *Saccharomyces boulardii* can be safely used. Taking into account Generally regarded as safe (GRAS) status and larger cell size of the yeasts that cause stearic hindrance for colonization of pathogenic baceria, we intended to isolate yeast strains with probiotic potential from different samples. One-hundred and thirteen yeast isolates were obtained from various samples including fermented products, infant feces, boza, apple vinegar, etc. Probiotic potential of the yeast isolates were determined in terms of antibiotic and bile resistancy. Additionally, antagonistic activity towards several pathogenic microorganisms were also evaluated. Molecular level characterizations of the yeast isolates were achieved by sequencing analysis of D1/D2 domain of 26S rDNA regions. The results indicated that *Wickerhamomyces*, *Yarrowia*, *Pichia*, *Candida*, *Saccharomyces*, *Kluyveromyces*, *Clavispora*, *Debaryomyces* were among the genera where more than 40 yeast strains with probiotic potential were belonged.

Key Words: Isolation, screening, probiotic yeast, molecular identification, 26S rDNA

Pestil and Köme Production in Turkey and in the World

Selin ENGİN ALİHANOĞLU[1*], Mehmet KARAASLAN[1], Hasan VARDİN[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: selinengin@harran.edu.tr

Abstract

Pestil (Fruit leather) and köme(Walnut sausage-Churchkhela) are traditional foods produced in Turkey, is usually prepared to beat the winter, and high nutrition values as energy, vitamins and minerals. Pestil is usually produced from fruits such as grapes, mulberries, figs and apricots in our Country. In a survey study carried out on the pestil and köme production in Turkey, "according to the official numeric results, the total pestil-köme produced in Turkey of 6625 tons, while production value in Gümüshane is 5 thousand tons alone. As of 2014, Turkey ranks 9th on the basis of monetary value and the amount is based on the 8 world exporter. In the world, Germany is the country that exports the largest amount of pestil. After Germany, the others as China, Belgium, Holland and Mexico, respectively. As a contents of pestil and köme; milk, glucose, sugar, honey, walnut or hazelnut are used in the production line. In the production of fruit pestil, stages such as handling of syrups, clarification, concentration, spreading, drying, cutting and packaging are applied. The high-energy pestil and köme are also one of the important foodstuffs in terms of the nutrients they contain. As reported by several authors, in 100 gr pestil; 330-450 kcal energy, 35-55 mg. phosphor, 350-400 mg. potassium and 20-25 mg sodium. Because of the fruit source, the potassium ratio is considerably higher than sodium, and this is regarded as a positive quality in terms of nutritional physiology.

Key Words: Pestil, Köme, Fruit leather, Walnut sousage, Churchkhela

The Relation Between Yogurt Consumption and Obesity

Serap FENDERYA[1*], Ayşe Sibel AKALIN[2]

[1]Ege University, Ödemiş Vocational Training School, İzmir-TURKEY
[2]Ege University, Faculty of Agriculture, Dept. Of Dairy Technology, İzmir-TURKEY
*Corresponding author: serap.fenderya@ege.edu.tr

Abstract

Obesity is an abnormal or excessive accumulation of body fat that may affect human health and life quality unfavorably. The global rise in obesity is an increasing health problem as it is associated with increased risk of cardiovascular diseases, type 2 diabetes, hypertension and certain cancers. Obese children have also an increased risk of obesity-related diseases. Obesity is occurred by complex interactions between genetic factor, behavioral pattern, social and environmental conditions. However, gut microbiota is identified a novel factor affecting human obesity and associated health risks. Alteration in gut microbiota and also intestinal barrier dysfunction contribute to the chronic inflammation that is a hallmark of obesity. It was reported that yogurt and probiotic yogurt consumption may improve gut health and reduce chronic inflammation by enhancing immune responses, intestinal barrier function, lipid profiles and by regulating appetite.

Studies have shown that people have calcium-sensing receptors in the gastrointestinal tract. These receptors are thought to be related to the regulation of people's appetite. Also, intercellular calcium levels can affect adipocyte fat metabolism. High levels of calcium intake decrease calcium levels in cells by reducing calcium intake, which promotes lipolysis and inhibits adipocyte fat production. This suggests that yoghurt and similar calcium-rich dairy products consumption is important for reduced risk of obesity. Further studies are needed to reveal the anti-obesity effects of conventional yogurt and yogurt fortified with probiotics, considering that yogurt is an important dietary source for nutrients and other bioactive components.

Key Words: Yoğurt, Obesity, Probiotics, Human health

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Extraction Method on the Yield and Quality of Pomegranate Seed Oil

Selin ENGİN ALİHANOĞLU[1*], Asliye KARAASLAN[2], Mehmet KARAASLAN[1], Hasan VARDİN[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
[2]Harran University, Vocational High School, Şanlıurfa, Turkey
*Corresponding author: selinengin@harran.edu.tr

Abstract

Pomegranate is originated in the area confined by Persia, south-east Anatolia and India. Pomegranate plantation expanded to many parts of the world because of high demand of pomegranate fruits. Pomegranate fruits have attractive red color, health promoting rich polyphenolic content, and desirable flavor-aroma. It was reported that there are more than 400 commercial products in the USA market containing pomegranate fruit or pomegranate based components. Therefore, pomegranate fruits became both an industrial product used in various food sectors for the manufacturing of value added food commodities, and a prominent functional food due to its high bioactive compound. Processing of pomegranate fruits results in formation of various byproducts such as skin, intermembrane, and seed. These byproducts generally regarded as waste or used as animal-feed. There are studies in the literature showing bioactive content of pomegranate byproducts. Pomegranate seeds are one of the most valuable part of the processing byproducts which contain high amount of oil. Pomegranate seed oil is used in production of phyto-tablets, nutritive agents and cosmetic products. In this study we have evaluated the effect of extraction method on the yield and quality of pomegranate seed oil. Peroxide number, oil yield, oil color, iodide number, antioxidant activity, total phenolic content were measured to evaluate the quality characteristics of the obtained oil samples. The highest yield was obtained in soxhlet extraction method while the higher quality oil samples obtained from cold-press extracted oils.

Key Words: Pomegranete, pomegranete seed oil, extraction method, yield, quality

Recovery Potentials of Grape and Sour Cherry by Products

Fatih Mehmet YILMAZ[1*], Ahmet GÖRGÜÇ[1], Mehmet KARAASLAN[2], Hasan VARDİN[2], Cavit BİRCAN[1]

[1]Adnan Menderes University, Engineering Faculty, Food Engineering Department, Aydın-TURKEY
[2]Harran University, Engineering Faculty, Food Engineering Department, Şanlıurfa-TURKEY
*Corresponding author: fatih.yilmaz@adu.edu.tr

Abstract

Grape (*Vitis vinifera*) and sour cherry (*Prunus cerasus*) are two of the important industrial fruits in the world. Grape has larger harvesting areas and production rate (77.44 million ton and 7 million ha) than sour cherry (1.38 million ton and 214,000 ha). After processing of these fruits, substantial amounts of residues are formed which contain valuable bioactive compounds. Sour cherry and grape are comparable since they have same by-products as pomace and seed, and similar features in terms of main compositions and potential applications. Literature studies showed that grape pomaces have 0.1-34.2 mg g-1 dw total monomeric anthocyanins and detected anthocyanidins are malvidin, petunidin, peonidin, delphinidin and cyanidin. On the other hand, sour cherry pomaces have 0.22-24.4 mg g-1 dw total monomeric anthocyanins and cyanidin derivatives are detected as anthocyanidins. Total phenolic compounds of sour cherry and grape pomaces were reported as 4.7-91.29 and 7.7-72.8 mg g-1 dw, respectively. It is reported that grape seed oils have 84-88% unsaturated fatty acids while sour cherry seed oils have 90-95%. The dominant fatty acids within the grape seed oil are linoleic, oleic, palmitic and stearic acid while for sour cherry seed oil are oleic, linoleic, stearic and palmitic acid. It should be noted that the amounts of bioactive compounds in sour cherry and grape residues may vary between cultivars and by external factors such as seasonal changes, harvesting and processing. As a result, sour cherry and grape residues have similar and comparable total phenolic, monomeric anthocyanin and unsaturated fatty acid contents.

Key Words: Sour cherry, grape, food by-product, bioactive compounds

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of Vegetable Milk With Cow's Milk

Büşra GÖNCÜ[1*], Mutlu Buket AKIN[1], Musa Serdar AKIN[1]

[1]Harran University, Engineering Faculty, Department of Food Engineering, Şanlıurfa-TURKEY
*Corresponding author: busragoncu@harran.edu.tr

Abstract

Raw milk which obtained by the ingestion of one or more cows, goats, sheep or mandarins, not heated above 40 ° C or no transaction with equivalent effect is breast secretion outside the colostrum (TGK, 2009). Even if they vary according to the cultures of the consumed milk variety societies, milk is the first thing that comes to mind when it comes to milk. Lactose is one of the most important nutrients in milk. Because of lack of lactase enzyme, lactose may cause such as swelling, cramping, stomach gas, diarrhea in some individuals. This disease is lactose intolerance which is a kind of carbohydrate malabsorb. Although the rapid growth of world population, limited natural resources lay the ground work for research into the development and reformation of animal and vegetable proteins. In recent years, it has been reported that vegetable milk can be an alternative to cows and humans by food and nutrition researcher. When comparing to cow milk and vegetable milks, the most noteworthy point is that lactose does not exist in the vegetable milk and therefore does not cause lactose intolerant in lactose-sensitive individuals.Soy milk is the first thing that comes to mind when it comes to vegetable milk in today. Soy milk has been features as no lactose, does not cause allergic reactions such as cow's milk, does not contain cholesterol and even lowers serum cholesterol levels.
Another vegetable milk considered to be new is almond milk. Although the studies on the subject are limited, it has been stated that is an alternative to vegetarians, lactose intolerant, elderly, cardiovascular and diabetic patients. In this study, it is aimed to give information about herbal milk which is increasing in popularity today and the products produced with them.

Key Words: Vegetable milk, lactose, lactose intolerant.

Optimization of Gelatin Extraction From Chicken Skin by Response Surface Methodology

Ümran CANSU[1], Kıymet YILDIZ[2], Gökhan BORAN[2*]

[1]Harran University, Şanlıurfa Technical Sciences Vocational School, Şanlıurfa-TURKEY
[2]Van Yüzüncü Yıl University, Department of Food Engineering, Van-TURKEY
*Corresponding author: gboran@yyu.edu.tr

Abstract

Gelatin, mostly obtained from porcine skin and bones, is a multi-functional and natural protein with many applications in different fields. In the last decade, many studies were published on alternative raw materials. In this study, chicken skin, as one of the poultry processing by-products, was evaluated for its potential in gelatin manufacturing. According to the results obtained, chicken skin was composed of 51.5% water, 35.0% lipid, 11.5% protein and 0.6% minerals. Based on hydroxyproline content, it was estimated that over 90% of its protein was collagen. In optimization study, 26 trials with 4 factors at 3 levels, and 2 central points were run based on a central composite design. Processing time with diluted alkali (1) and acid (2), extraction temperature (3) and time (4) were independent variables while hydroxyproline content and gel strength were followed as dependent variables. Extraction conditions maximizing dependent variables were 139 and 180 min processing time for diluted alkali and acid treatments, respectively, and extraction at 55°C for 7 h. Under the conditions given, gelatin showed a gel strength of 162.9 g and the yield was 70.2% based on hydroxyproline. Considering the protein amount in comparison with the amount of raw skin used, 6.6% protein yield was achieved. This study showed that chicken skin can be used as a raw material in gelatin production as long as its lipid content was efficiently diminished.

Key Words: Chicken skin, extraction, gelatin, response surface method.

Protein Isolation from Sesame Bran

Fatih Mehmet YILMAZ[1*], Ahmet GÖRGÜÇ[1], Cavit BİRCAN[1]

[1]Adnan Menderes University, Engineering Faculty, Food Engineering Department, Aydın-TURKEY
*Corresponding author: fatih.yilmaz@adu.edu.tr

Abstract

Turkey is one of the top industrial sesame-processing countries in the world. Sesame (*Sesamum indicum* L.) is the raw material of tahini and tahini halva which are the traditional products of Turkey. Because of the fact that sesame seeds grown in our country is not enough to meet the demand of sesame-processing industries, sesame is intensively imported from different countries all around the world such as Nigeria, Ethiopia, Sudan and Pakistan, thus Turkey is currently the third in the world among the sesame seed importing countries. Approximately, 6% of dehulled sesame in roasted sesame and tahini production is removed from the process as bran, and this bran contains approximately 15 - 20% protein. There are literature studies on the production of plant protein from sesame meal which is obtained after oil separation with hexane extraction. However, there is no study on protein production from sesame bran which is removed from the industrial process and is considered as waste. It has been emphasized that sesame proteins contain sulfurous compounds such as methionine and cysteine, and that sesamin, sesamol and sesamolin which have high antioxidant properties, making sesame proteins special and alternative to other vegetable proteins. After conducted experiments, protein content of sesame bran was found as 14.96%. Extraction (1:10, w/v) with cellulolytic enzyme mixture Viscozyme L in ratios of 0.1 and 5% increased the extraction yield (58.06 and 75.58%, respectively), in comparison to standard alkaline extraction (29.24%).

Key Words: Sesame bran, food by-product, plant protein, enzymatic extraction, Viscozyme L

Conjugated Linoleic Acid in Milk and Dairy Products

Aslı ÇELİKEL[1*], Büşra GÖNCÜ[2], M. Buket AKIN[2], M. Serdar AKIN[2]

[1]Mardin Artuklu Univ., Higher School of Tourism and Hotel Man., Gastronomy and Cul. Art, Mardin-TURKEY
[2]Harran University, Faculty of Engineering Department of Food Engineering, Şanlıurfa-TURKEY
*Corresponding author: acelikel2@gmail.com

Abstract

Conjugated linoleic acid (CLA), a natural component of foods derived from ruminant animals, is a fatty acid composed of 18 carbon atoms and containing various isomers depending on the cis and trans configuration of the two double bonds. Among the CLA isomers, those having the most biological activity are cis-9, trans-10 and trans-11 and cis-12. Most of the CLA isomers are composed of the cis-9, trans-11 isomer. This isomer is also called "rumenic acid". Rumenic acid accounts for about 90% of total CLA in beef and milk. The wide variety of benefits of CLA results from the separate or common effects of each or some of the isomers. In general, CLA promotes the immune system and enhances the development and growth. It also has anti-carcinogenic, fat and cholesterol-lowering effects, anti-arteriosclerotic, anti-oxidant, anti-diabetic, signal transduction, anti-bacterial, free radical scavenger and anti-oxidative effects.
Milk and milk products containing significant amounts of essential fatty acids constitute 70% of total CLA intake in human nutrition. The amount of CLA in the composition of the milk varies depending on animal species and the animal's dietary pattern. The highest amount of CLA is found in sheep's milk, which is followed by cow's and goat's milk. The technological processes applied during the production of dairy products and the cultures used cause the changes in the amount of CLA. In this study, studies on CLA in milk and dairy products have been reviewed.

Key Words: Conjugated linoleic acid, milk, dairy products

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Knowledge of Food Business Workers About Food Safety System in Mardin

Aslı ÇELİKEL[1*], Semra GÜRBÜZ[1], Tuğba ARIK YÜKSEL[2], Hala HASSAN[1]

[1]Mardin Artuklu Univ., Higher School of Tourism and Hotel Man., Gastronomy and Cul. Art, Mardin-TURKEY
[2]Mardin Artuklu Univ., Higher School of Tourism and Hotel Man., Hospitality Management, Mardin-TURKEY
*Corresponding author: acelikel2@gmail.com

Abstract

The purpose of this study is to determine the general knowledge about food safety programs of workers employed in restaurants and other food business operators in Mardin. The survey was conducted from January to February involving 140 food businesses. A total of 192 food business workers had been reached. The results showed that approximately half (53,6%) of the workers' work experience in any kind of food business was 1 to 5 years, majority (85,9%) of food workers ages were between 19 and 36 and 82,3% were males. 51% of workers stated that they had health check-up during recruitment. In addition, altough 80,7% of workers didn't heard about HACCP system before, 43,6% of them defined HACCP system properly. The majority of responders (75,5%) said food safety education is given on a regular basis, however 34,9% state that they have taken such education only at the beginning of their job. A majority of surveyed workers state they were aware of their responsibilities about the matters relate to food safety (71,9 %). The results showed that knowledge of employees about food safety is insufficient so for better results organizing some trainig programs is suggested.

Key Words: Food Safety System, Workers, Mardin

A Research on Functional Salgam Beverage Production

Hidayet SAĞLAM[1*], Büşra YAVUZ[1], Zeynep KARABACAK[1], Cemil TEKE[2]

[1]Kilis 7 Aralık University, Faculty of Engineering & Architecture, Food Engineering Dept., Kilis-TURKEY
[2]Kilis 7 Aralık University, Voc. School of Social Sciences, Management and Organization, Kilis-TURKEY
*Corresponding author: hidayetsaglam@kilis.edu.tr

Abstract

Salgam beverage is red, colored, cloudy and sour drink produced by lactic acid fermentation, which is unique to our country. The fermentation period of salgam beverage took about 2-4 weeks. Bulgur flour, water, sour dough, black carrot and salt were used as raw materials and also hibiscus plant (*Hibiscus sabdariffaun*), turnip and red beet were used in the production of salgam beverage. Three varieties of salgam beverage were produced in the form of only black carrot, black carrot+turnip+red beet and hibiscus+black carrot, and their characteristics were compared with commercial salgam beverage. As a result of the fermentation for 15 days, the pH values were determined between 3.57-3.60, total acidity were found to be between 21-12.02 g/L, total antioxidant amount between 79.46-83.98 µg/ml and total amount of phenolic substances between 289-391 mg GAE/L. The results of microbiological analysis showed that the number of Streptococcus species were between 3.5*107-6*107 cfu/ml, the number of lactic acid bacteria were between 3.5*107-6.5*107 cfu/ml, total yeast and mold numbers were between 4.5*107-1.1*108 cfu/ml and the number of bacteria were determined between 4.0*107-1.1*108 cfu/ml. It was observed that the salgam beverage containing hibiscus plant has higher antioxidant and phenolic contents than other salgam beverages. Based on the results of color, taste, smell, and general impression analyzed in the sensory analysis evaluation, it was suggested that the sample of salgam beverage containing hibiscus plant is the most popular salgam beverage.

Key Words: Salgam beverage, Hibiscus, Fermentation

The Impact of Temperature on the Production of Kombucha

Hidayet SAĞLAM[1*], Kübra KILIÇ[1], Uğur TÜRBECİ[1], Mehmet DEMİR[1], Mert Can YILDIZ[1], Cemil TEKE[2]

[1]Kilis 7 Aralık Univ., Faculty of Engineering & Architecture, Food Engineering Department, Kilis-TURKEY
[2]Kilis 7 Aralık Univ., Vocational School of Social Sciences, Management and Organization, Kilis-TURKEY
*Corresponding author: hidayetsaglam@kilis.edu.tr

Abstract

Kombucha is a slightly sweet, gassy and acidic drink produced by the fermentation of sugar and tea with "tea fungus", a symbiotic relationship between yeast and bacteria. In this study; the influence of the temperature difference on the composition of the kombu tea and on the growth of the fungus was investigated. According to the results obtained at 28 °C; titration acidity 0.001-0.0083 %, pH 3.24-6.3, density 1.038-1.034 g/ml, brix 8.66-10.06, antioxidant value 75.15-80%, phenolic substance content 0.396-0.43 mg GAE/L, L * 0.39-2.91, a * 1.03-3.52 and b * 0.52-4.73 were detected. On the other hand, in the case of the kombu tea produced in the room conditions, the titration acidity 0.01-0.004%, pH 3.5-4.15, density 1.036-1.037 g/ml, brix 8.3-9.56,% antioxidant 76.58-85.93, phenolic substance content 0.3096-0.3635 mg GAE/L, L* 1.11-2.27, a* 2.18-2.39 and b* 1.88-3.64 were identified. It was determined that production time can be completed in 10 days when the production temperature at kombucha was fixed at 28 °C and it would be 15 days under room temperature conditions. In addition, it was determined that the flavor characteristics of the kombu tea subjected to fermentation in room conditions for 15 days were better than the flavor characteristics of the kombu tea, which is producted at 28 °C. This is thought to be due to the continuation of fermentation so the increase in the amount of acetic acid in the kombucha at 28 °C.

Key Words: Kombucha, Antioxidant, Phenolic substance, Fermantation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Cellulase Producing Ability of *Trichoderma* Strains Isolated from Harran Plain

Mumine GURUK[1], Asliye KARAASLAN[1], Hasan VARDIN[1], Mehmet KARAASLAN[1]*, Arif BOZDEVECI[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: mk385@cornell.edu

Abstract

Cellulases are a group of enzymes mainly decomposing cellulose microfibrils present in plant cell walls. Plant cell wall is one of the most abundant and complex biopolymer existing on the earth. Cellulases are generally used in food, textile, paper industry as well as production in detergents. Cellulases has significant economical value and broad usage in the industry. Therefore it is necessary to explore novel cellulase sources. Generally microorganisms are used for the cellulase production. In this research, *Trichoderma* spp. fungus, a major producer of cellulase, that was isolated from Harran plain had been investigated. Morphological, microscopic and genetic identification of the six fungi isolates were carried out and their cellulase production ability were determined. The ITS region of four of the isolates were displayed over 90% similarity with the DNA sequences of *Trichoderma* spp. currently deposited into the databases. The molecular size of fungal cellulase was found as to be 32 kDa by SDS-PAGE analysis.

Key Words: Cellulases, *Trichoderma* spp., Harran plain

Biochemical Characterization of Cellulase Enzymes Obtained from Trichoderma Strains Isolated from Harran Plain

Mumine GURUK[1], Asliye KARAASLAN[1], Hasan VARDIN[1], Mehmet KARAASLAN[1]*, Demet EKTIREN[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: mk385@cornell.edu

Abstract

In this study the biochemical characterization of cellulase enzymes obtained from *Trichoderma* strains isolated from Harran plain was carried out. The soil samples were collected from corn and wheat fields locating in Harran plain and transferred to laboratory under suitable conditions. The soil samples were used as medium for isolating *Trichoderma* strains. Isolated *Trichoderma* strains were taken into a fermenter and stimulated for cellulase production. The supernatant was used as cellulase source and cellulase enzymes synthesized by *Trichoderma* were purified from the supernatant. The purified enzymes were examined for their biochemical characteristics. Optimum working conditions of cellulase had been studied. The optimal temperature for cellulase enzyme activity was 40°C, optimum pH 5.0, best reacting time 60 min and ideal substrate concentration was determined as 2% CMC. The fungal cellulase activity was compared with the activity of the commercial cellulase enzyme. The fermentation produced enzyme by using *Trichoderma* spp. isolated from Harran plain displayed remarkable cellulose disrupting activity.

Key Words: Cellulase enzymes, Biochemical characterization, *Trichoderma* spp., Harran plain

Importance and Production of Enzymatic Additives Used in Baking

Hasan VARDİN[1], Fatma ÖZAYDIN[1]*, Ayhan ATLI[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: ftmaozydn@gmail.com

Abstract

Enzymes are protein molecules secreted from animals, plants and microorganisms that act as catalysts in chemical reactions. Enzymes can regulate intracellular responses by modifying the rate and specificity of the response.Bread is an important source of food consumption because it is a basic food material and a good source of energy. Just as in many countries of the world, most of the daily calories in our country are derived from cereals and products. In the food sector, production is carried out by adding commercial enzyme preparations directly to food during preparation of various foods or production processes. Its enzymes derived from plant and animal sources or from microorganisms by certain techniques are often used for the purpose. Commercial microorganisms are mostly used in the production of enzymes. Alpha-amylase, B-amylase and proteases in the flour are determines the quality of the flour bread. These enzymes are found in different amount depending on the variety of wheat and growing conditions. This situation directly affects the quality of the bread. Deficiency of alpha-amylase and surplus of protease enzymes are generally present in the wheat flour. The main function of amylase in wheat flour is to break down complex starches into simple sugars. Proteases also cause the dough to soften and reduce the gas holding capacity. In order to make good quality bread, it is obligatory to add missing enzymes as ready commercial preparations to flour.

Key Words: Bread, Enzyme, Flour, Additives

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Application of Microencapsulation in Oils

Hasan VARDİN[1], Esra ABACI[1]*, Mehmet KARAASLAN[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: abaciesra1991@gmail.com

Abstract

Encapsulation is defined as coating of a substance or mixture with another substance or system (wall material) and microcapsules are in micrometers and millimeters. Encapsulation technology is now used in many fields such as pharmacology, chemistry, cosmetics, textiles and food. In food products, mostly aroma components, enzymes, vitamins, minerals, color components and oils are microencapsulated. Marine, vegetable and essential oils and their components are becoming more and more popular due to their naturalness, health benefits, consumer demands and their functional properties. However, oils are chemically unstable and can undergo oxidative degradation, especially when exposed to oxygen, light, moisture and heat, and their volatile compounds can be lost. Microencapsulation technology may be used to develop natural, healthy products containing these oils, to preserve biological and functional properties, to prevent oxidation, to extend shelf life, to retain the flavor of oil-soluble flavors (controlled release) and to mask flavors of oil-soluble bitter substances The selection of the wall material and the technique in microencapsulation of food products is important since it directly affects the properties of the microencapsules to be obtained. Wall materials used in microencapsulation of oils are generally carbohydrates and proteins. Microencapsulation techniques include: emulsification, spray drying, freeze drying, coacervation, polymerization, extrusion, cocrystallization, fluidized bed coating and inverse gelation. It can be said that the microencapsulation method has become an increasingly important issue in food technology. Therefore, by working on this aim, many studies in laboratory work can be applied in practice.

Key Words: Mikroencapsulation, Oils, Food

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Natural Food Colorants: Extraction Methods and Enhancement of Stability for Food Applications

Mustafa ÇAVUŞ[1*], Mehmet DEMİRCİ[2], M. Murat CEYLAN[1], Menekşe BULUT[1]

[1]Iğdır University, Engineering Faculty, Food Engineering Department, Iğdır-TURKEY
[2]Istanbul Sabahattin Zaim University, Engineering Faculty, Food Engineering Department, Istanbul-TURKEY
*Corresponding author: mustafa.cavus@igidir.edu.tr

Abstract

Food colorants have been extensively used in food industry in order to prevent the color losses that may occur during process and storage and achieve the desired appearance in the final product. Food colorants are subcategorized 3 main groups including synthetic, natural and nature identical. Synthetic ones are mostly preferred (45-50% to 25-30%) due to their cost of production and stability. Synthetic colorants, whose varieties have been increasing steadily, are very common in terms of their usage and amounts in the food industry. Recently, both consumers and producers have been started to question their reliability due to the exposing of the toxic effects of some synthetic colorants. Regarding mentioned problem, not only consumer complaints but also legal regulations has enforced manufacturers to cease or lower the usage of synthetic colorants. The increasing demand for natural food colorant impelled academia and industry to develop novel extraction methods with minor loses in matrix, and also finding new ways to enhance their stability. Natural food colorants have a wide range of production and trade, including direct use of plant material, extracts from vegetable sources (red beet, red fermented rice) or animal sources (indigo carmine red obtained from Dactylopius coccus), carbohydrates obtained by heat treatment (caramel) or chemically synthesized (carotenoids), inorganic and vitamin-based (riboflavin) colorants. The aim of the present study was to summarize extraction methods of natural colorants and how to increase their stability for food applications.

Key Words: Natural Colorants, extraction methods, increasing stability, food applications

A Novel Drying Technique: Electro Hydrodynamic Drying (EHD), Working Principle and Food-Based Applications

Mustafa ÇAVUŞ[1], Mehmet DEMİRCİ[2], Menekşe BULUT[1], M. Murat CEYLAN[1]

[1]Iğdır University, Engineering Faculty, Food Engineering Department, Iğdır-TURKEY
[2]Istanbul Sabahattin Zaim University, Engineering Faculty, Food Engineering Department, Istanbul-TURKEY
*Corresponding author:

Abstract

Drying which is one of the oldest and easiest food processing methods is used to improve shelf-life of foods and fabricate them lighter and smaller for transportation via reducing the water content. Traditional drying techniques have many advantages such as; primitiveness and the small fund investment required, tough which has insufficient energy efficiency also requires long drying term and various structural changes. Moreover, conventional drying has a negative environmental impact. For this reason the selection of a suitable drying method is very important. Innovative drying methods must provide low-cost and high-quality of the drying process and improve the final quality of food products. Electrical treatments has been applied in the food industry and agriculture in recent years. One of these electro hydrodynamic (EHD) drying is non-thermal novel processing technique, which contains corona wind, that generated when a high voltage is applied to an electrode of very small radius of curvature. This system used for drying consists of one or multiple point electrode and a plate electrode. Moreover it produced in an electrostatic field that increases the speed of mass and heat transfer during convective drying processes. As a result, in this study, we summarized the use of the new non-thermal drying technique, the EHD system, in food.

Key Words: Electrohydrodynamic Drying, Non-thermal drying, food quality

Determination of Rabbit Chymosin Gene Exon and Intron Regions

Selin ENGİN ALİHANOĞLU[1*], Meral ATLI[1], Mehmet KARAASLAN[1], Hasan VARDİN[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: selinengin@harran.edu.tr

Abstract

The rabbit is a species belonging to the lagomorpha (rabbit) group and leporidae family of mammals. This species possess 44 chromosome. There are 143.360832 nükleotide, 2886 protein, 1934 gene on 13. chromosome of rabbit and chymosine gene is between 53708876-53717491 nükleotides on this chromosome. Aim of this study was determination of exon and intron regions of chymosine gene. For this purpose bioinformatics analyses were done. Bovine chymosin, rabbit chymosin and human rennin was used as a guide in bioinformatics analyses and exon and intron regions of chymosin determined as 9 intron and 8 exon. In this study 8 of rabbit Exon chymosin were determined as 65, 165, 634, 1851, 202, 113, 164, 101 base pair and 9 of introns were determined as 1452, 662, 166, 1851, 1279, 647, 512, 353 base pair respectively and determined exons and intron regions verified with PCR reactions.

Key Words: Chymosin, Rabbit Chymosin, Exon, Intron

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Nutritional Changes in Different Sorghum (*Sorghum bicolor* L.) Genotypes During Sprouting

Kevser KARAMAN[1*], Yusuf Murat KARDEŞ[2], Turhan DORAN [2], Mevlüt AKCURA[3], Mahmut KAPLAN[2]

[1]Erciyes University, Faculty of Agriculture, Agricultural Biotechnology Department, Kayseri-TURKEY
[2]Erciyes University, Faculty of Agriculture, Field Crops Department, Kayseri-TURKEY
[3]Çanakkale Onsekiz Mart Univ., Faculty of Agriculture, Field Crops Department, Çanakkale-TURKEY
*Corresponding author: kevserkaraman@erciyes.edu.tr

Abstract

The nutritional values of the edible parts of sprouts of beans and cereal have gained interest in recent years because it is thought that sprouts having exceptional nutritive value. Sprouts are an important source of protein, mineral, dietary fiber, and vitamins in human diets and examples of 'functional food' defined as lowering the risk of various diseases and/or exerting health promoting effects. The aim of our study was to show the nutritional value of sprouts of different sorghum (*Sorghum bicolor* L.) genotypes. For this aim, protein, condensed tannins, resistant, starch, nonresistant starch, total starch, dietary fiber, total phenolic content and antiradical activities of sorghum sprouts were determined. Sprouts were grown for 10, 12 or 15 days at 70% humidity and 25 ºC with 18 hour sunlight. After harvest, sprouts were air dried and stored at -18 ºC until analysis. According to the results, protein content (%) was in the range of 12.17±0.27 and 30.99±0.51 among genotypes. The lowest starch content (%) was determined as to be 3.37±0.05 and the highest was as to be 22.51±0.45. Besides, dietary fiber content (%) was changed in the range of 30.27±0.60 and 46.36±1.25. Total phenolic content of sprouts was determined with Folin Ciocalteu method and the results were detected as to be 19.58±0.48-34.80±1.84 mg/g. For antiradical activity evaluation, %inhibition values were calculated and the results were monitored in the range of 4.07±0.61 and 8.72±0.83%. The results indicated that sprouting improved the nutritional quality of sorghums and also big variation was observed among genotypes in terms of examined properties.

Key Words*:* Sorghum, sprout, nutritional, total phenolic, antiradical

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Ozonation Process on Pesticide Residues in Fruit and Vegetable

Büşra ACOĞLU[1], Perihan YOLCI ÖMEROĞLU[1*], Tugba OZDAL[2]

[1]Uludag University, Faculty of Agriculture, Food Engineering Department, Bursa-TURKEY
[2]Okan University, Faculty of Engineering, Food Engineering Department, Istanbul-TURKEY
*Corresponding author: pyomeroglu@uludag.edu.tr

Abstract

Pesticides, plant growth regulators, and substances used to protect against degradation during storage and transport before or after harvesting time. Investigation of pesticide residue levels in agricultural products has become very importan to protect human and enviromental health. If farmers obey good agricultural practicies, the pesticide residue levels are expected to be lower than the Maximum Residue Limits set in the national and international regulations. On the other hand, pesticide residues are stil among the top ten hazards according to 2016 European Union Rapid System for Food and Feed. Besides, consumers prefer to have foods in their diet with lower amount of residue. Therefore, it is important to develop an effective method for reducing pesticide residue levels in plant-derived food products. Ozone is a well-known gaseous chemical agent capable of oxidising a variety of organic and inorganic compounds in gaseous phase, on solid substrate and aqueous solutions, either by direct attack, or through a radical mediated mechanism involving the hydroxyl radical. It has been reported in many literature that ozone as gas or dissolved in water is an effective method to reduce pesticide residues from fruits and vegetables. For example, in a study it was obserded that chlorpyriphos, beta-cyfluthrini alfa-cypermethrin and imidacloprid residues in olives were reduced by 38%-61% in the application of ozonated water for five minutes. Moreover, application of ozone to apple at two different concentrations (1and 10 ppm), mancozeb residue in apple reduced the concentration by 56-97%. In this presentation, application ozone technology to reduce pesticide residues levels in fruits and vegetables is aimed to be discussed in detail.

Key Words: pesticide residue, ozon, fruit and vegetable

Determination of Packaging and Storage Conditions of Erzurum Cheese Halva

Hayrunnisa ÖZLÜ[1*], Meryem AYDEMİR ATASEVER[2], Sevda URÇAR GELEN[2], Mustafa ATASEVER[2]

[1]Atatürk University, Faculty of Health Sciences, Department of Nutrition and Dietetics, Erzurum, Turkey.
[2]Ataturk Univ., Faculty of Veterinary Medicine, Dept. of Food Hygiene and Technology, Erzurum, Turkey
*Corresponding author: hayrunnisa@atauni.edu.tr

Abstract

Erzurum Cheese Halva is a traditional foods product with its own taste and flavor, which is produced with saltless fresh civil cheese, fresh cream and flour mixture. This study was conducted to investigate the changes in the physical, chemical and microbiological properties of Erzurum cheese halva in different packaging and storage conditions. The produced cheese halva samples were stored for two months in two different packaging containers (vacuum and PE (polyethylene) packaging which is suitable for food) and at three different storage temperatures (room temperature, 4°C and -18°C). The titratable acidity, pH, water activity, color (L*, a*, b*), lipid oxidation (TBARS; thiobarbituric acid-reactive substances) levels, and sensory and microbiological analysis of cheese halva samples were investigated during certain periods of storage. Furthermore, the moisture, ash, protein, fat and salt contents of cheese halva samples were determined on the 0 day of storage.

According to the results obtained in this study; on the 8th day of storage in the PE packaged halva samples at the room temperature and on the 15th day of storage in the vacuum packaged halva samples at the room temperature and on the 21th day of storage in the PE packaged halva samples at 4°C were deteriorated (microbiological, chemical and sensory aspects). It was observed that the acid values has increased and consumability has decreased in vacuum packaged products stored at 4°C. The most obvious signs of deterioration in PE packaged products were moldiness but in vacuum packaged products were acetification.

As a result, although neither chemical nor microbiological deterioration occurred in the vacuum packaged cheese halva samples stored at -18°C, some changes were observed in the textural properties. For this reason, future studies must be carried out that is necessary to search for more suitable packaging methods (e.g. modified atmosphere packaging) to protect the product's typical textural structure during the shelf life.

Key Words*:* Cheese halva, Traditional food, Vacuum Packaging, Storage

Cow's Milk Protein Allergy: Use of Milk from Alternative Animal Species

Tuba ŞANLI[1*]

[1]Department of Dairy Technology, Agricultural Faculty, Ankara University, Ankara-TURKEY
*Corresponding author: tcetin@agri.ankara.edu.tr

Abstract

Cow's milk protein allergy (CMPA) is defined as an immunological reaction to one or more milk proteins. Cows' milk contains several proteins known to be potential antigens; they can be generally classified in two major groups: caseins and whey proteins. Because β-lactoglobulin is absent from human milk, it has been considered the most important of cow's milk allergens. But several studies have demonstrated that the casein fraction also has important antigenic potential. Successful therapy in CMPA depends on completely eliminating cow's milk proteins from the child's diet. Considering the possibility of using milk other mammalian species, also mare's milk appears to be a valid substitute, since its composition very close to human milk. However, mare's milk availability is limited and collection is difficult. Donkey milk as well as mare's milk, is the most similar to human milk in terms of composition of protein fraction. The choice of substitute for cow's milk in cases of CMPA depends on low allergenicity. It has a low casein content and a relatively high whey protein content. Additionally, it is characterized by the lake of αs1-kazein and has a different structure β-lactoglobulin. Camel milk may be another good substitute for human milk. It does not contain β-lactoglobulin, a typical milk protein characteristic of ruminant milk. Goat milk is often considered to be less allergenic than cow milk. This option is not fully confirmed as their protein composition are quite similar. Goat milk less prone to cause allergenic reaction mainly due to lower participation of αs1-kazein.

Key Words: Cow's milk protein allergy, Human milk, Milk protein fraction

Pulsed Electric Field Application in Food Protection: Its Microbiological Impact Mechanism and Legal Aspects

Elif Ayşe ANLI[1*]

[1]Ankara University Agricultural Faculty Dairy Technology Department, Ankara-TURKEY
*Corresponding author: kocaoglu@agri.ankara.edu.tr; elifaysekocaoglu@gmail.com

Abstract

The increased consciousness of modern consumers about health issues have led manufacturers to be aware towards to produce microbiologically safe foods of which nutritional, sensorial and functional properties are being protected. Thermal treatments are processes used for maintaining microbiological quality in foods. However, besides positive effects on enzyme and microorganism inactivation, thermal treatments can cause some detrimental effects on sensorial and nutritional properties of foods. In this respect, the interest about alternative non-thermal processes increases day by day. Pulsed Electric Field (PEF) is one of these alternative non-thermal processes having advantage of serving fresh-like products to the consumer. In this process, since low temperatures are used, nutritional quality of foods is protected without consuming excessive amount of energy. This technology is preferred more for liquid foods and in that microorganisms are inactivated by high density electric field at mild heat temperatures (< 60°C). Since PEF is considered as a novel processing technique, in order to be applied commercially it must supply the adequate legal conditions required and determined by European Union (EU) and Food and Drug Administration (FDA).

Key Words: Pulsed electric field, microbial inactivation mechanism, food protection, legal aspects.

Shelf-Stable Lor Cheese Production and Its Characteristics

Elif Ayşe ANLI[1*]

[1]Ankara University Agricultural Faculty Dairy Technology Department, Ankara-TURKEY
*Corresponding author: kocaoglu@agri.ankara.edu.tr, elifaysekocaoglu@gmail.com

Abstract

Lor cheese, is a type of cheese with high biological value, produced by heat-precipitated whey obtained from cheese manufacturing. It can be directly produced by using whey but some amount of milk (up to 30%) can also be added for increasing yield and composition. Lor cheese is a soft and granulated type of cheese, its taste and odor depends on type of whey used and whether or not milk is added during processing. It is a freshly consumed cheese and has a very short shelf-life. Because of its high moisture and lactose content it is a good medium for microorganisms. Its shelf-life can be extended by using some chemical agents, salting 2-3% and storing in cool with earthenware jars or by using modified atmosphere packaging techniques. Drying is an old-type and one of the crucial food protection methods. Microwave vacuum drying system, is an energy and product quality saving technique, suitable for drying of high moisture foods. In this study, Lor cheese was manufactured by using whey obtained from white cheese production with some amount of milk added. Lor cheese samples, fresh and dried under different heating rates of microwave vacuum dryer, were analyzed in their chemical, physical and microbiological attributes.

Key Words: Lor cheese, whey, drying, microwave vacuum drying

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Presence of *Listeria monocytogenes* and Antibiotic Resistance in Certain Food Products

Aksem AKSOY[1*]

[1]Department of Food Engineering, Faculty of Engineering and Architecture, Kafkas University, Kars-TURKEY
*Corresponding author: aksemaksoy@hotmail.com

Abstract

In this study, the presence of *Listeria monocytogenes* and antibiotic resistance profiles were examined in a total of 100 samples consisting of 50 fermented sausage samples and 50 chicken samples obtained from supermarkets and butchers shops. As a result of the isolation and identification tests conducted by conventional culture method, *L. monocytogenes* was not detected in fermented sausage samples. In chicken wing meat samples, 6 (26%) of the isolates were determined to be *Listeria monocytogenes* positive. The antibiotic susceptibility of the isolates obtained were examined through the standard disc diffusion method. As a result of the antibiotic resistance tests, the highest resistance was found against penicillin G (83.3%) followed by erythromycin and meropenem (66.6%), ciprofloxacin and trimethoprim/sulfamethoxazole (50%), tetracycline, cefotaxime and rifampin (33.3%), amikacin and ampicillin (16.6%), respectively. It is positive for public health that there was no *L. monocytogenes* contamination in the fermented sausage samples. However, it is a public health concern that the isolates obtained from the chicken wing samples were resistant to one or more antibiotics.

Key Words: *Listeria monocytogenes*, fermented sausage, chicken wings, antimicrobial resistance

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Determination of Total Phenolic Contents of İsmailağa Apricot Variety

Mustafa KAPLAN[1*], Sevgi ESKİGÜN[1], Okan LEVENT[2], Mehmet ALPASLAN[3]

[1]Ministry Of Food, Agriculture and Livestock, Directorate of Apricot Research Institute, Malatya
[2]Inonu University, Food Engineering Department, Malatya
[3]Namık Kemal University, Department of Nutirition and Dietetics, Tekirdağ
[*]Corresponding author: kaplanmustafa@tarim.gov.tr

Abstract

The origin of İsmailağa apricot variety is Malatya. It is evaluated as table and dried. Amount of dry matter soluble in water varies between 18-22, the medium hardness of fruit meat hardness. Malatya apricots are known to be an important source of phenolic compounds. Phenolic compounds are important in terms of food composition, their effects on the taste-odor formation, their participation in the mechanism of color formation and change, their antioxidant and antimicrobial properties. Phenolic compounds not only prevent the oxidation of foods but also protect the human body from harmful oxidative effects. This study is important to determine the specificity of identification of the phenolic compound compositions of Malatya apricots and to reveal differences among varieties. The amount of TPC was determined spectrophotometrically by modifying the Folin-Ciocalteu method. The TPC values of the samples were calculated as the sum of the amounts of water-soluble and methanol-soluble substances as gallic acid equivalents. The amount of TPC in the İsmailağa apricot sample was determined as 222.04 mg GAE 100g DM^{-1}

Key Words: Malatya apricots, total phenolic content, gallic acid

The Effect of Different Drying Methods on Antioxidant Activity of Malatya İsmailağa Apricot Variety

Mustafa KAPLAN[1*], Sevgi ESKİGÜN[1], Okan LEVENT[2], Mehmet ALPASLAN[3]

[1]Ministry Of Food, Agriculture and Livestock, Directorate of Apricot Research Institute, Malatya-TURKEY
[2]Inonu University, Food Engineering Department, Malatya-TURKEY
[3]Namık Kemal University, Department of Nutirition and Dietetics, Tekirdağ-TURKEY
*Corresponding author: kaplanmustafa@tarim.gov.tr

Abstract

In Malatya, significant part of produced apricot is dried. The origin of the İsmailağa apricot is Malatya and is evaluated as table and dried. Malatya apricot is important fruit as medically and aromatic. In recent years, the use of fruit and vegetables which have high antioxidant activity has been encouraged in human nutrition. The varieties of apricot grown in Malatya are known to show high antioxidant activities compared to the world varieties. İsmailağa apricot variety was dried three different drying methods, namely Sun Dried (SD), Oven Drying (OD) and Sulphurous Drying (SD). Two different methods, DPPH and ABTS, were used in this study. It was determined that the antioxidant activity value decreased as a result of drying in sun and oven, the highest loss occured in oven drying. It has been determined that the antioxidant activity value increases as a result of sulphurous drying. The main reason for this is that sulphur has an antioxidant activity.

Key Words: İsmailağa apricot, drying methods, antioxidant activity

Determination of Antioxidant Activity of Malatya İsmailağa Apricot Variety

Mustafa KAPLAN[1*], Sevgi ESKİGÜN[1], Okan LEVENT[2], Mehmet ALPASLAN[3]

[1]Ministry Of Food, Agriculture and Livestock, Directorate of Apricot Research Institute, Malatya-TURKEY
[2]Inonu University, Food Engineering Department, Malatya-TURKEY
[3]Namık Kemal University, Department of Nutirition and Dietetics, Tekirdağ-TURKEY
*Corresponding author: kaplanmustafa@tarim.gov.tr

Abstract

Malatya is an important apricot production center. The origin of the İsmailağa apricot is Malatya and is evaluated as table and dried. Malatya apricot is important fruit as medically and aromatic. In recent years, the use of fruit and vegetables which have high antioxidant activity has been encouraged in human nutrition. The varieties of apricot grown in Malatya are known to show high antioxidant activities compared to the world varieties. Malatya apricot is important fruit as medically and aromatic. Two different methods, DPPH and ABTS, were used in this study. Hacihaliloglu apricot variety which is %85 of the apricot cultivated and used as a control were determined 116.95 mg TE 100g DM-1 and İsmailağa apricot variety were determined 141.79 mg TE 100g DM-1 made with DPPH methods. In analysis by ABTS methods, antioxidant activity values were determined 189.97 mg TE 100g DM-1 and 212.53 mg TE 100g DM-1 respectively. It has been determined that the amount of antioxidant activity value of İsmailağa apricot variety is higher than that of the control samples.

Key Words: Malatya apricot, İsmailağa apricot variety, antioxidant activity

Some Properties of Fermented Milk Product Produced by Using Chickpea While Storage

Nuray GÜZELER[1*], Elif ARI[2], Çağla ÖZBEK[1]

[1]Cukurova University Faculty of Agriculture Food Engineering Department, Adana-TURKEY
[2]Silopi District Food, Agriculture and Animal Husbandry, Şırnak-TURKEY
*Corresponding author: nsahan@cu.edu.tr

Abstract

In this research, fermented milk products which were similar with yogurt and produced by clotting of cow, goat and sheep milks with chickpea were stored for 21 days at 4±1ºC. The effects of using different milk types and storage time on pH, titration acidity, dry matter content, fat content, protein content, ash content, acetaldehyde content, tyrosine content, total volatile fatty acids, water holding capacity, serum separation, viscosity, curd firmness, L, a, b values and sensory properties were investigated. According to obtained results; the effects of using different milk types were found significant ($p<0.05$) on pH, titration acidity, dry matter content, fat content, protein content, ash content, acetaldehyde content, tyrosine content, total volatile fatty acids, water holding capacity, serum separation, viscosity, curd firmness, L, a, b values, appearance, consistency properties, odor and taste properties. Storage time had statistically significant effects on pH, titration acidity, protein content, ash content, acetaldehyde content, tyrosine content, total volatile fatty acids, water holding capacity, viscosity, L, a, b values, odor and taste properties of fermented milk products ($p<0.05$). As a result of sensory analysis; when appearance, consistency (by spoon), consistency (in mouth), odor and taste properties were considered, fermented milk product which was produced by goat milk was the most desired product.

Key Words: Cow, goat, sheep, chickpea, fermented milk

Some Quality Characteristics of Karacadağ Rice

Mehmet KÖTEN[1*], Ahmet Sabri ÜNSAL[2], Şerif KAHRAMAN[3], Ali Mücahit KARAHAN[4], Mehmet Metin YAZMAN[5]

[1] Kilis 7 Aralık Univ., Faculty of Engineering and Architecture, Dept. of Food Engineering, Kilis-TURKEY
[2]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
[3]GAP Internatıonal Agrıcultural Research and Traınıng Center, Diyarbakır- TURKEY
[4]Adıyaman Univ., Vocational School of Technical Sciences, Dept. of Food Processing, Adiyaman-TURKEY
[5]Giresun University, Espie Vocational School, Department of Food Processing, Giresun-TURKEY
*Corresponding author: mehmetkoten@kilis.edu.tr

Abstract

In this study; some quality caharacteristics of Karacadag rice was examined, which is farmed on small fields in Southeast Anatolian Region and about to be forgotten but consumed commonly by local people. Rice samples were obtained from 15 locations, which were selected from Şanlıurfa, Diyarbakır and its districts.
According to the results of analyses performed on total 15 rice samples obtained from paddies their specifications were determined as: ash content, protein content, cooking time, water uptake ratio, volume expansion ratio, fibre content, phytic acid content, in terms of colour values (L, a, b) ranged between 0.56-1.05%, 7,94-9,93%, 16.00-19.00 min, 2.50-3.60, 1.08-1.24, 2.92-4.82%, 4.22-6.35 mg/g, 89.59-90.84, -0.33-0.11, 6.06-8.41 respectively. Having studied the results, a high rate of water removal has been noted especially of Karacadag rice.

Key Words: Rice, Karacadag rice, rice quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Dietary Fiber and Cereals

Mehmet KÖTEN[1*], Mehmet Metin YAZMAN[2], Ali Mücahit KARAHAN[3]

[1]Kilis 7 Aralık Univ., Faculty of Engineering and Architecture, Dept. of Food Engineering, Kilis-TURKEY
[2]Giresun University, Espie Vocational School, Department of Food Processing, Giresun-TURKEY
[3]Adıyaman Univ., Vocational School of Technical Sciences, Dept. of Food Processing, Adiyaman-TURKEY
*Corresponding author: mehmetkoten@kilis.edu.tr

Abstract

Dietary fiber (DF) is generally defined as the macromolecules present in the diet that resist digestion by human endogenous enzymes and is essentially composed of plant cell wall remnants, such as cellulose, hemicelluloses, pectic polysaccharides and lignin.
Dietary fiber has beneficial effects on several western diseases, numerous studies find that high dietary fiber intake was associated with a lower risk of cardiovascular disease, type-2 diabetes, and colorectal cancer.
Dietary fiber is present in many plant sources such as cereals, fruits, vegetables. Each dietary fiber has different physical and functional properties. Grains, especially whole grains, contain a range of dietary fibres important for health and prevention of disease. High-fibre cereal products are widely recommended by health authorities due to the well established health promoting effects of cereal fibres. This paper has presented about dietary fiber of some cereals.

Key Words: Dietary fiber, Cereal dietary fiber, wheat, barley, oat

Optimization of Licorice (*Glycyrrhiza glabra* L) Fruit Leather Production

Selin ENGİN ALİHANOĞLU[1*], Demet EKTİREN[1], Hasan VARDİN[1], Mehmet KARAASLAN[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: selinengin@harran.edu.tr

Abstract

Licorice root contains saponin triterpenes (glycyrrhizin, glycyrrhetinic acid and liquirtic acid), flavonoids (liquirtin, isoflavonoids and formononetin) and other constituents such as coumarins, sugars, amino acids, tannins, starch, choline, phytosterols in its content and very popular recent years because of these nutritive values. Biological studies have revealed that licorice chemical constituents have a variety of biological effects, such as anti-inflammatory, antihepatotoxic, anti-ulcer, anti-oxidant, anti-microbial, cytoprotective, and cytotoxic activities. In this study licorice fruit leather production was performed with different amounts of licorice extract (5%, 10%, 20%, 30%), starch (5%, 10%,15%), licorice extraction pH (4.5, 5.5, 9) applied template thickness (1mm, 2mm, 3mm) and optimum production conditions were determined with sensorial and physicochemiocal analysis (pH, color, total phenolic content, antioxidant content) of last products. Optimum production conditions were performed as licorice leathers contains 15% starch, produced with 3 mm thickness template at pH 9. The general lowest acceptibility is observed in leather samples produced with 10% starch 2mm thickness template at pH 4.5.

Key Words: Licorice, Licorice fruit leather, Optimization, Antioxidant content

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Local Cheese Varieties in the Mediterranean Region

Nuray GÜZELER[1*], Betül KILINÇLI[1]

[1]Çukurova Universty Faculty of Agriculture Food Engineering Department, Adana-TURKEY
*Corresponding author: nsahan@cu.edu.tr

Abstract

One of the regions most known for its variety of cheese is the Mediterranean region. The Mediterranean region is located in the south, one of the seven regions of Anatolia. the boundaries of the region are Adana, Antalya, Burdur, Hatay, Isparta, Kahramanmaraş, Mersin, Osmaniye. There are many kinds of cheese in the area. Within cheeses such as Adana yörük cheese, Adana fresh cheese, Goat tulum cheese, Lavaş cheese, Dolaz cheese, Çimi Cheese, Akçakatık cheese, Mersin tulum cheese, Anamur Keş are playing an important role in the Mediterranean regional economy and tradition of local food. Cheese is a culture of the blending of the habits of many nations. Particularly in the province of Hatay, spice use is widespread and due to its cosmopolitan structure, cusine culture is just like a taste mosaic. This variety is also reflected in the cheese. Cheeses are a variety of flavors and appearance. The most known of these are; , Hatay village cheese, Künefe cheese, Carra cheese, Sürk, Ezme, Lavaş, Dil, Örgü cheese, Hatay Sıkma cheese, Yogurt cheese, Misellele (Halep Sünmesi) cheese etc. In this study, it was aimed to investigate local cheese varieties in the Mediterranean region of Turkey. This study has included recent researches on the production methods and steps, composition and properties of cheese produced in the Mediterranean region.

Key Words: Cheese; Local Cheese; Mediterranean Region; Hatay local chees

Use of Quinoa (*Chenopodium quinoa* Willd.) Flour in Chicken Meatball Production

Muzaffer KIRPIK[1], Osman KILINÇÇEKER[2*]

[1]Adıyaman University, Kahta Voc. School, Dept. of Plant and Animal Production, Kahta, Adıyaman-TURKEY
[2]Adıyaman University, Voc. School of Technical Sciences, Food Processing Department, Adıyaman-TURKEY
*Corresponding author: okilincceker@adiyaman.edu.tr

Abstract

In this study, mixtures of breadcrumbs and quinoa flour at different ratios were added to chicken meatballs at ratio of 7.5% and their effects were determined. Color values of raw meatballs were measured. Frying yield, diameter reduction, color, moisture retention, fat absorption and sensory properties of fried meatballs at 175 oC for 5 min were evaluated. Addition of quinoa flour increased L and b values of raw samples. However, frying yield and color values of fried samples improved whereas moisture retentions increased and fat absorptions decreased. Consequently, it was seen that the addition of 2:1 quinoa flour:breadcrumbs and 100% quinoa were more advantageous than other treatments in chicken meatballs.

Key Words: Quinoa, *Chenopodium quinoa*, meatball, breadcrumbs

Agriculture Engineering Oral Presentations

Agricultural Economics Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Socio-Economic Analysis of Farms in the Area of Land Consolidation in Isparta Province

Osman MESCİ[1], Bahri KARLI[2*]

[1]Süleyman Demirel Univ., Graduate School of Natural and Applied Sciences, Isparta-TURKEY
[2]Süleyman Demirel Univ, 32200, Isparta-TURKEY
*Corresponding author: bahrikarli@sdu.edu.tr

Abstract

This study aimed to identify post consolidation socio-economic characteristics of the agricultural enterprises, elucidate the consolidation structure before and after land consolidation practice, and determine the economic situation of the enterprises after consolidation in Isparta province. The data-set belong to 2012 production period were obtained by the survey in randomly selected 65 farms in the province. The average farmer experience of the enterprises is 31.55 years. 92.31% of the farmers stated that their distance to the land was shortened after consolidation and 66.15% of them stated that their income has increased. The number of individual plots in each enterprise was 17.25 before consolidation, whereas post consolidation number of plots has decreased down to 10.68 suggesting an increase in average stake-size. The number of erratic parcels before consolidation was 11.02 whereas the number of rectangular parcels (9.00) increased after consolidation. Average gross production value (GPV) is calculated 44273.33 TL in these enterprises of which vegetable production (98.12%) had the biggest share. According to cost analysis of production, 46.41% of costs (33365.46 TL) comes from fixed costs and 53.59% were variable costs. While average gross production (GP) was 49263.71 TL in the enterprises, average net income was calculated as 28971.11 TL. Average gross profit per enterprise was 26393.90 TL, net profit 10907.87 TL, and relative profit was 1.32. In order to enhance the efficiency of consolidation practice in the study area following measures may be taken: educating farmers through regular training and workshops, integrating closed irrigation systems in consolidation processes to ensure usage of modern irrigation systems of farms, developing agricultural and economic policies to increase the scale of the farms, and implementing national and regional policies towards increasing farmer awareness about land consolidation.

Key Words: Land Consolidation, Economic Analysis, Cost, Profitability, Isparta

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Economic Analysis of Cotton in Terms of Irrigation Efficiency: Harran Plain Sampling

Mustafa Hakkı AYDOĞDU[1*], Hatice PARLAKÇI DOĞAN[1], Mehmet Emre EREN[2], Fikret KAYA[1], Ahmet Erhan EREN[2]

[1]Harran University, Faculty of Agriculture, Department of Agricultural Economics, Şanlıurfa-TURKEY
[2]Harran University, Technical Sciences Vocational School, Şanlıurfa-TURKEY
*Corresponding author: mhaydogdu@hotmail.com

Abstract

Cotton is an industry plant that has a strategic importance for Turkey. There were 31.1 million hectares of area used for cotton production in the world, whereas 416 thousand in Turkey in 2016. The 54.45% of the cotton producing areas in Turkey 's is located in the GAP region. The amount of irrigated area in Harran Plan was 165 thousand hectares. According to the GIS data, 55.33% of Harran Plain is cultivated in cotton that was 92.3 thousand hectares in 2016. This rate corresponds to 40.83% of whole cotton areas in the GAP region. In 2016, 2.47 billion m3 of water were used in the Harran Plain by irrigation channels along with the under groundwater irrigations (YAS) feeds. In this study, the plant water need of cotton was determined in Harran Plain based on the Irrigated Crop Evapotranspiration Guide in Turkey. It has been determined that cotton plant in Harran Plain requires 7570,7 m3/ha of water in a production season whereas the irrigation water requirement for cotton plant was determined as 18304,4 m3/ha due to low water transmission and irrigation efficiency which was 94% and 44%, respectively. it is desirable that the efficiency of field application in a well-planned irrigation network is not less than 50-60%. In Turkey, this ratio has been targeted as at least 55%. While 1.74 m3 of water is needed for 1 TL of cotton production, 1.39 m3 of water will be enough when this goal is achieved. This saved water could be used for other sectoral allocations.

Key Words: Cotton; Economic Analysis; Irrigation Efficiency; Harran Plain; Şanlıurfa

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Marketing Efficiency of Farmers' Markets: The Case of Seferihisar District in İzmir Province

Muhammed ÇUHADAR[1*], Hakan ADANACIOĞLU[1], Naciye ORUÇ[1], Hümeyra ŞAHİN[1]

[1]Ege Univ., Faculty of Agriculture, Department of Agricultural Economics, 35100, Bornova-İzmir, TURKEY
*Corresponding author: muhammedcuhadar@gmail.com

Abstract

With today's increasing population, production has become more important. Fruits and vegetables constitutes a large part of this production. The amount of the production in Turkey in 2017, a total of 52.9 million tons, including 22.1 million tons of fruit, 30.8 million tons of vegetables. With this production, the marketing of fresh fruits and vegetables has become an important issue. Marketing begins before the production of goods and continues even after the sale has been made. That's why it is essential to market in an effective and accurate way. Beside this, many problems occur sourced from production and marketing. The most important of these problems is that the marketing system is controlled by middlemen. Excessive middlemen lead to product losses and costs. While farmers sell the goods at low prices, the excess marketing channels cause product prices to increase until it reaches consumers. In this context, as determining the marketing efficiency of farmers, it is aimed to offer solutions to these problems. The research area of this study is the farmers' markets in Seferihisar district of İzmir province. It was interviewed face-to-face with 75 agricultural producers in the research area. According to the obtained study results, in farmers' markets, the product with the highest marketing efficiency index was fresh onion (40.6). The product with the lowest marketing efficiency was mandarin with 3.53. In district markets, the product with the highest marketing efficiency was leek with 5.80 and the product with the lowest marketing efficiency was cauliflower with 0.60. The study also showed that as farm size increased in farmers' markets, farmers had a higher marketing efficiency index.

Key Words: Farmers' markets, Marketing efficiency, Agriculture, Direct marketing

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Place and Importance of Turkey in International Table Olives and Table Olives Marketing

Fatma ÖZTÜRK[1*], Ayşen YILDIRIM[1], Latife ERTEN[1], Önder ERALP[1]

[1]Olive Research Institute, Bornova/İzmir/TURKEY
*Corresponding author:

Abstract

World production of table olives over the last 30 crop years has grown steadily. World consumption of table olives is 2.86 times greater than 30 years ago, increasing by 186% over the period 1990/91-2017/18. It is estimated that world production of table olives for the 2017/18 crop year will increase by 4% compared to the previous crop year, to reach 2 953 000 ton. European Union countries are in the first place in world table olive production. On the other hand, Egypt and Turkey are the other major producing countries which are forecast to have a record crop year with 650 000 t and 455 000 t. The part of %15,4 the world table olive production comes from the Turkey. As a result of the rapidly increasing olive plantation areas in Turkey, important increases are expected in table oil products Table olives is important product for our country's economy and international market. In the 2016/2017 season, 690 thousand tonnes of table olives were exported in the world. Turkey has made about 100 million dollars of exports of table olives that consist of 80% of black table olives. In order to effectively evaluate the production expected to increase in the forthcoming years, table olive production technique should be improved, deficiencies in the marketing organization should be eliminated, marketing strategies should be developed by determining target markets and branding efforts should be increased.

Key Words: Table Olives, Marketing, Export, Production

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Livestocks Water Needs of Gediz Basin by Trend Analysis

Mustafa Hakkı AYDOĞDU[1*], Bülent SELEK[2], Yakup KARAASLAN[2], Bahri KARLI[3]

[1]Harran University, Faculty of Agriculture, Department of Agricultural Economics, Şanlıurfa
[2]Ministry of Forestry and Water Affairs, General Directorate of Water Management, Ankara
[3]Süleyman Demirel University, Faculty of Agriculture, Department of Agricultural Economics, Isparta
*Corresponding author: mhaydogdu@hotmail.com

Abstract

Water is one of the most important input of agricultural activities and has direct effect on living things. Sectoral uses and allocations of water have an important place in basin management plans based productivity and efficiency. The number of provinces located directly and partly in Gediz basin is seven which are İzmir, Manisa, Kütahya, Uşak, Balıkesir, Denizli and Aydın. These provinces constitute 16.1% of the value of live animals in Turkey, while the value of animal products was 12.26% in 2013. Balıkesir is the second and İzmir is the third place in terms of live animals' values in Turkey, while in terms of value of animal products, İzmir is second and Balıkesir is third. Livestock data is dynamic. There are many factors that affect the daily water needs and consumption of animals. Mainly these are animal species, race, breed, age, body fat rate, farm and barn conditions, the area where the animal lives, the air temperature, the amount of moisture in the air, the seasonal conditions, the type and quality of the consumed food, the food ration, the dry matter rate consumed, protein and salt rates in the diet, the animal's fattening or freeing, the animal's physiological status, live weight, and so on. In this study, the numbers of cattle, sheep, goat and poultry and their trends were analyzed by using TUIK and GTHB data. According to the findings, annual water consumption of the livestock sector in Gediz Basin is calculated as 20.1 million m3 in 2024 and 24.8 million m3 in 2030.

Key Words: Livestock; Water Needs; Trend Analysis; Gediz Basin

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Drought Analysis in Ceyhan Basin Using Standardized Precipitation Index

Muhammed ÇUHADAR[1*], Ela ATIŞ[1]

[1]Ege Univ., Faculty of Agriculture, Department of Agricultural Economics, 35100, Bornova-İzmir, TURKEY
*Corresponding author: muhammedcuhadar@gmail.com

Abstract

Drought is defined as a disaster that affects vital activities in the negative direction due to the decrease in the water supply caused by falling rainfall below normal levels observed over the years. Agricultural drought means that the moisture content in the soil is constantly falling below the climatically appropriate amount, so that affects vegetative production and indirectly affects animal production negatively. Agricultural drought is closely related to meteorological drought. Efficiency has become very important in using water resources that are already scarce and decreasing day by day. Particularly in drought conditions, the selection of plants in line with the climate and land structure of a region is one of the effective factors in increasing water efficiency in agriculture. Standardized Precipitation Index (SPI) has been developed in 1993 to improve drought detection and monitoring capabilities. SPI has several features that are more advanced than previous indexes, including simplicity and temporal flexibility, and allow for use in all timelines for water resources. In this study, drought was investigated by SPI method in the Ceyhan basin using the last 32 years of precipitation data. The results have shown us that the last five years have been arid and the drought has increased over the years and it is also wiser to grow drought-resistant crops in Afşin and Elbistan provinces of the basin in order to increase water efficiency.

Key Words: Standardized Precipitation Index, Drought, Ceyhan Basin, Precipitation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Economic Analysis of Greenhouse Tomato Growth in Malatya

Orhan GÜNDÜZ[1*], Gültunay EREN[1], Ayşe ÖZER[1], Onur GÖKÇEK[1]

[1]Inonu University Battalgazi Vocational School, Malatya
*Corresponding author: orhangunduz@inonu.edu.tr

Abstract

The climatic conditions of the coastal region close to the Karakaya dam in Malatya province are suitable for greenhouse. It is one of the alternative agricultural activities that can be recommended for growing tomatoes for the evaluation of idle resources in the farms. The aim of the study was to determine the economic consequences of greenhouse tomato production in order to reach the findings that will guide the producers of the region. The research was carried out in the existing greenhouses in the land of Inonu University Battalgazi Vocational School. Data of the economic values of inputs of tomato growing were collected and analyzed using cost analysis method. As a result of the research, the cost of tomato production and the profitability was determined. The research is the first study on behalf of alternative activity in the region and it is original value in terms of its results.

Key Words: Tomato, greenhouse, profitability, cost, Malatya.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Research on Increasing Efficiency in Kiwifruit Production: The Case of Rize Province

Ahmet Semih UZUNDUMLU[1*], Kübra BİLGİN, Seval KURTOĞLU[2]

[1]Atatürk University, Faculty of Agriculture, Department of Agricultural Economics, 25240 Erzurum
[2]Bayburt University, Demirözü Vocational Higher School, 69000 Bayburt
*Corresponding author: asuzsemi@atauni.edu.tr

Abstract

According to FAO data, China, Italy, New Zealand, Chile, Greece, and France have an important place in the world kiwifruit production. Turkey ranks the seventh with 2% of the world kiwifruit production. In recent years, the demand for kiwifruit in Turkey has reached up to 40-45 thousand tons/year. Approximately 30-40 thousand tons of the demand is produced within the country, and around 5-10 thousand tons is imported from other countries. Turkey's share in kiwifruit accounts for 1% of the production. These figures indicate there are some troubles in the production and consumption balance of Turkey regarding supply. The problem stems not from the lack of production areas, but low productivity. This study aims to investigate producers' problems related to kiwi farming in Rize province, which used to lead kiwifruit production but experiencing a decline in recent years, according to the data of TURKSTAT 2010-2016. For this purpose, 100 households were interviewed face-to-face. According to the results of the study, as the number of individuals, the size of kiwi farming land, and the price of kiwifruit increased, the yield of kiwifruit was found to increase as well. It was also found that the increase in kiwi farming knowledge of the households and the product insurance increased the yield of kiwifruit. As a result, studies should be conducted on giving the producers courses on expanding kiwi farming fields and the benefits of product insurance in order to increase the kiwi yield in Rize province.

Key Words: Yield; Kiwifruit; Export; Rize; OLS Method

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Factors that Effect Consumer Preference for Apple Variety in Erzurum Province

Ahmet Semih UZUNDUMLU[1*], Seval KURTOĞLU[2], Nur ERTEK[1]

[1]Atatürk University, Faculty of Agriculture, Department of Agricultural Economics, 25240 Erzurum
[2]Bayburt University, Demirözü Vocational Higher School, 69000 Bayburt
*Corresponding author: asuzsemi@atauni.edu.tr

Abstract

Apple is one of the fruits that come to mind first among others in Turkey. Apple is the second most produced fruit just after grapes in Turkey. In spite of many apple varieties, Starking and Golden are the most produced varieties in Turkey. This study aimed to determine apple consumption preferences of the households living in the central districts of Erzurum Province. The sampling size of the study was determined using Unclustered Probability Sampling Method. These surveys were analyzed by Probit Method in Limdep 5.0 computer software. 400 individuals selected based on 2016-2017 age and gender data of Turkey from Palandoken, Yakutiye, and Aziziye districts considered to represent Erzurum province were face-to-face interviewed. The socio-economic and demographic factors affecting consumer preferences for apple varieties such as Golden, Starking, Amasya, Granny Smith, Gala, and Fuji were investigated. As a result, consumer satisfaction can be increased in considering the apple varieties consumers have chosen and the economic, social and demographic characteristics of them.

Key Words: Apple; Erzurum; Probit Method; Preference; Consumption

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determining the Factors Affecting Bread Consumption in Erzurum Province

Ahmet Semih UZUNDUMLU[1*], Betül Zehra YILDIRIM, Seval KURTOĞLU[2]

[1]Atatürk University, Faculty of Agriculture, Department of Agricultural Economics, 25240 Erzurum
[2]Bayburt University, Demirözü Vocational Higher School, 69000 Bayburt
*Corresponding author: asuzsemi@atauni.edu.tr

Abstract

Individuals in Erzurum province, as in many provinces in Turkey, obtain a large part of their daily energy needs from bread. Bread is considered an indispensable food by the individuals in this province. For this reason, 400 individuals were face-to-face interviewed considering age groups in order to determine bread consumption levels of people in Erzurum households. These individuals were selected based on their age groups. In the study, the proportion of females and males was 50%, and the age of the interviewees ranged between 15 and 87. As a result, the average price of a loaf of bread was TRY 0.75 and the consumption of bread per capita was 0.77 loaf. In addition, 76.28% of the bread consumption of the households was in the form of loaves. The Ordered Probit Model was employed to determine the factors affecting bread consumption. The bread consumption values between 0, 0.5, 1, 1.5 and 2 were taken as dependent variables. While loaf preference and pasta consumption had a positive effect on the bread consumption of people, rice consumption and being a student affected it negatively.

Key Words: Bread; Consumption; Ordered Probit Model; Health; Erzurum

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Effective Factors in Use of Different Irrigation Systems in Corn Production: Case of Şanlıurfa

Mehmet ALTUN[1*], Mustafa H. AYDOĞDU[1]

[1]Harran University, Faculty of Agriculture, Department of Agricultural Economics, 63300, Haliliye, Şanlıurfa
*Corresponding author: altunmet@hotmail.com

Abstract

The aim of this study is to determine the effective factors in the use and preference of different irrigation systems of corn producers in Şanlıurfa. A survey was conducted with 294 corn producers of which questions were prepared according to Likert attitude scale. The collected data were evaluated statistically in Chi-square and Kruskal Wallis tests using SPSS. According to the results, the factors that are effective in choosing these methods by the corn producers using different irrigation methods are; age, practice, land size, number of households, income, property and education.

Key Words: Şanlıurfa, corn, survey, analysis, irrigation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Agricultural Production and Food Safety Awareness in Adıyaman Rural

İsmail UKAV[1], Ahmet ÇELİK[2*], Çiğdem SABBAĞ[3]

[1]Adıyaman University, Kahta Vocational School, Accounting and Tax Department,
[2]Adıyaman University, Kahta Vocational School, Plant Animal Production Department
[3]Adıyaman University, Faculty of Tourism, Department of Tourism Management
*Corresponding author: ahmetcelik02@gmail.com

Abstract

Farmers' awareness of agricultural activities and food safety is influenced by economic, social, geographical and traditional structures. In this study, it was aimed to determine the agricultural activities and the level of awareness of food safety of farmers living in Adıyaman rural area. For this purpose, interviews were held with 30 people who live in six villages of Adıyaman. Demographics and socio-economic characteristics of the farmers, crops produced, crop and animal food production were examined in the study. In addition, agricultural activities and levels of awareness in safe food production, problems encountered in production and marketing have been identified. The most frequent problems in producers are water access, income diversity, inadequate social environments and unconsciousness in production. It is stated that problems are affecting the living conditions in a negative way and even villages cannot develop, the agricultural production pattern does not vary; the young people abandon the villages and look for employment in the cities. It is remarkable that there is no market security, which is indispensable for the sustainability of rural production. Also, producers do not have sufficient knowledge about the proper use of natural resources as well as modern agricultural practices. The inadequacy of the previous educational studies in the region has also been seen in this study. The producers stated that they would like to receive training on agricultural or non-agricultural activities in order to increase the variety of alternative products (food production, handicrafts) which would increase the income level in accordance with the ecological conditions of the region.

Key Words: Agricultural Production, Socio-economic, Food safety, Awareness, Adıyaman

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Branding and Branding Strategies in Citrus Foreign Trade in Hatay Province

Tuğçe KIZILTUĞ[1*], Halil FİDAN[2]

[1]Mustafa Kemal University, Agricultural Faculty , Departman of Agricultural Economics
[2]Ankara University, Agricultural Faculty, Departman of Agricultural Economics
*Corresponding author: tkiziltug@mku.edu.tr

Abstract

In the globalizing world, branding for foreign trade and producer businesses that want to be a brand in any form has become the most important element that strengthens the competitive advantage. For this reason, one of the most important differentiation tools that separates one brand from the other in both national and international trade are the brand slogan and symbol. The success of the brand is the choice of the appropriate strategy and the identification of the brand symbol and name. One of the most important issues in brand selection is to make the consumer remember the brand and to determine a visual expression style. Because the brand is the seller of the product. For this reason, today, branding and branding require a long process. But it can be argued that branded products have created more gratification in the market than other product features. Application of brand strategies that are appropriate to the product, sector, market and the marketing strategies of the operator provide the advantage of screening the weaknesses of the operator in this race. Therefore, brand strategies need to be determined and applied correctly. Particularly in the case of Hatay, which is at the forefront of geographical branding for agricultural products, the consideration of this issue will have an important place in the approaches of the enterprises there. Because the economy of the province is based on agriculture, industry and foreign trade. At the same time, close proximity to the provinces is a gateway to the Middle East, and cultural closeness is highly influential in the development of trade. In this study, the branding and branding strategies of TEK ASYA Agricultural Products Limited Company, the best business between fresh fruit, vegetable and citrus exporting companies, were examined. The business uses a family brand for all its goods. This brand is the same as the business name.

Key Words: Branding strategies, forgein trade, Hatay

Trend Analysis of Measured Sediment Quantity in Akkonak, Göynük and Palu Water Quality Observation Station on Murat River

Alaaddin YÜKSEL[1], Azize DOĞAN DEMİR[2], Yasin DEMİR[1*], Ramazan MERAL[2], Ekrem YALÇIN[3]

[1]Bingöl Üniversity Faculty of Agriculture, Department of Soil Science and Plant Nutrition, TURKEY
[2] Bingöl Üniversity Faculty of Agriculture, Department of Biosystem Engineering, TURKEY
[3] General Directorate of State Hydraulic Works, TURKEY
*Corresponding author: ydemir@bingol.edu.tr

Abstract

Erosion is the transport of soils by transport mediums such as water, wind or gravity, or transport from one location to another. Water erosion is the most common type of erosion in the world and our country. Water erosion usually occurs in rugged bare fields that receive heavy rainfall. In this study were examined sediment concentrations measured at Akkonak, Göynük and Palu stations on Murat river. In this context, was made a trend analysis of the data measured between 1992 and 2011. As a result of the analysis, it was determined that there is a tendency in the three stations to decrease the amount of sediment transported daily and sediment concentration. However, only the amount of sediment transported from Akkonak station (ton/day) was statistically significant at 0.05 level. This result shows that there is a decrease in the amount of sediment measured at the Akkonak station from 1992 to 2011. The results obtained at other stations have shown that the problem of erosion continues. it is necessary to take soil protection measures in order to protect water quality and to prevent soil losses.

Key Words: Sediment, Murat River, Trend Analysis

The Role of Information Factor in the Transition to Organic Farming of The Farmer: Kadirli Sample

Hasan KURT[1], Nermin BAHŞİ[1]

[1]Osmaniye Korkut Ata University, Kadirli School of Applied Sciences, Osmaniye
*Corresponding author:

Abstract

It is not unlimited in the resources needed for agricultural production, as it is in other sources on Earth. Especially in the land, misapplication and end-use agricultural resources are exhausted. Sustainability of living is directly linked to sustainability in agriculture. Worldwide, organic farming has emerged as a result of the seen that materials and practices used to increase the productivity in agricultural production made damage to the environment in different ways, and the increased concern for the environment. Organic agriculture is among the sustainable agricultural systems. In order to increase the organic agricultural production, it is very important to inform the producers and increase their publishing activities. In this study, it is aimed to learn the knowledge levels of producers about organic farming and the sources of information that producers commonly use. For this purpose, a face-to-face interview was conducted with the farmers who were registered in the Kadirli district of Osmaniye province. In the study, it was determined that farmers did not know organic agriculture in large scale and some farmers expressed it as ungrabless agriculture and natural agriculture. While producers use pharmaceutical franchises as a source of information on agricultural applications, the most convenient information is the mass media.

Key Words: Organic Farming, Information, Information Resource

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Point of View and Perception Level to Organic Products of Consumer

Ali Doğan AKÇA[1], Nermin BAHŞİ[1]

[1]Osmaniye Korkut Ata University, Kadirli School of Applied Sciences, Osmaniye
*Corresponding author:

Abstract

The demand for organic products is increasing and organic production is becoming widespread due to the protection of ecological balance, food safety, healthy nutrition, sustainability and positive effects on environmental protection. Providing reliable and quality products to consumers is one of the most important reasons for carrying out organic agricultural activities. Consumers prefer non-natural and non-harmful products in their food purchases. However, the fact that the production is not meeting the demand cause to the prices of organic products high. For this reason, consumers buy products from the villagers in their immediate surroundings as if they were natural. In this study, it was aimed to determine consumers' perceptions and perceptions of organic products. For this purpose, a questionnaire survey was conducted with 400 consumers in Osmaniye and Şanlıurfa. Consumers are buying because the products grown in the village are natural. Consumers say that the prices of organic products are high and the organic products are inadequate in the market. It is stated that promotions about organic products are inadequate and organic production should be widespread.

Key Words: Organic product, consumer, consumer perception

Climate Change Perception of Harran University Students

Fatma ÖCAL KARA[1], Gönül SEVİNÇ[1], Muhammed Ali PALABIÇAK[1], Turan, BİNİCİ[1], Reşit SEVİNÇ[1*]

[1]Harran Uni. Faculty of Agr. Dep. of Agricultural Economics, Sanlıurfa, Turkey
*Corresponding author: rsevinc@harran.edu.tr

Abstract

Global climate change is the result of increasing of greenhouse gases concentration accordingly the strengthening of natural greenhouse effect due to human impacts. As a result of this strengthening, there is an increase in the temperature of the earth. The rising of air temperature leads to climate change all around world. The main purpose of this research is to determine the level of knowledge about global climate change of the students studying at Harran University. For this purpose, face-to-face survey was conducted with 400 students determined by simple random sampling method in 7 faculties of Harran University. The study was carried out in the period of 2016-2017. 57% of the subjects were male and 43% were female students. The majority of students were aware of climate change (92%), however 49.1% of the students were not concerned at all. The rate of students who think that human activities are effective in global warming is 52.5%. Increasing awareness of students about environmental problems is very important for our future generations. As a result of these findings, students should be educated in environmental awareness courses during their education life, and students should be encouraged to create environmental clubs.

Key Words: Climate Change, Global Warming, Environmental Sensitivities

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of the Factors Affecting Work Satisfaction and Efficiency of Agricultural Engineers Working in Public Organizations: Case of Şanlıurfa Province

Fatma ÖCAL KARA[1], Mehmet Reşit SEVİNÇ[1], Gönül SEVİNÇ[1], Muhammed Ali PALABIÇAK[1*]

[1]Harran University Faculty of Agriculture. Department of Agricultural Economics, Sanlıurfa, Turkey
*Corresponding author: malipalabicak@harran.edu.tr

Abstract

The research was carried out in order to determine the factors affecting work satisfaction and efficiency of the agricultural engineers working in Şanlıurfa Directorate of Provincial Food Agriculture and Livestock (DPFAL). With the research, the professional experience and working desires of the agricultural engineers were evaluated and tried to reveal effective factors in business life. The main data of the study obtained from face-to-face surveys with 67 subjects who want to participate in the survey from agricultural engineers working in DPFAL in 2017. 65.67% of the subjects stated that they always use their talents and skills at work, 32.83% stated that they did not use talents and skills. 26.67% of the subjects indicated that the suitability of working conditions, 20% of the subjects indicated that motivation and 26.67% of the subjects indicated that education as factors that increase work efficiency. In the light of the information obtained, it is considered that legal arrangements should be made for the development of country agriculture. It is considered that the application of policies towards agricultural engineers to increase their motivation, to increase in-service training and to be rewarded based on performance will increase work efficiency and satisfaction.

Key Words: Work Satisfaction, Work Efficiency, Şanlıurfa

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Examination of Milk Consumption Behaviors of Families Living in City Centers: Case of Şanlıurfa Province

Remziye ÖZEL[1], Muhammed Ali PALABIÇAK[1*]

[1]Harran University Agricultural Faculty Department of Agricultural Economics
*Corresponding author: malipalabicak@harran.edu.tr

Abstract

In addition to rapid population growth and urbanization, changes in the characteristics of consumers such as income, education, and increase in women's participation in the economy also cause changes in consumption habits. In this study, it was aimed to determine the factors affecting the milk consumption and purchasing behaviors of the families residing in the urban areas of Şanlıurfa province center districts. In the study, proportional sampling method was used and 439 surveys were applied. The average age of the respondents was 35.08 and the household size was 5.1 persons. While 23.9% of the individuals are graduated from bachelor's degree and associate degree, 25.3% are primary school graduates. Household average monthly income is 3541.93 TL and the share of food expenditures is 26.66%. The average milk consumption of the families is 4.7 Lt in open milk and 3.87 Lt in packed milk. When purchasing forms are examined, it is seen that 11.8% is open milk, 76.7% is packed milk and 11.5% is both packed and light milk. Consumers' knowledge about the product prices was found to be normal (3.22) for packaged milk and similar (2.91) for open milk. It has been determined that the price is no longer significant for open milk consumers but the naturalness, freshness and taste are the front planners in the consumption priorities. As a matter of fact the most effective factors in preferring open milk were freshness (46.0%), second place naturalness (25.3%) and third place taste (26.4%).

Key Words: Consumption behaviors, Milk, Şanlıurfa

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Agriculture and Economic Growth in Republic of Ghana

Remziye ÖZEL[1*], Edwin OKINE[2]

[1]Harran University, Agricultural Faculty Department of Agricultural Economics
[2]Harran University, Graduate School of Natural and Applied Sciences Agricultural Economics
*Corresponding author: rozel@harran.edu.tr

Abstract

The primary objective of this research is to present the current economic position (growth) of the country and to analyse the impact of agriculture on the economy of the country, Ghana. Also, to show the growth and decline between 1984-2014. Further, to examine the performance, impact and contributions of the agricultural sector, service sector and industrial sector on economic growth and their various sub-sectors.
Time series data from 1984-2014 on all the variables of interest was obtained from the World Bank Africa Database 2014, Bank of Ghana, Ghana Statistical Service, Budget Statement and Economic Policy of Government. The Ordinary Least Squares estimation technique was used for the analysis. The results showed that a 1% increase in the growth of the agricultural sector will cause GDP growth to increase by 0.248%. Also, a 1% increase in the growth of the services sector will lead to 0.472% increase in GDP growth. Finally, 1% increase in the growth of the industrial sector will bring 0.315% increase in GDP growth. Also the regression is not non-sense or spurious since DW(1.94)>R^2(0.694) and economically, about 70% of the total variation in GDPD is explained by the explanatory variables. The remaining is 3.14% which is attributed to other factors. Overall, the regression equation is statistically significant.
All the explanatory variables are statistically significant at the 5% level of significance. It is concluded that the service sector contributed most to the overall growth. It is recommended that for Ghana to achieve higher GDP growth rate, she should activate/strengthen the service as well as the agricultural sector to lead the growth in the Ghanaian economy.

Key Words: GDP growth rates, Agricultural sector, Services Sector, Industrial Sector, OLS, SAP and ERP

Robinia pseudoacacia L. Stands Leaf Area Index Within Steppe Zone of Ukraine

Svitlana SYTNYK[1*], Viktoria LOVYNSKA[1], Yurii GRITSAN[1]

[1]Dnipro, Serhii Efremova str 25, 49027
*Corresponding author: Sytnyk_Svit@ua.fm

Abstract

Leaf area index (LAI) for Black locust stands, growing in Steppe of Ukraine, was calculated and analyzed. Biometric characteristics of temporal sample plots and trees, method for determining the structural elements of LAI, results of leaves weight depending on the surface area were presented.
The dependence of mass of leaf samples in fresh and absolutely dry conditions from the age for model trees was analyzed. Ratio of fresh and dry weight to the total surface area of leaf samples was calculated and found its average value. We calculated that the overall average index of leaf surface area for Black locust stands of the Steppe of Ukraine is 4.01. For young LAI is approximate the minimum value and is in the range of 2.27–2.91 m^2/m^2. The maximum value of LAI (11,03 m^2/m^2) corresponds to forest stand of 36 years old, which is the age of maturity for Black locust stands of the Ukrainian steppe zone

Key Words: forest-forming species, biometric tree value, Black locust, age group

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Development of Cooperation in Grain Production of Ukraine: Challenges and Perspectives

Iryna VOLOVYK[1*], Andrii PUGACH[1]

[1]Dnipro State Agrarian and Economic University, S. Yefremov Str., 25, Dnipro, Ukraine
*Corresponding author: interdsau@gmail.com

Abstract

The article deals with the peculiarities of agribusiness in the grain sector of Ukraine, analyzed trends in grain production and the factors affecting it. The structure of producers in agriculture is investigated according to the scale of business. The role of cooperation for raising the competitiveness of small and medium farms on the grain market is grounded. The experience of the first grain cooperatives in Ukraine to develop services and infrastructure for grain storage has been analyzed. It was established that the development of agricultural service cooperatives is the important factor in the formation of sustainable agriculture and rural development.

Key Words: Co-operatives; Farmers; Grain production; Infrastructure

Factors Affecting the Organization's Personnel Policy Formation

O.V. BERBENETS[1*]

[1]Dnipro State Agrarian and Economic University, Ukraine
*Corresponding author: lenaberbenets@gmail.com

Abstract

Abstract. Managers taking personnel decisions must take into account next factors: the unique qualities of every team members, the multidimensionality of manager's activity, the complexity of its formalization, quantitative evaluation and forecasting, stereotypes and employee's bias, their motivation and ideas about social justice, as well as the limits of law. As a result, it complicates the manager's activity in the field of personnel management and imposes special requirements for the creation of a recruitment service of a modern organization.

Key Words: personnel policy, personnel policy organization, human management, factors of the environment, factors of the internal environment.

Particular Qualities of the Business Processes Management of Agricultural Organizations

Olena MYRONOVA[1*]

[1]Ukraine, Dnipro, Dnipro State Agrarian and Economic University, str. S. Yefremova 25
*Corresponding author: i.marketing@dsau.dp.ua

Abstract

In the article the essence and the need to implement a process approach to enterprise management by means of its effective business process management are considered. It is proved that in today's changing business environment the enterprises, organizational structure of which is based on functional and hierarchical principles, are unable to provide adequate efficient response to transient changes and the implementation of appropriate measures in organizing and carrying out of business activities. Under these business conditions the process approach to management, which is one of a few ways for an enterprise to remain competitive, should be considered more efficient. In the article the definitions of business processes by various scientists are analyzed, the author's definition of the business process as an object of management is offered. The main classification categories of business processes of an enterprise are considered. In the article a relevance of introduction of process approach to management of the agricultural organization, caused by competition strengthening in the agro food market, is proved. Classification of business processes is given there. The main directions for business processes improvement and capabilities of their application into the agricultural organizations are generalized in this work.

Key Words: process, business process, agriculture, process approach

Issues of Economic Integration of Ukraine into the European Union

Olena ZORENKO[1*]

[1]S. Yefremov Street, 25 /246. Dnipro, 49000, Ukraine
*Corresponding author: singleflower@i.ua

Abstract

Basic directions of trade and economic collaboration of Ukraine and European Union are reflected, possibilities of Ukraine are outlined in relation to the export of products of animal origin in the countries of European Union.

Key Words: Economic integration, Free trade zone, Import, Export, Non-tarrif trade barriers

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Natural Resource Characteristics of Climate as a Factor of Water Melioration Efficiency

Andrii TKACHUK[1*]

[1]Dnipro State Agrarian and Economic University, Dnipro, Ukraine
*Corresponding author: gandriyko@ukr.net

Abstract

Reviewed one of the important problems of water usage – operational management of watering. In work the methodological approach on an estimation of economic efficiency of water usage in the conditions of change of climatic conditions of territory is shined.
For nowadays, there is no such a simple complex method to determine this indicator. When assessing climatic conditions, taking into account their influence on the productivity of agricultural crops, it is necessary to take into account meteorological factors that have a decisive influence on the development of agricultural crops and, accordingly, determine their yield. To them, first of all, heat and moisture supply should be attributed, and it is necessary to take into account their possible negative influence on the development of the plant, considering that for each crop a certain optimum regime of temperature and soil moisture is required in different phases of its development. To assess the climatic conditions taking into account the potential crop productivity of agricultural, formula provided below CPA.
The calculations showed a close relationship between the CPA and the yield of agricultural crops. Correlation coefficients of the obtained bonds vary depending on the culture and the territory in the range of 0.85-0.98.

Key Words: irrigation, natural resource potential of the territory, water use efficiency

Logistical System of Poultry Enterprises

Maryna POLEHENKA[1*]

[1]Dnipropetrovsk State Agrarian-Economic University, Department of Economics, Dnipro 49000, Ukraine
*Corresponding author: marina_1245@ukr.net

Abstract

The scientific issue of theoretical aspects in forming a logistical system of an enterprise has been studied in the research and the author's definition of a logistical system of poultry enterprises has been provided. The need for creating a logistical system at a poultry enterprise has been grounded and main approaches and features of forming it have been analyzed. It has been determined that the reserve for improving business efficiency at a poultry producing enterprise is the strengthening action of the distributing logistics which is an integral part of a general logistical system at an enterprise and includes all chain of distribution: marketing, transportation and storing. The importance of implementing a logistical management of commodity circulation at poultry enterprises has been proven; it implies transition to the systemic planning and organization which males possible to use possibilities of election processes and advantages of a modern concept used in management of material resources. According to the results of the research it has been determined the optimization of poultry production requires creation of a corresponding informational infrastructure which could collect, organize and relay information using newest informational technologies, modern software, and electronic equipment and computer networks. The author's model of forming a logistical system at a poultry enterprise has been suggested; implementation of the model will make possible to rationalize its productive-distributing activity, maximally optimize the carrying out a set of logistical operation and increase the level of competitiveness.

Key Words: logistics, logistical system, entire enteprrises, logistical flows, information flows, production, distribution.

Factors of Increasing of the Enterprise Competitiveness

Zhanna KRUCHKOVA[1*]

[1]Dnipro State Agrarian and Economic University, Department of Economics, Dnipro 49000, Ukraine
*Corresponding author: hanna100@ukr.net

Abstract

The article proves that competition stimulates the development of the country's economy, as it forces companies to use existing resources effectively to provide consumers with goods and services and maximize their profits with minimal cost for their production. It is proposed to determine competitiveness as the ability of enterprises in the competitive struggle to use their own competitive advantages in order to adequately provide consumers with goods and services while increasing their profitability. Considering that agrarian production is a priority sector of the country and determines its export potential, the article substantiates the theoretical and methodical aspects of the definition and systematization of factors of their competitiveness. The paper proves the necessity of effective investment, financial, credit and tax policy of the state, which will ensure the formation of price parity in the agrarian sector and will increase the solvent demand of the population.

Key Words: competition, profit, competitiveness, cost, economic efficiency.

Formation of the Logistic System of the Enterprise

Mykhailo HORODKO[1*], Igor VINICHENKO[1]

[1]Dnipro State Agrarian and Economic University, Department of Economics, Dnipro 49000, Ukraine
*Corresponding author: Horodko@ukr.net

Abstract

The article analyzes the understanding of the category "system" and proposes its author's concept. Studying the properties of the system allows to determine the existence of four properties that the object should possess in order to be considered a system: integrity, existence of links, organization, and integration properties. If some object possesses this complex of properties, so it may be affirmed that this object is a system. Using the methodology of system approach it was determined that some organization is an open system and transforms "incoming" links from external environment (labor, raw materials etc.) into "outgoing" links, in other words – products, services. In such system, there is a complex of actions from transformation resources that come from megasystem (external environment) and supply "products" to the same megasystem. Definition "logistical system" is the most important of all definitions of logistic, so it should be studied from two points of view: theoretical and economic. Analysis of definitions of logistic system provides the basis for its own interpretation as an organizationally completed economic system with feedback, consisting of interconnected elements that have internal and external links that are able to change their structure and determine behavioral patterns in accordance with new purposes under the influence of the environment.

Key Words: expenses, revenues, integration, logistics, logistic system, material flows, management, enterprises, system, system approach, consumer.

Development of Cooperatives in Agriculture in Ukraine

Roman BEZUS[1*], Natalia DUBROVA[1], Lesia KRIUCHKO[1]

[1]Dnipro State Agrarian and Economic University
*Corresponding author: bezusrm@gmail.com

Abstract

The article considers the peculiarities of the formation of cooperation in Ukraine, positive and negative aspects. The emphasis is on cooperation in the agrarian sector, since the tendencies of the latter's development in Ukraine require the development of a cooperative movement. It is noted that the active development of the cooperative movement is influenced by subliminal patterns that are implemented in the minds of most Ukrainians. Therefore, the formation and active development of agricultural co-operation should be ensured by generations born in the mid-1990s. In Ukraine, the activity of territorial communities should be intensified in order to create agricultural cooperatives - both production and service. It is also expedient to expand international industrial cooperation in the agroindustrial complex in the form of cooperation on a compensation basis, which will be manifested in direct industrial and cooperative ties, which should be understood as the direct long-term cooperation of Ukrainian enterprises with partners from other countries.

Key Words: Agriculture of Ukraine, Co-operation, Cooperatives, Development of agriculture, Ukrainian consciousness

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Current State of Agricultural Co-Operation in Ukraine

Roman HOLOVKO[1*]

[1]Dnipro State Agrarian and Economic University, Sergii Yefremov Street, 25, Dnipro, 49600, Ukraine
*Corresponding author: Roman.5plus@gmail.com

Abstract

The article analyzes the current state of agricultural co-operation in Ukraine, defines the prospects for the development of agricultural servicing cooperation in Ukraine in order to improve the relations between agricultural producers and improve the well-being of peasants.
The research summarizes the current state of development of entrepreneurial activity in agriculture and the preconditions for the establishment of domestic servicing cooperatives. In particular, according to the results of the analysis, the number of agricultural servicing cooperatives in the regions of the state has been established. In the process, it was established that in practice only 57% of agricultural service cooperatives are operating from 100% registered in Ukraine as of January 1, 2016.
Cooperation in the agrarian sector of Ukraine has always been one of the important organizational directions of increasing labor productivity, payback of fixed and working capital, employment, cheapening of production, social development of rural areas. The development of agricultural cooperation contributes to the expansion of free enterprise, the stable production efficiency, the protection of commodity producers in the market from the pressure of monopoly intermediary structures, which should be ensured by uniting efforts through the creation of agricultural servicing cooperatives.
Agricultural cooperatives - a new organizational and legal structure in the village, which arose as a natural reaction of rural commodity producers to the realities of the market environment. As a result, it should become an important foundation for structural adjustment of agriculture.
Consequently, the creation of cooperatives for agricultural producers makes it possible to specialize production, increase its concentration, reduce material costs and, as a result, ensure production growth.

Key Words: cooperation, agricultural co-operation, agriculture, production and service cooperatives, market, sales, employment, entrepreneurship, service cooperatives.

Influence of Fertigation on Plant Productivity and Grainquality of Corn in the Conditions of Ukrainian Steppe

Dmytro ONOPRIIENKO[1*]

[1]Dnipro State Agrarian and Economic University
*Corresponding author: gidrofak@meta.ua

Abstract

The given experimental data testify that on chernozem soils of the northern Steppe of Ukraine, in the production of corn grain, nitrogen fertilizers can be effectively introduced with irrigation water (fertigation). When cultivating corn under intensive technology on irrigated lands in the northern Ukrainian Steppe, it is advisable to add nitrogen fertilizers to irrigated water in the following proportions: 40% of the overall dose during the period of 10-12 leaves, 40% - in the phase of pinnacle ejection and 20% in the phase of milky ripeness of grain. For such use of nitrogen fertilizers, the average yield of corn grain increased by 2.72 - 4.36 t/ha, than without the use of fertilizers.The advantages of fertigation in comparison with the traditional technology of introduction of mineral fertilizers of brushwood are shown.

Key Words: Corn; Fertilizers; Irrigation; Fertigation; Soil

Development of the High Accuracy of the Copy of Soil System

O. D. DERKACH[1*], D. O. MAKARENKO[1], O. M. SHAPOVAL[2]

[1]Dnipropetrovsk state agrarian and economic university, Dnepr, Ukraine
[2]Society with limited liability «Soyuz-Composite», Dnepr, Ukraine
*Corresponding author: derkach_dsau@i.ua

Abstract

The high accuracy of the copy of soil system was developed and implemented to the sowing machines, and it was allowed to increase in 10 % rate of works and decrease maintenance costs in 25 %.

Key Words: sowing machines, elements, parallelogram, the copying mechanism

Justification of Public-Private Partnership Mechanisms in the State Regulation

Valerii MARENICHENKO[1*]

[1]Dnipro State Agrarian and Economic University, Sergii Yefremov Street, 25, Dnipro, 49600, Ukraine
*Corresponding author: marenichenkov@gmail.com

Abstract

Article provides the reader the issue of public-private partnership, which became one of the key priorities of governments strategic programs and projects, focused on the development of the country and public-private support, a catalyst for the successful cooperation of the business sector, government and society. The purpose of the study is to substantiate the mechanisms of public-private partnership in state regulation. The objectives of the study are to analyze the concept of public-private partnership and the main normative legal acts regulating this area of state regulation, study of modern mechanisms of public-private partnership in Ukraine. It is determined that effective mechanisms of public-private partnership in Ukraine should facilitate opportunities for obtaining the following benefits: accelerating the development of regions; increase of economic efficiency; improvement of service delivery; increasing the effectiveness of financial support and the availability of new sources of funding. As a result of the research, it has been determined that the existing mechanisms of public-private partnership in Ukraine should be complemented by mechanisms of social protection of the population (through management functions) based on the functions performed by civil society institutions, in particular public and trade union organizations. Emphasizing the importance of public-private partnership, the following directions of the mechanism of its implementation are defined: creation of information and analytical base for the adoption of managerial decisions by heads of state authorities; informing the business about unused industrial areas, free non-residential premises, unfinished construction and facilitating their involvement in the business environment; placement of data in the mass media for holding local and state conferences, exhibitions and fairs.

Key Words: Business, state regulation, public-private partnership

Assessment of Enterprise Investment Attractiveness

Ivan SYDOROV[1*], Igor VINICHENKO[2]

[1]Dnipro State Agrarian and Economic University, Department of Economics, Dnipro 49000, Ukraine
*Corresponding author: Sidorov@ukr.net

Abstract

Based on the research findings, it was found that today in Ukraine the issue of choice for investments of agrarian enterprises, having the best future development and ensuring the high effectiveness of contributed capital, in other words investment-attractive, is challenging. To find the solution for this matter, the objective model of assessment of investment attractiveness of separate enterprises – potential objects for investments should be developed. The assessment technique of investment attractiveness of agrarian business that could be used to choice the priority area of investment projects realization is proposed in this Article. Analysis of investment attractiveness of agrarian enterprises is proposed to be executed as follows: specify external and internal enterprise activity area that could make an impact to investment regaining; specify financial standing of enterprise and analysis of financial results of its operations; risk assessment of non-refoulement of investment funds; researching innovation activity level.

Key Words: Agrarian enterprises, investments, investment risk, investment attractiveness, information, comparative effectiveness, profit

Formation of Sustainable Development of the Enterprise

Serhey KRUCHOK[1*], Igor VINICHENKO[1]

[1]Dnipro State Agrarian and Economic University, Department of Economics, Dnipro 49000, Ukraine
*Corresponding author: Kruchok@ukr.net

Abstract

The article studied the scientific opinion regarding theoretical and methodological aspects of the formation of sustainable development of the enterprise. It is found that economic growth is usually systematic and constitutes a long-term process of increase of effectiveness and efficiency of agrarian enterprises and expressed by extended reproduction of technical and economic, and social and ecological results of production. It is proved that type of development of the enterprise depends on ratio of relative share of extensive and intensive factors: if relative share of intensive factors is low and economic growth of agrarian enterprises carries out generally by means of extensive factors, so the "growth without development" happens. If progressive qualitative changes prevail in the production system, so the "development without growth" happens. If high rate of economic growth of agrarian enterprises with a predominance of intensive factors, so the "growth on the basis of development" happens. It is proved that "economic growth in combination with development", in which economic growth occurs both at the expense of extensive and intensive factors are the most common. Taking into account the backwardness of agrarian enterprises in technical and technological fields for Ukraine, as well as for majority countries, economic growth based on development or in combination with development that provides the highest rates of economic growth, increasing the competitiveness of agricultural production and the rapid growth of material welfare of the population is the most desirable.

Key Words: reproduction, growth, enterprise process, system approach, sustainable development, factors of production

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Arthrospira (Spirulina) platensis Production with Şanlıurfa (Karaali) Geothermal Water

Betül GÜROY[1*]

[1]Yalova University
*Corresponding author: betulguroy@yahoo.com.tr

Abstract

The examination of the existing agricultural production potential in the GAP region in terms of the suitability of alternative prescription agricultural crops is important in terms of the diversity and productivity of our agricultural policies. In addition to being sustainable and economical to meet protein needs, a current perspective is needed that provides protein productivity and high-value biological activity with a single product. In this sense, Spirulina is among the best nutrients in the world and is defined as a healthy human food, especially for children and the elderly.

In this study, it is aimed to provide the adaptation of Şanlıurfa (Karaali) geothermal water to *Arthrospira* (*Spirulina*) *platensis* breeding in order to provide economical Spirulina production. Şanlıurfa Karaali Geothermal Water has been substituted in place of commercially used Schlösser Spirulina Nutrient Medium in order to be able to produce Spirulina production with a natural and natural food environment. The development of Spirulina platensis cultures, carried out in triplicate with ~ 30 ° C temperature and ~ 1000 lux illumination, was followed for 21 days.

According to the results obtained, it was determined that the nutrient medium containing %50 Şanlıurfa Karaali geothermal water in could produce 3.25% fiskocyanin (A620 / A280) and 38.3% protein Spirulina platensis. It has been determined that Spirulina with a protein content of 48.9% can be produced with 100% Şanlıurfa (Karaali) geothermal water containing nutrient medium. Schlösser medium has been found to produce Spirulina with a content of 55% protein and a purity of 4.43 phycocyanin. Spirulina flour obtained with %50 Şanlıurfa (Karaali) geothermal water contained 8% phycocyanin, while Schlosser medium provided 16.9% phycocyanin content.

Presented at the 1st International GAP Agriculture and Animal Husbandry Congress, this declaration aims to provide a current perspective to provide an innovative contribution to the effective and sustainable use of land in the GAP region, which is unfavorable for soil agriculture and Sanliurfa (Karaali) geothermal water.

I would like to express our gratitude to Yalova province Armutlu District Governorate, Şanlıurfa Province Haliliye Municipality and Yalova Province Armutlu Municipality for their contribution to the transportation of Şanlıurfa geothermal water to Yalova University Algae Production Unit.

Key Words: *Arthrospira* (*Spirulina*) *platensis*, Şalıurfa (Karaali) geothermal water, protein, fikosiyanin

The Importance of Geothermal Water in Spirulina Cultivation for Feed and Food Protein

Betül GÜROY[1]*, Derya GÜROY[1]

[1]Yalova University Armutlu Vocational Collegue
*Corresponding author: betulguroy@yahoo.com.tr

Abstract

Human health is developing and sustainable in direct proportion to the right choices made in nutritional behavior. The most important issue that sustainable success in agriculture and livestock sector depends on is the quality of the target product and the feed. Adequate quantities of protein-free feed can lead to excessive consumption of food, loss of raw materials in vain, and inability to obtain products at the targeted quality and time. The quality of farm products (meat, milk and dairy products, eggs, fish, etc.) and affordable production are synergistic with well-chosen farm applications. Spirulina contains protein that contains 50-70% (w/w) of essential amino acids balanced. Balanced intake of essential amino acids is a nutritional strategy that must be considered for the vital activities of the living organism. Spirulina is a rich source of vitamins and minerals essential for digestive activity, as well as a rich microalgal for the bioactive component called phycocyanin, which promotes the fight against cancer cells and affects cell health positively.
Development of scientific basis for practical use in the food and feed industry Spirulina is believed to provide a significant contribution to the sustainable success of the agricultural economy in Turkey. Therefore, Spirulina cultivation in Turkey should be expanded for feed and food industries. Investigation of the use of geothermal water for the production of Spirulina should be carried out by determining the local food environments for economic Spirulina production.

Key Words: Spirulina, feed, food, protein, geothermal water

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Formulation of a System to Support the Spatial Decision of the Small Hisar Agricultural Area of the Shawan Township / Kirkuk Governate / Northeast of Iraq by GIS

Raad J. FATHİ[1*], Abbas R. ALİ[1]

[1]Applied Geography Dept., College of Literature, Kirkuk University
*Corresponding author: akervanci@gmail.com

Abstract

The study included the formulation of systems to support the spatial decision of the small Hisar area which belong to Shawan township / Kirkuk governate/ Northeast of Iraq, by using GIS, MapInfo, we made a link between metadata and spatial data through the number of layers detailing the metadata without reference to the searching area, The system also provides the possibility to develop the database in the future, whether in metadata or in situ data, and this system is developed and easy to use, can be used according to the field of specialization. It is possible to inquire from several things at the same time according to the request you request.

Key Words: Formulation system; Agriculture; GIS; Kirkuk

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Attitudes and Behaviors of Farmers Against Pesticides in Carsamba District of Samsun Province

Aybike BAYRAKTAR[1*], İsmet BOZ[1]

[1]Ondokuz Mayıs Univ., Agriculture Fact., Samsun-TURKEY
*Corresponding author: aybike.byrktrr@gmail.com

Abstract

The use of pesticides in agriculture has an effect on yield and quality. However, in recent years, the importance of this work has been pointed out that farmers cannot effectively apply the methods of combating diseases and pests. The use of pesticides in unnecessary and incorrect doses is widespread. Pesticides remain in products as a result of overdose application and agricultural fighting methods other than chemical fighting are not preferred by farmers. In this study, it was aimed to investigate the attitudes and behavior of farmers against pesticides and pest control in Carsamba district of Samsun province. For this purpose, a stratified sample of 112 farmers were selected from Carsamba district. Data were collected by administering a questionnaire with these farmers. Data analysis methods were selected by considering the study objectives and mostly descriptive statistics used. Finding of this study showed that farmers don't prefer pest control method other than chemicals, they decide pest control mostly by their experiences, and they consider the prices and expire date of pesticides as the most important factors when purchasing pesticides. The results of this study are expected to provide useful information for policy makers, agricultural NGOs, pesticide dealers, farmers, scientists, extension practitioners, and researchers.

Key Words: Pests control, Pesticides, Agricultural extension, Adoption of innovations, Carsamba

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Geographical Distribution of Goats Breeds in Turkey's Antalya Province

Şerife Gülden YILMAZ[1*], Süleyman KARAMAN[2]

[1]Bati Akdeniz Agricultural Research Institute, Department of Agricultural Economics, Antalya Turkey
[2]Akdeniz University, Agriculture Faculty, Department of Agricultural Economics, Antalya Turkey
*Corresponding author: sgylmz@gmail.com

Abstract

Goats breeding is very important in terms of meeting both the demand of red meat consumption for people and the employment of small farming enterprises in rural areas in Turkey. The province of Antalya which has meadow, widespread maquis and forested areas provides suitable agricultural land especially for goat breeding. Therefore, it is necessary to protect and develop the goat breeds and to improve the situation of the sector in the region, which is ensured that more efficient and high quality breeds that is unique to the region are identified and dissemination of breeding. When the provinces of Antalya are examined on the basis of counties; Manavgat has the highest goat presence in goat distribution with 19.12% share. This is followed by Elmalı (14.54%), Korkuteli (14.26%), Kaş (7.74%) and Gazipaşa (5.28%). Manavgat (19.78%), Korkuteli (15.77%), Elmalı (12.14%) and Kaş (7.13%) districts were found to be in the forefront in terms of intensive goat enterprises. In this study, the secondary data were obtained from the records of the Turkish Statistical Institute and Antalya Sheep & Goat Breeders' Association. The spatial analysis of the goat breed distribution in the region was carried out and the agglomeration of the breeds (clustering) was determined by spatial index, box diagram and by mapping technique. It is observed that the region is dominated by the most hair goat breeding and hair goat hybrid breeding. These are followed by Honamli goat breeding. In the scope of the study, the current situation of pasture areas and forest areas which are the largest feeding areas for goats, affects goat enterprises in the region. In addition, the spatial distribution of forest areas and goat enterprises has been studied in the research area.

Key Words: Antalya, goat, breed, spatial distribution, map

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Research on Risk Assessments of Dried Apricot Farmers: The Hekimhan District Case

Orhan GÜNDÜZ[1*], Ahmet ASLAN[2], Vedat CEYHAN[3], Zeki BAYRAMOĞLU[4]

[1]İnönü University Battalgazi Vocational Scholl, Malatya
[2]Apricot Research Institute, Malatya
[3]Ondokuz Mayıs University, Faculty of Agriculture, Department of Agricultural Economics, Samsun
[4]Selçuk University, Faculty of Agriculture, Department of Agricultural Economics, Konya
*Corresponding author: orhangunduz@inonu.edu.tr

Abstract

Dried apricot production is carried out under the conditions of risk and uncertainty. The farmers produce under the many risks such as economic, technical and social risk and they are aimed to reach maximum utility. Identifying and assessing the risks that farmer's face and the strategies they use to cope with them will facilitate decision-making. In this study, data collected from randomly selected 45 farmers via questionnaires using Likert scale in Hekimhan county of Malatya province where dry apricot production was intensified were used. Data were analyzed to determine the effects of farmers risk assessments and the risk management strategies they could use to cope with these risks. The reliability level of data was satisfactory and data were analyzed using frequency tables and graphs. According to the results of the research, the most important risk sources were spring late frost, hail and inadequacy agricultural support. On the other hand, the most important strategies coping with risk were agricultural facility diversity, to provide sales and input support and farmer's cooperation.

Key Words: Risk factors, strategies, apricot, likert scale, Malatya

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Using Capitalization Method to Assess Monetary Value of Agricultural Land Under Rental Considerations and Its Component

Olena B. ZHARİKOVA[1*], Oksana V. PASHCHENKO[1]

[1]National University of Life and Environmental Sciences of Ukraine, Kiev-UKRAINE
*Corresponding author: ele0309@ukr.net

Abstract

The article deals with the expert valuation of agricultural land plots with the rent capitalization method (by its components), as well as with the impact of land rent and its all components on expert money valuation of land plots on the basis of "Ukrainian lan-2" nature metric model.
The analysis of the study proved that this model allows high-precision expert monetary valuation of agricultural land in compliance with the International Valuation Standards and National regulations.

Key Words: Expert monetary evaluation, Land plot, Land rent, Agricultural method, Rent capitalization

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Views of Farmers on Agricultural Production and Marketing Process: Harran Plain Sampling

Mustafa Hakkı AYDOĞDU[1*], Bahri KARLI[2], Mehmet Emre EREN[3], Ahmet Erhan EREN[3]

[1]Harran University, Faculty of Agriculture, Department of Agricultural Economics, Şanlıurfa-TURKEY
[2]Süleyman Demirel University, Faculty of Agriculture, Dept. of Agricultural Economics, Isparta-TURKEY
[3]Harran University, Technical Sciences Vocational School, Şanlıurfa-TURKEY
*Corresponding author: mhaydogdu@hotmail.com

Abstract

Regardless of the level of development, agricultural production has a strategic importance in all countries, and not only for food safety but also for employment and industries based on agriculture. Farmers are faced with a number of problems both in the input supply in the production process and in the marketing of the products that are produced. In this study, it was aimed to determine the farmers' views on agricultural production and marketing processes in the Harran Plain. In this context, 171 questionnaires were conducted with farmers by simple random sampling method in 2016. According to the obtained data; The average age of the farmers participating in the survey is 46.1 years, of which 45% is primary school graduate. Average land size is 12.46 hectares. The 62.5% of them are property owners, 16.4% are tenants and shareholders. The 81.3% of those who supply inputs from producers and commissioners, and 13.5% of those who provide agricultural cooperatives. The rate of farmer who have not problems in input supply is 82.5%. All the farmers who participated in the survey benefit from agricultural support, and 26.3% of the respondents find it sufficient. The rate of those who use agricultural loans is 21%. It has been stated that 23.5% of the problems encountered at harvesting time is mechanized, 38.5% of based on land and 38% are related to climate risk and uncertainties. When selling their products, 83% of them easily find buyers, 65.5% of the sales are done after harvest, 63.7% of those cannot immediately get the money after selling and 47.9% of those sell the same person each year. The age, education, type of property, amount of land and product variety are effective factors in farmers' perspective.

Key Words: Farmers view; Agricultural Production; Marketing Process; Harran Plain; Şanlıurfa

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Economic Analysis for Fruit and Vegetable Growth of Underground Water: Harran Sampling

Hatice PARLAKÇI DOĞAN[1*], Bahri KARLI[2], Fikret KAYA[1], Ahmet Erhan EREN[3], Mehmet Emre EREN[3], Mustafa Hakkı AYDOĞDU[1]

[1]University of Harran Faculty of Agricultural Agricultural Economy Department, Şanlıurfa-TURKEY
[2]University of Suleyman Demirel Faculty of Agricultural Agricultural Economy Dept., Şanlıurfa-TURKEY
[3]Harran University, Technical Sciences Vocational School, Şanlıurfa-TURKEY
*Corresponding author: hparlakcidogan@yahoo.com

Abstract

Although 78.3% of the agricultural areas of Şanlıurfa-Harran District remain within Harran Plain irrigation areas, agricultural production is provided by underground waters in areas where water is insufficient. This situation is caused sinkholes by the excessive use of underground waters which are already limited to the region. In this study, fifteen villages of Harran District where underground water resources used for agricultural activities that were analyzed economically in terms of water use in fruit and vegetable growing in 2016, considering production pattern. By using Irrigated Crop Evapotranspiration Guide in Turkey based on water consumption of pistachios, pomegranates, olives, peppers and garlic plants were identified. In a production season, pistachio 10,293 m^3/ha, pomegranate 8,387 m^3/ha, olive 6,400 m^3/ha, pepper 8,314 m^3/ha and garlic 6,992 m^3/ha of water are needed. The accepted water transport efficiency was 98% and water application efficiency was 86% in the research field. Water needs based on these assumptions would be for pistachio 12,213 m3/ha, pomegranate 9,951 m^3/ha, olive 7,594 m^3/ha, pepper 9,865 m^3/ha and garlic 8,297 m^3/ha. The yields for these products are pistachio 2142 kg/ha, pomegranate 43316 kg/ha, olive 1800 kg/ha, pepper 20000 kg/ha and garlic 25000 kg/ha. In the case of water insufficiency, the increase in the yield values of irrigation products will decrease with the yield values calculated in dry conditions, depending on the value of 117% for fruit and 134% for vegetable for irrigation conditions. In this study, the evaluation was given in terms of relative income and GPV for comparison of irrigated and dry conditions.

Key Words: Irrigation Value, Fruit and Vegetable, Dry Farming, Underground Water, Harran Plain

Complex Ecological Evaluation of the Ponds and Their Aquacultural Potential within Dnipropetrovsk Region

Olena ONYSHCHENKO[1*], Anatoly DVORETSKY[1], Mykola KHARYTONOV[1], Leonid BAYDAK[1]

[1]Dnipro State Agrarian and Economic University, S. Yefremov Str., 25, Dnipro, UKRAINE
*Corresponding author: onish@3g.ua

Abstract

The environmental assessment of water quality and potential of use of different water sources for aquaculture purposes within the Dnipropetrovsk region based on the complex ecological index is presented.
For evaluation of the impact of the agroindustrial comlex of Dnipropetrovsk region on water quality and aquaculture, potential of inland ponds, integral ecological quality index along with primary productivity was specifically calculated for six different water objects and river sites based on broad hydrobiological studies of these locations conducted during 2015 – 2017 years. Water quality was evaluated by variables like temperature, transparency, turbidity, carbon dioxide, pH, alkalinity, hardness, unionized ammonia, nitrite, nitrate, plankton population.
Sites chosen for the present study all were located within Dnipropetrovsk region – two fish farm ponds receiving water from the river Dnipro, river Dnipro sites – upstream and downstream from the city and two fish farms with ponds receiving ground water. Analyzed data were found to be representative in terms of evaluation of the best potential water sources for pond fish farming in the region.
Performed hydrobiological study had demonstrated that major contaminants are suspended solids, sulfates, phosphates and nitrates, also all studied water bodies had high mineralization which exceeded significantly the limits established by SOU: 05.01-37-385:2006 (Ukrainian fish farming standard).
Primary productivity potential and overall water quality was found to be higher for ponds receiving water from Dnipro river, consequently, it should be recommended to use “river fed” ponds for aquaculture in Dnipropetrovsk region.

Key Words: fish pond, water quality, complex ecological index, primary production, carp aquaculture

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Economic Analysis of Underground Water for Field Plants: Harran Sampling

Hatice PARLAKÇI DOĞAN[1*], Mustafa Hakkı AYDOĞDU[1]

[1]University of Harran Faculty of Agricultural Agricultural Economy Department, Şanlıurfa-TURKEY
*Corresponding author: hparlakcidogan@yahoo.com

Abstract

Although 78.3% of the agricultural areas of Şanlıurfa-Harran District remain within Harran Plain irrigation areas, agricultural production is provided by underground waters in areas where water is insufficient. This situation is caused sinkholes by the excessive use of underground waters which are already limited to the region. In this study, fifteen villages of Harran District where underground water resources used for agricultural activities that were analyzed economically in terms of water use in field crops growing in 2016, considering production pattern. By using Irrigated Crop Evapotranspiration Guide in Turkey based on water consumption of cotton, 2nd crop corn (grain), cereals were identified. In a production season water need of the cotton plant needs 7,223 m^3/ha, corn 4,701 m^3/ha, cereals plant 3,261 m^3/ha. The accepted water transport efficiency was 98% and water application efficiency was 86% in the research field. Water needs based on these assumptions would be for cotton 8,576 m^3/ha, corn 5,578 m^3/ha, cereals 3,869 m^3/ha. The yields for these products are 5500 kg/ha in cotton, 10000 kg/ha in corn, 5500 kg/ha in cereals. In the case of water insufficiency, the increase in the yield values of irrigation products will decrease with the yield values calculated in dry conditions, depending on the value of 292% for cotton, 564% for corn and 166% for cereals for irrigation conditions. In this study, the evaluation was given in terms of relative income and GPV for comparison of irrigation values.

Key Words: Irrigation Value, Field Crops, Dry Farming, Underground Water, Harran Plain

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Consumer's Views of the Cukurova University Balcalı Brand

Baran YAŞAR[1*], Dilek BOSTAN BUDAK[2], Ufuk GÜLTEKİN[2], Fırat AYAS[3]

[1]Univ. of Cukurova, Faculty of Agriculture, Agricultural Research, Education and Imp. Farm., Adana-TURKEY
[2]University of Cukurova, Faculty of Agriculture, Department of Agricultural Economics, Adana-TURKEY
[3]Yüreğir District Food, Agriculture and Livestock Directorate, Adana-TURKEY
*Corresponding author: byasar@cu.edu.tr

Abstract

Cukurova University Agricultuzral Faculty Research and Application Farm which was established for; first of all, to provide space and application area for education and training studies; to contribute to scientific work; and to support the education and training studies by using obtained productional-trial surplus; is operating as a unit in Adana Province.
In this study; after the negotiations with consumers who shop at Research and Application Farm sales points; critics and suggestions for "Cukurova University, Balcalı" brand were determined and evaluated. By taking into account the consumer's style of view about the brand's reliability, reputation, product quality and other issues; proposals have been made for eliminating deficiencies related to products and brands. Recommendations for better usage of production surplus and trial products obtained from the Research and Application Farm were made.

Key Words: Cukurova University Balcalı Brand, consumer, product.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

State-Funded Agricultural and Animal Insurance System in Turkey

Aysel YEŞİLYURT ER[1*]

[1]Pamukkale University
*Corresponding author: ayer@pau.edu.tr

Abstract

Plant and animal productions constituting main means of living for people in our country is an economic activity that faces with many risks occurring due to environmental effects and inaccurate activities of producers Whereas some of these risks can be eliminated, it is not possible to eliminate a significant portion The state provides several supports and measures when producers remain incapable against the large-scaled damages such as natural disasters, epidemics, and climatic events A significant portion of contributions in "Agricultural Insurance System" is borne by government The operator company of established system, TARSIM is managed according to the decisions and directives of a board consisting of 4 members from government, 2 from non-governmental organizations, and 1 from the operator company in order to ensure the continuity of agricultural production by taking various risks into the scope of insurance

Established after accepting the Law on Agricultural Insurances in 2005, TARSIM issued its first policy in year 2006 and took many animal and plant production risks into the scope of insurance It can be stated that a significant portion of producers have insufficient knowledge or are misinformed about the state-funded agricultural insurance In this study carried out in order to explain actual conditions on this subject, it is aimed to convey the knowledge and to expand the awareness on this subject The main responsibility of university, institute, government or private sector professionals is to determine the problems in this field, to offer solution suggestions, and to share the obtained knowledge

Key Words: Agricultural insurance, governmental support, TARSIM

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Students' Perceptions Regarding Agricultural Education in Secondary Schools

Cevahir KAYNAKÇI[1*], İsmet BOZ[1]

[1]Ondokuz Mayis University Faculty of Agriculture Department of Agricultural Economics, Samsun-TURKEY
*Corresponding author: cevahirkaynakci@gmail.com

Abstract

Agricultural high schools undertook extremely important tasks in terms of raising qualified human resources for the agricultural industry. These schools have faced major changes in terms of their numbers, names, and curriculums which have significantly altered their original mission in recent years. The main objective of this study is to evaluate their work regarding the perceptions of the students currently attending to these schools. The specific objectives are to determine the reasons why students chose these high schools; their satisfaction with the departments, awareness of agricultural industry, and professional expectations. Data were collected from 72 students, in the spring semester of 2017-2018, from Bafra Dedeli Vocational and Technical Anatolian School in Samsun province. According to the study findings, 90% of students were male. Majority of the students selected their department by their own wishes, the second important portion selected this department with the request of their parents. The main reason for selecting agricultural major was their agricultural background. Agricultural activities are also the culture and experience passed between generations. Therefore, graduating from these schools is promising challenge for sustainable agriculture. Students were satisfied with their high school. Most of them plan to continue their career in agricultural sector. It should be explained practically that agriculture is wide area for students who are reluctant to choose this major and they should be assisted in choosing a suitable sub major which is suitable with their personal characteristics and future expectations.

Key Words: Vocational and Technical Anatolian High School, Agricultural High School, Agricultural Education

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Development of Marketing Research of the Regional Market of Agricultural Products

Larysa KURBATSKA[1], Iryna VOLOVYK[1*]

[1]Dnipro State Agrarian and Economic University, S. Yefremov Str., 25, Dnipro-UKRAINE
*Corresponding author: interdsau@gmail.com

Abstract

The article has deal with the trends and factors of regional markets development in Ukraine. Moreover, one of the most dynamic regional markets sectors is the market of local products. The marketing research of the local market of agricultural products was conducted in order to determine the customer's attitude to the local products. Marketing research was conducted through consumer surveys, and was targeted at mass respondents of different qualifications and competencies. In this case, the tool for the implementation of the survey was a questionnaire, through which received the primary information necessary to identify the shortcomings in the organization of providing services for the sale of agricultural products. According to the results of the study of buyers' behavior and assessment of the activity of the local farms, it has been established that the most popular source of information about the place of purchase is advertising in the media, then - outdoor advertising, information from friends and acquaintances, and others. It was determined that the main factors influenced the choice are the best conditions of service, further on importance: convenient location (access roads), a wide assortment of products, quality of service, recommendations of friends and availability of discounts.

Key Words: Marketing Research; Local Products; Survey; Buyers' Behavior

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The State of Women Leadership in Agro Co-Operatives Development in Ukraine

Iryna VOLOVYK[1*], Sofia BURTAK[2]

[1]Dnipro State Agrarian and Economic University, S. Yefremov Str., 25, Dnipro, 49600, UKRAINE
[2]NGO "Dnipro Agricultural Advisory Service", P. Kalnyshevskii Str., 31, Dnipro, 49600, UKRAINE
*Corresponding author: interdsau@gmail.com

Abstract

The objective of the paper is to investigate the real status of women in Ukrainian agribusiness and their role in agricultural co-operation development. To investigate the topic, the different approach in leadership was used and applied for Ukrainian Agribusiness particularities, as well as statistic dates about women representation in co-operatives membership and co-operatives' governance; the individual–interaction-institution method was used to evaluate the possibilities for development women's leadership in Agribusiness of Ukraine. It was discovered, that representation of women's voices in farmers associations, co-operatives and unions of co-operative is very depend on the sector of agribusiness. There are more women-leaders in milk production, gardening and vegetables farming and less in grain production. It strongly correlates with level of mechanization in Agriculture.
Conclusion: modern co-operative movement in Ukraine is the significant support for the women entrepreneurship and leadership development due the education programs, network building and women ability to attract resources for this purpose.
The oral presentation was prepared in the framework of Ukrainian Storage and Marketing Cooperatives Project and Ukrainian Dairy Business Development Project, funded by the Government of Canada.

Key Words: Women's Leadership, Co-operatives, Entrepreneurship in Agriculture

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Annual Net Income of Crops Irrigated with Different Irrigation Methods

Yeşim AHİ[1*], Belgin ÇAKMAK[2], Hüseyin T. GÜLTAŞ[3]

[1]Ankara University, Water Management Institute, Ankara-TURKEY
[2]Ankara University, Agricultural Faculty, Agricultural Structures and Irrigation Dept., Ankara-TURKEY
[3]Bilecik Şeyh Edebali Univ., Agriculture and Natural Sci. F., Biosystems Engineering Dept., Bilecik-TURKEY
*Corresponding author: ysmahi@ankara.edu.tr

Abstract

In this research; annual benefit cost ratios were determined in sugar beet, sunflower, alfalfa and silage maize crops irrigated with different irrigation methods and also net income was calculated. In Kırklareli Ziya Organic Farming Enterprises area, trial plots were formed as sprinkler irrigation in 250 da sugar beet, move sprinkler irrigation in 250 da alfalfa, drip irrigation in 400 da sunflower and move sprinkler irrigation in 190 da silage maize. In the experiments, the water requirements of the crops were fully met and declining water was completed to the field capacity at certain irrigation intervals. Irrigation water was applied as 516, 280, 168 and 180 m^3 per decares per year in the sugar beet, alfalfa, sunflower and silage corn, respectively.
As a result of the research, the yields per decares were 10 t in sugar beet, 65 t in alfalfa, 0.3 t in sunflower and 6 t in corn. When irrigated areas evaluated in terms of net profit; Total income and net income amount was determined; as 402,500 TRY and 209,337 TRY for sprinkler irrigation application of sugar beet, as 113,193 TRY and 99,309 TRY for move sprinkler irrigation application of alfalfa, as 206,400 TRY and 115,365 TRY for drip irrigation application of sunflower, as 182,400 TRY and 130,379 TRY for move sprinkler irrigation application of silage maize. Eventually, if pressure irrigation practices are applied, it is seen that average yields are above the region averages and the initial investment cost is amortized within the first year. So, pressurized irrigation system is advised for the best practices and results.

Key Words: Irrigation economy, economic analyze, pressurized irrigation, agriculture

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Current Situation of the Company of Laying Hens in Hatay Province

Tülay ÇİMRİN[1*], Gülşen ÇOPUR AKPINAR[1], Nuran TAPKI[2], Oğuz PARLAKAY[2], Hakan YILDIRIM[1]

[1]Mustafa Kemal University, Agriculture Faculty Animal Science Department, Hatay-TURKEY
[2]Mustafa Kemal University, Agriculture Faculty Agricultural Economics Department, Hatay-TURKEY
[*]Corresponding author: tcimrin@hotmail.com

Abstract

The egg is one of the major food sources that meet the protein requirement of people. Because it can be found easily and cheaply, it is very important for the feeding of middle and low-income families. With this study, it is aimed to determine the current situation of the enterprises that make egg poultry in Hatay province. The main material of the study is the data which obtained from face-to-face questionnaires by the full counting method from the 23 poultry enterprises producing eggs in Hatay province. Previous materials also were used during this study. Previous works on the subject have been used as auxiliary materials within this study. Frequency tables and percentages have been used while data analyzed. In this context, the profiles of enterprises and companies have been examined. The present demographic properties and business structures of the producers have been revealed. From the data obtained, the average age of the producers is 44 years. It has been determined that more than 75% of producers have 1-3 years experience. The installed capacity average of the businesses is 4627. Also, it was determined that approximately half of the businesses (47.83%) are using the total production capacity. However, produced eggs, obtained from free circulating chickens in 15 (65.21%) of the 23 businesses. In addition, almost all businesses (86.96 %) are purchasing the chicken diets from the companies.

Key Words*:* Egg, Poultry Companies, Hatay

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Economic Investigation of the Sheep Breeding Enterprises in the Western Mediterranean Region

Şerife Gülden YILMAZ[1*], Mevlüt GÜL[2]

[1]Bati Akdeniz Agricultural Research Institute, Department of Agricultural Economics, Antalya/Turkey
[2]SuleymanDemirel University Agriculture Faculty, Department of Agricultural Economics, Isparta/Turkey
[*]Corresponding author: sgylmz@gmail.com

Abstract

Sheep breeding is very important in terms of ensuring the employment of the people in the rural areas of the Western Mediterranean Region. The producers meet the needs of their family with red meat, milk and dairy product which are produced by them and also provides the livelihood of the family by marketing these products. Therefore, this study is very important in terms of putting forth the economy of small family enterprises in the region. The material of the study has consisted of primary data which obtained from farmers and the industry stakeholders by surveying method with a secondary data related to the presence of small ruminants animals which obtained from Turkey Statistical Institute and Breeding Sheep and Goat Breeders Association. The sample size of the research population was defined as 102 for sheep farms with stratified sampling method. In this survey, the economic status of sheep breeders were determined and the results of the annual operation of sheep farmers were revealed in the Western Mediterranean Region. Analyses were made on the annual operating results of the sheep farms. Farmer's economic indicators such as farm costs, variable cost, fixed costs, gross production value, gross farm income, gross profit, net income, agricultural income, total family income were calculated.

Key Words: Sheep, Sheep Farming, Economic analysis, West Mediterranean Region.

Animal Science Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Animal Waste Biogas Potential and Most Suitable Facility Centers in Sivas Province

Hasan ELEROĞLU[1*], Hüdaverdi BİRCAN[2], Rahim ARSLAN[2]

[1]Cumhuriyet University, Şarkışla Aşık Veysel Vocational School, 58400 Şarkışla / Sivas, Turkey
[2]Cumhuriyet University, Faculty of Economics and Administrative Sciences, 58140 Sivas, Turkey
*Corresponding author: eleroglu@cumhuriyet.edu.tr

Abstract

In this study, the data obtained from the Sivas Directorate of Provincial Food Agriculture and Livestock were used. Livestock farms are ranked according to the capacity of the animal. In Sivas province, 1248 farms with a capacity of 40 cattle and above, latitude and longitude are determined. These coordinates were subjected to K-Means clustering analysis to determine the location of the most suitable biogas plant in terms of distance and total number of animals. In determining biogas production centers, a minimum of 4000 cattle in the 15 km focal length were taken into account. In Sivas province, 5 biogas plant sites with a total investment amount of 69.49 million dollars and a revenue amount of 40.67 million dollars / year, which can produce 19 MW / hour electricity in total, have been determined. The data obtained in this study were analyzed using the K-Means clustering method, tried to determine the most optimal plant location and point density diagram on the map to provide the most efficient information to investors and related institutions.

Key Words: Animal waste; Biogas; K-Means; Electricity

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Animal Waste Compost Potential and Most Suitable Facility Centers in Sivas Province

Hasan ELEROĞLU[1*], Hüdaverdi BİRCAN[2], Rahim ARSLAN[2]

[1]Cumhuriyet University, Şarkışla Aşık Veysel Vocational School, 58400 Şarkışla / Sivas, Turkey
[2]Cumhuriyet University, Faculty of Economics and Administrative Sciences, 58140 Sivas, Turkey
*Corresponding author: eleroglu@cumhuriyet.edu.tr

Abstract

In this study, the data obtained from the Sivas Directorate of Provincial Food Agriculture and Livestock were used. Livestock farms are ranked according to the capacity of the animal. In Sivas province, 1248 farms with a capacity of 40 cattle and above, latitude and longitude are determined. These coordinates were subjected to K-Means clustering analysis to determine the location of the most suitable compost plant in terms of distance and total number of animals. In determining compost production centers, a between 1000 to 4000 cattle in the 15 km focal length were taken into account. In Sivas province, 5 compost plant sites with a total investment amount of 2,01 million dollars and a revenue amount of 1,1 million dollars/year, which can produce 10.807 ton/year in total, have been determined. The data obtained in this study were analyzed using the K-Means clustering method, tried to determine the most optimal plant location and point density diagram on the map to provide the most efficient information to investors and related institutions.

Key Words: Animal waste; Compost; K-Means; Organic waste

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Supplementation Essential Oil and Organic Acid Mixture on Performance, Egg Production and Egg Quality Parameters in Laying Hens

Bülent ÖZSOY[1*], Özlem KARADAĞOĞLU[2], Mükremin ÖLMEZ[3], Tarkan ŞAHİN[3]

[1]Mustafa Kemal Univ., Vet. Medicine Faculty, Dept. of Animal Nutrition and Nutr. Disease, Hatay-TURKEY
[2]Kafkas Univ., Kars Voc. High School, Department of Agriculture and Animal Production, Kars-TURKEY
[3]Kafkas Univ., Vet. Medicine Faculty, Department of Animal Nutrition and Nutritional Disease, Kars-TURKEY
*Corresponding author: bulent58@gmail.com

Abstract

The objective of the current study was to evaluate the effects of different levels (1gr/kg, 3g/kg ve 4.5g/kg) of essential oils and organic acid mixed in the diets of laying hens on performance egg production and egg quality parameters. A total of 120 White Nick Chick of layers (sixteen-week-old) was used in this study. They were divided into one control group and three experimental groups and each of them contained 30 hens. Each group was further divided into five subgroups with 6 hens. The experiment was lasted in twelve weeks. The basal diet was given to the control group and the other three groups were fed basal diet with supplemented wiyh increased concentrations of essential oils and organic acid mixed (1-3-4.5 g/kg), respectively. The hens were fed with 17 % crude protein and 2750 kcal/kg ME. As a result of the study, no differences were found body weight between the groups ($p>0.05$). There were statistically significant differences between the feed consumption and efficiency, egg weight and Haugh Unit ($p<0.05$). Conclusively, it was concluded that supplementing laying hens rations with up to 4.5 g/kg essential oils and organic acid mixed does not have negative effect on performance and egg quality and that can be safely used in laying hens ration.

Key Words: Laying hens, essential oils and organic acid mixed, performance, egg quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Blood Flour Production Potential and the Most Suitable Facility Center in Tr72 Region (Kayseri, Sivas and Yozgat)

Hasan ELEROĞLU[1*], Hüdaverdi BİRCAN[2], Rahim ARSLAN[2]

[1]Cumhuriyet University, Şarkışla Aşık Veysel Vocational School, 58400 Şarkışla / Sivas, Turkey
[2]Cumhuriyet University, Faculty of Economics and Administrative Sciences, 58140 Sivas, Turkey
*Corresponding author: eleroglu@cumhuriyet.edu.tr

Abstract

In this study, the slaughterhouse and capacities in the TR72 region (Kayseri, Sivas and Yozgat) were determined. Face-to-face surveys were conducted with business executives. According to the obtained data, it is important to evaluate the blood from the by-products obtained in the slaughterhouses in terms of environmental health. Annual blood flour capacities of Kayseri, Sivas and Yozgat provinces were calculated as 1841.21, 902.91 and 131,0 tons respectively, and total annual income for the three provinces was estimated as $ 1.73 million. When included in neighboring provinces, the total blood flour production capacity is 3.351 tons and the expected annual income is estimated at $ 2.01 million. Kayseri, Sivas and Yozgat, as well as the economic transportation distance of the surrounding provinces, Şarkışla / Sivas was determined as the most suitable plant location with the cluster analysis.

Key Words: Slaughterhouse; Animal Waste; Blood meal; Environmental health

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Views of Livestock Raising Association Presidents on Husbandry Activities in Kilis

Yadigar POLAT[1*]

[1]Kilis 7 Aralık Univ., Health Services Vocational School, Department of Medical Services and Techniques, Kilis
*Corresponding author: yadigarpolat@kilis.edu.tr

Abstract

In this study, husbandry activities in the city of Kilis were examined, and husbandry-related problems in Kilis and solutions for husbandry development were discussed.
In big and small cattle raising, the ratio of animal numbers in the city of Kilis to animal numbers in our country is 1.11% for goat, 0.53% for sheep and 0.07% for cattle. In poultry farming, this ratio is 0.12% for broiler hen, 0.08% for layer hen, 0.08% for turkey, 0.4% for goose and 0.09% for duck. Kilis's beekeeping contribution to our country's beekeeping is 0.08%. In the production of animal products, the ratio of wax production numbers in Kilis to wax production numbers in our country is 0.02%, 0.02% in honey production, 0.11% in egg production, 0.24% in milk production and 0.11% in red meat production.
It is seen that the number of animals in Kilis is well below the country level of our country, except goats and sheep. As stated by the association presidents, in order to increase animal husbandry activities in Kilis, feed crop cultivation should be increased, pasture areas should be expanded, cattle breeding should be encouraged, and the shortage of shepherds should be eliminated. It is also suggested that free range beekeeping should be encouraged and honey forests should be created. In poultry farming, organic chickens and range free poultry should be encouraged. To increase meat and milk production and to make profit from it, animal husbandry associations and Directorate of Food, Agriculture and Livestock should provide trainings for the farmers on animal breeding, preparation of appropriate feed ration and feeding. Facilities should be built for processing and packaging animal products, importance should be given to breeding animal production, and animal shelters should be made more practical by making them low cost.

Key Words: Kilis, Husbandry, Animal Husbandry Associations, Incentives, Husbandry Problems

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Different Thermal Conditions on Serum Albumin which Determined by SDS-PAGE in Laying Quails (*Coturnix coturnix japonica*)

Yasin BAYKALIR[1], Seda İFLAZOĞLU MUTLU[2]

[1]Fırat University, Faculty of Veterinary Medicine, Department of Animal Science, Elazig-TURKEY
[2]Fırat Univ., Faculty of Vet. Medicine, Dept. of Animal Nutrition and Nutritional Diseases, Elazig-TURKEY
*Corresponding author:

Abstract

Serum albumin is the most abundant protein in plasma. This protein has many important functions such as maintain osmotic pressure, bind to the important biological compounds and transport of them and antioxidant activity. Over 50% of the antioxidant activity of plasma is provided by the serum albumin. Sodium Dodecyl Sulphate-polyacrylamide gel electrophoresis (SDS-PAGE) is the common technique for determining protein according to their molecular weight with a high resolution. This technique is widely used in biological research and clinical diagnosis. This study was aimed to determine serum albumin of quails and how to alter in different thermal conditions. A total of 24 birds were assigned to two environmental independent room consisting of the plastic wire cages. One of this room was exposed to continuous 22ºC for 24 hours. Another room was exposed to 34ºC for 9 hours (8 am to 5 pm). The birds were reared 75 days. End of the trial, the birds were decapitated and serum was collected into the tubes. Total serum protein was determined with nanodrop spectrophotometer. The 30µg total protein was loaded to each well in the 10% separating gels for SDS-PAGE. Bovine serum albumin was used as a positive control and normalization. Molecular weight marker was also used for to determine albumin weights. Each band was analyzed with ImageJ image analysis software. The weights of serum albumin were determined as 66-67 kDa. There is no statistical difference between the groups (P=0.145). According to this result, the quails could be well adapted to high-temperature. This characteristic of the quails might ease to the rearing of them and might be more profitable in other poultry farming branch. In addition, this case must be taken into account when using the quails in experimental heat stress studies. SDS-PAGE can also be used in monitoring the health status of the quails.

Key Words: Japanese quails, SDS-PAGE, serum albumin, thermal conditions

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Serum Copper Zinc and Magnesium Levels in Yearling Awassi Grown in the Gaziantep Region

Bülent ÖZSOY[1*], Eyüp AKAR[2]

[1]Mustafa Kemal Univ., Vet. Medicine Faculty, Dept. of Animal Nutrition and Nutr. Disease, Hatay-TURKEY
[2]Ministry of Food, Agr. and Liv., Dept. of Food Agr. and Animal Hus., Animal Health Br., Gaziantep-TURKEY
*Corresponding author: bulent58@gmail.com

Abstract

In this study, five different districts in Gaziantep (Sahinbey, Karkamış, Sehitkamil, Yavuzeli and Islahiye) at age 11-12 months, healthy, a total of 24 yearling Awassi lamb (12 male, 12 female) serum copper, zinc and magnesium levels were determined at blood samples. Blood samples was taken in between the date of 1-15 November 2013. Blood serum was stored at -22 °C until analysis made. For the determination of mineral levels in blood serum, serum samples was burned for pretreatment after being diluted was studied at Microwave Plasma Atomic Emission Spectrometry (Agilent Teknolojies 4100 MP-AES). According to the results obtained from the research that blood serum copper levels was found to average 0.50 ppm in the province of Gaziantep. Between districts serum copper levels were found to be statistically significant (P <0.001). Taking the average of the five districts of Awassi yearling lambs blood serum zinc levels were found to average 0.37 ppm in general Gaziantep. Serum zinc levels between districts were statistical significances (P <0.001). Awassi yearling lambs blood serum copper levels in Gaziantep province-wide average of 2.74 mmol/l respectively. Districts between serum magnesium levels have been found to be statistically significant (P <0.001). Located important functions in the body that the minerals copper, zinc and magnesium Gaziantep Awassi yearling lambs fed on pasture conditions at the in copper, zinc and magnesium levels and differences between districts and at the end of the research found that in yearling lambs severely copper and zinc deficiency was seen, while magnesium valuable said to be normal.

Key Words: Awassi yearling lamb, serum, copper, zinc, magnesium

Acknowledgements: This study was supported by MKÜ BAP (Project code: 10864) and summarized in the Master's thesis titled "Investigation of serum copper, zinc and magnesium levels in amphibious rabbits grown in the Gaziantep region".

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Boron (Orthoboric Acid) Supplementation Into Diets of Hens During Late Laying Period on Serum Lipid and Protein Profile

Hacer ARSLAN KAYA[1*], Muhlis MACİT[2]

[1]Bayburt Univ., Demirözü Voc. Sc., Dept. of Plant and Animal Production, Industrial Poultry Prog., TURKEY
[2]Atatürk University, Faculty of Agriculture, Department of Animal Science, TURKEY
*Corresponding author: hacerkaya@bayburt.edu.tr

Abstract

This study was carried out to determine the effects of boron (orthoboric acid) addition into the diets of hens in the late laying period on performance, egg shell quality characteristics, some important egg yolk and serum parameters. Two hundred eighty eight Lohman commercial laying hens which are 62 weeks old were fed with 0, 50, 75, and 150 mg/kg of B for 12 weeks. The research was carried out in 18 replicates, and four laying hens were used for each replicate. During the research, 16-hour lighting was applied, and feed and water were given as ad-libitum. The effect of boron supplementation was not significant on the rates of diacylglycerol and hydrocarbon + cholesterol esters from serum lipid profile components, but its effect on the rates of polarlipid, triacylglycerol ($P < 0.05$), and serum total cholesterol ($P < 0.01$) was found significant. Serum lipid peroxidation was found to be lower ($P < 0.05$) in the groups supplemented with 75 and 150 mg/kg B than in the other groups. Supplementation of B into diets of laying hens affected the outcome of serum protein profile, the proteins being at different molecular weights at different levels. In conclusion, it has been determined that the addition of B in different amounts to the diets of laying hens during late laying period significantly affects serum lipid peroxidation, serum lipid and serum protein profile, and further research is needed.

Key Words: Laying hen; serum lipid profile; serum protein profile; serum lipid peroxidation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Housing Practice During the Last Month of Pregnancy on Postpartum Hoof Health in Dairy Heifers

Mehmet AKKÖSE[1*], Celal İZCİ[2]

[1]General Directorate of Agricultural Enterprises (TIGEM), Ceylanpinar Agric. Enterprise, Sanliurfa-TURKEY
[2]University of Selcuk, Department of Surgery, Konya-TURKEY
*Corresponding author: akkosem2012@gmail.com

Abstract

Claw horn disruption (CHD) lesions usually develop around calving and are exacerbated by adverse environmental factors. The objective of this study was evaluate the effects of housing conditions during the last month of pregnancy on postpartum hoof health in dairy heifers. The healty, pregnant heifers was housed mat based free-stall in group 1 (n = 12), mattress based free-stall in group 2 (n = 12) and straw yard in group 3 (n = 12) during the last month of pregnancy. All animals was housed mattress based free-stall after calving. Claw disorders were recorded at the start of study and at second and thirdh months after calving. Sole hemorrhages (SH) and white line hemorrhages (WLH) was found in all heifers at 8th or 12th weeks after calving. The prevalence of SH was found 100% in mat, 100% in mattress and 45% in straw yard at the 8th week after calving and 87.5% in mat, 80% in matress and 82% in straw yard at the 12th week after calving. There were statistically significant difference between groups for prevalence of SH at 8th week ($p<0.05$) but the differences were not statistically significant at 12th week. The prevalence of WLH was found 100% in mat, 90% in mattress and 82% in straw yard at the 8th week after calving and 50% in mat, 50% in matress and 36% in straw yard at the 12th week after calving. There were not statistically significant difference between groups for prevalence of WLH at all weeks ($p<0.05$). The mean severity of SH was lower in straw yard than mattress and mat (0.72; 1.90; 2.25 respectively) at the 8th week after calving and was lower in straw yard and mattress than mat (0.81; 0.90; 1.88 respectively) at the 12th week after calving. There were statistically significant difference between groups for severity of SH at all weeks ($p<0.05$). The mean severity of WLH were 1.88 in mat, 1.20 in mattress and 0.90 in straw yard at the 8th week after calving, and 0.88 in mat, 0.80 in mattress and 0.54 in straw yard at the 12th week after calving. There were statistically significant difference between groups for severity of WLH at 8th week ($p<0.05$) but the differences were not statistically significant at 12th week. In conclution, improvement of stall and floor comfort during the last month of pregnancy decreased the severity of sole and white line hemorrhages significantly but did not prevent development of sole and white line hemorrhages after calving.

Key Words: Calving; Claw Hemorrhages; Cow Comfort; Dairy Heifer; Floors

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Some Medical and Aromatic Plants on Common Pathogenic Bacteria in Poultry

Tülay ÇİMRİN[1*]

[1]Department of Animal Science, Agricultural Faculty, Mustafa Kemal University, 31034, Hatay- TURKEY
[*]Corresponding author: tcimrin@hotmail.com

Abstract

Protein needs of the world's population are largely provided from the poultry products. Because of showing high risks of infectious diseases sourced from growth conditions, environmental conditions, and physiological structures, these animals need special care and feeding. Until the use of antibiotics as a feed additive is prohibited, growers have resently received support from antibiotics to get as many products as possible and to reduce economic losses. However, in the long-term use of antibiotics, the formation of residues in tissues and the development of resistance by bacteria, has started the search process of natural feed additives having the same effects. This review examines the previous research studies on the medical and aromatic plants to evaluate their antimicrobial effects and the possibilities of replacement of these plants with antibiotics. As a result, it has been concluded that essential oils and extracts obtained from some medical and aromatic plants have antimicrobial action on pathogen bacterias which are dangerous to poultry and can be used as a protector against these pathogens.

Key Words*:* Medical and Aromatic Plants, Antimicrobial, Poultry

Hypothermia in Newborn Calves

Süleyman KOZAT[1*]

[1]Dept. of Internal Medicine, Faculty of Veterinary Medicine, University of Yuzuncu Yil, 65080 Van, TURKEY
*Corresponding author: skozat@hotmail.com

Abstract

One of the most important losses in animal husbandry is yield loss of neonatal calves. The neonatal period is one of the most critical stages in the development of farm animals because morbidity and mortality rates in this period are highest of all life stages. Studies have shown that mortality rate of newborn calves are higher in winter and spring than in other seasons. Approximately 50 to 53 % of calf defects in the neonatal period occur at birth or within two days of life. The most important cause of calf's losses is the formation of hypotermia in newborns because of the temperature of the environment is much lower than body temperature of calf, the change of air temperature (cold air and strong wind), the calf wetness and the lack of thermoregulation.
In this review, detailed information about causes of hypothermia, treatment and prevention of neonatal calf defects will be provided.

Key Words: Hypothermia, Newborn, Calf

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Thermogenesis in Newborn Calves

Süleyman KOZAT[1*]

[1]Dept. of Internal Medicine, Faculty of Veterinary Medicine, University of Yuzuncu Yıl, 65080 Van, TURKEY
*Corresponding author: skozat@hotmail.com

Abstract

In newborn calves, many physiological activites occur fort he formation of thermogenesis during the birth. The purpose of this physiological activity; is stabilize the normal body temperature (keeping the normal body temperature stable) and to protect calf from enviromental changes (keep, humidity, wind and flood). In particularly, in the calf stress caused by cold climates newborn calves should have a healty thermogenesis to prevent the development secondary diseases in the cold. There is a decrease in heat production depending on the decrease in mobilization of body oils following hypoxia, acidosis, low plasma thyroid hormone concentration in newborn calves.
In this review, detailed information will be given about the mechanism of thermogenesis in newborn calf, the factors that disrupt the thermoregulation and the hormones that play a role in thermogenesis.

Key Words: Thermogenesis, Newborn, Calves

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of the Body Condition Score of Purebred and Crossbred Kids Fattening in Different Systems

Hacer TÜFEKCİ[1*], Mustafa OLFAZ[2]

[1]Bozok University, Faculty of Agriculture, Department of Animal Science, Yozgat-TURKEY
[2]Ondokuz Mayıs University, Faculty of Agriculture, Department of Animal Science, Samsun-TURKEY
*Corresponding author: hacer.tufekci@bozok.edu.tr

Abstract

In this study was aimed to crossbred male kids of the Hair goat and Saanen x Hair kids (G1) compare body condition score intensive, semi-intensive and extensive conditions. In the research, 30 Hair goat and 30 Saanen x Hair goat (G1) crossbred single male kids was used. When the research findings were evaluated, in terms of body condition scores of 30, 60 and 90th days high values in the semi-intensive were detected in fattening Saanen x Hair goat (G1) crossbred kids. However, at the end of fattening in semi-intensive fattening group of Hair goat it is determined that the value of the highest condition score. This situation is thought to be caused by more growth of environment and width measurements in Hair goat kids in the later stages of fattening according to the Saanen x Hair goats (G1) crossbred. As a result, it can be said that the semi-intensive feeding group of kids of body condition score was higher than intensive and extensive fattening group kids.

Key Words: Hair Goat, Saanen x Hair Goat (G1), Body Condition Score, Fattening System

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Walnut by-Products and Seed to Some Egg Dimensions and Yolk Color of Quails

Sabri Arda ERATALAR[1*], Nezih OKUR[1]

[1]AİBÜ – Ziraat ve Doğa Bilimleri Fakültesi, Kanatlı Hayvan Yetiştiriciliği Bölümü, Gölköy Kampüsü, BOLU
*Corresponding author: ardaeratalar@ibu.edu.tr

Abstract

In this study, using possibilities of walnut (seed) and as a walnut by-product green husk were investigated in quails. The experiment took a total of 4 weeks and 36 breeding purebred female Japanese quails (*Coturnix coturnix japonica*) were used in the experiment. A total of 255 eggs, 85 from each treatment group were obtained from these quails were used. These quails were fed with dried walnut seed (1 kg/ton) and walnut green husk (1 kg/ton) for 4 weeks. The eggs obtained at the 4th week were weighed, measured and examined. It was determined that egg yolks obtained from walnut seed fed quails had lower L values, meaning that these were darker than the ones obtained from green husk fed quails which were also darker than the ones from the control group which could lead to better public demand ($p<0.05$). The differences between h values of the groups were found not to be statistically important between the treatment groups ($P>0.05$). The width of the eggs obtained from quails fed with green husks and walnut seed were found to be narrower and therefore lower indexed eggs as well ($p<0.05$). As a result of the research, it was determined that walnut seed and green husk have potential to be used use as a feed additive in layer feed. However, in order to be able to put this potential more clearly, it is considered necessary to carry out more detailed studies, including commercial chicken layers especially in terms of processing technology and dosing.

Key Words: Quail eggs, green husk, wallnut, egg yolk colour

The Effects of Adding of Synerall on Growth Performance in Japanese Quail Diets

Tuncay TUFAN[1*], Tugay AYAŞAN[2], Cavit ARSLAN[3]

[1]Depat. of Animal Nutrition and Nutr. Disease, Faculty of Veterinary Medicine, Siirt Univ., Siirt-TURKEY
[2]Eastern Mediterranean Agricultural Research Institute, Adana-TURKEY
[3]Dept. of Animal Nutrition and Nutr. Disease, Faculty of Vete. Medicine, Selçuk University, Konya-TURKEY
*Corresponding author: tuncay-tufan@hotmail.com

Abstract

This study was conducted to determine the effect of Synerall (probiotic + prebiotic combination) additions on the fattening performance at different ratios to quail rations. In this study 450 one day old Japanese quail were used. The quail chicks were randomly divided into 3 main groups each containing 150 chicks, then each main group divided 5 replicate subgroups each containing 30 chicks. The quails were fed with two basic rations which prepared for the starter (1-21 days) and grower (22-42 days) period. While the control group was fed with these basic rations without adding any additives however, the trial groups were fed with 100 mg/kg (Trial I) and 300 mg/kg (Trial II) with Synerall. The study lasted 42 days. Feed and water were given ad libitum during the study. At the end of the study, there was no difference between the groups in terms of live weight ($P>0.05$). When the experimental groups were significantly higher than the control group in terms of live weight gain, the highest live weight gain was found in the group with 300 mg / kg Synerall added ($P <0.001$). The lowest feed consumption was determined in the Trial I group ($P <0.05$). When the feed conversion ratio of the Trial groups was significantly lower than the control group, the lowest rate of feed utilization was determined in Trial II group ($P <0.001$). It was determined that the addition of 100 and 300 mg / kg Synerall to quail rations in this study positively affected the fattening performance. As a result, it is recommended to use 100 and 300 mg / kg of quail ration of Synerall, a probiotic and prebiotic combination, due to the improvement effect of fattening performance.

Key Words: Quail, fattening performance, additive, probiotic, prebiotic

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Usage of Whole Cottonseed in Ruminant Diets

Hasan DEMIR[1*], Abdullah CAN[1]

[1]Department of Animal Science, Faculty Of Agriculture, Harran University -Şanlıurfa
*Corresponding author: hasandemir_85@hotmail.com

Abstract

Cotton crop is produced in 5 million decare land and rank in 5 th place in terms of total crop production in Turkey according to TUIK (2017) Cotton fibres are used in the textile industry and cotton seeds are used in oil industry due to its high oil content. Cotton seed meal with high protein content is used as a protein supplement for feed industry following oil extraction of cotton seed. Whole cotton seed (WCS) can be replaced with cotton seed meal in high yield dairy cattle feeding due to its well-balanced nutrient content.
WCS contains high level energy (NEL; 2.91 Mcal/kg), crude oil (19.3%), crude protein (HP, 23.5%), and NDF (50.3%) for formulation of ruminant rations. Ratio of HP: NEL has been reported to be particularly important in feeding high yield dairy cattle. WSC feeding has beneficial effects to dairy cows under high environmental temperatures because of low heat increment value, but its high fat and gossypol (C 30 H 30 O 8) contents may have negative effects on milk production and health status of dairy cow when it is over fed.
WCS nutritional content, its effects on toxicity, feed intake, rumen fermentation, volatile fatty acids formation, milk production and rumen fermentation were been discussed in this review. Additionally, some methods for reducing gossypol toxicity were evaluated for ruminant animals.

Key Words: Whole cottonseed, Ruminant, Rumen fermentation, Gossypol

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Different Level Dietary Whole Cotton Seed on Blood Parameters and Performance of Awassi Lambs under Heat Stress

Hasan DEMIR[1*], Abdullah CAN[1]

[1]Department of Animal Science, Faculty Of Agriculture, Harran University -Şanlıurfa
*Corresponding author: hasandemir_85@hotmail.com

Abstract

This study was carried out to determine the effect of whole cotton seed (WCS) supplementation on finsihing performance and blood parametters of Awassi lambs under heat stress. The compositions of diets given to the different treatments were as follow: (1) control (concentrate feed (CF) without whole cotton seed (WCS)) plus 15% wheat straw (WS), (2) 8.5% WCS, 76.5% CF and 15%WS; (3) 17% WCS, 68% CF plus 15%WS. Total 27 male Awassi lambs (3–4 month old) were randomly allotted to three dietary treatments into equal numbers for each diet containing in a completely randomized design. Following 15 d of diet adaptation period, lambs fed ad libitum experimental diets for 56 d. According to finishing trial, avarage daily gain, feed intake (FI), dry matter intake (DMI), feed efficiency and water consumption were not affected by inclusion of WCS ($P>0.05$). Only numerical increment of daily gain, FI and DMI was observed in 8.5% WCS group. Supplementation of WCS incerased blood cholesterol and potassium level ($P<0.05$). Changes of scrotoral circumfarance was observed with supplementation of %17% of CSM ($P<0.05$). As a result, CSM can be subsituted with CF up to 8.5% of diet without any negative effects on finishing performance of Awwasi lambs under heat stress conditions.

Key Words: Awassi lambs, Whole cotton seed, Finishing performance, Blood parameters, Heat stress

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Applicability of Poisson Regression Analysis in Agricultural Research

İrfan ÖZTÜRK[1*]

[1]Harran University. Faculty of Agriculture. Department of Animal Science, Şanlıurfa-TURKEY
*Corresponding author: ozirfan23@yahoo.com

Abstract

Some of the data obtained from the studies are continuous and some of them are intermittent variable. Parametric tests are suitable to the data of continuous variable structure but nonparametric tests should be applied to the data showing a discrete variable characteristic

Similarly, when the regression model is estimated, the structure of the data must be taken into account. Data showing continuous variable specification is estimated by the least squares approach. But integer regression models should be preferred for positive numbers in discrete variable property. Depending on the characteristics of the intermittent variables, regression models such as Poisson regression, Negative Binom regression, Hurdle regression can be used. Since fertility is an event feature that rarely occurs in a particular period of time, our data show poisson distribution. The Poisson regression does not impose any restrictions on independent variables. For this reason, independent variables may be categorical, continuous, and integer. The most prominent feature of the Poisson distribution is that it has a single parameter, that is, its mean and variance are equal (or close) to each other.

$E(Y) = Var(Y) = \mu$

In our study, independent variables affecting fertilization yield, which is a dependent variable, were determined and shown to be predicted by poisson regression. However, the results were compared with the regression models with the permanent variable characteristic.

Key Words: Poisson regression, Artificial insemination, Count data, Cattle

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Examination of the Present Situation of Sheep and Goat Breeding Enterprises in the City of Kilis

Yadigar POLAT[1*]

[1] Kilis 7 Aralık Univ., Health Services Vocational School, Dept. of Medical Services and Techniques, Kilis
*Corresponding author: yadigarpolat@kilis.edu.tr

Abstract

The study was conducted to get information about the present situation of sheep and goat breeding enterprises in the city of Kilis. In the study, face-to-face interviews with 81 business owners from 26 villages were conducted. It was determined that the majority of the business owners were in the 41-50 age range, have been in the business for 30-40 years, 13,6% of them are illiterate and 71,6% of them graduated from elementary school. The business owners stated that the care of the animals is given by themselves, their spouses and their children, and that they sometimes employ short-time Syrian workers. The 92,6% of the animals are milked by hand, and 67,8% of the milk is turned into cheese. The participants expressed that they mostly prefer the Awassi sheep (86,4%) and the Kilis goat (100%). 81.5% of the business owners also expressed that they own land and engage in plant production (69.1%) as well as animal husbandry, and that 84% of them are not nomads. The animals are mostly housed outdoors during the summers and indoors during the winters (56.8%). The animals generally eat supplementary feed in addition to feeding from the meadow. Only 4,9% of them are fed by hand.
The education levels of the people in the sheep and goat breeding business in Kilis are quite low, and they use traditional husbandry methods in their businesses. The enterprises are having problems in finding shepherds since the young people do not want to stay in the villages. Finally, these enterprises generally operate as small-scale enterprises.

Key Words: Sheep and Goat Breeding, education level, farmers' experience, the shepherd problem

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Use of Fibrolytic Enzyme in Ruminant Nutrition: II. Effect of Fibrolytic Enzyme Administration on Rumen Parameters and Nutrient Digestibility in Suckling Calves

Tuncay TUFAN[1*], Cavit ARSLAN[2], Mehmet SARI[3], Oktay KAPLAN[4]

[1*]Dept. of Animal Nutrition and Nutritional Disease, Faculty of Vet. Medicine, Siirt University, Siirt, TURKEY
[2]Dept. of Animal Nutrition and Nutr. Disease, Faculty of Vet.Medicine, Selçuk University, Konya, TURKEY
[3]Kırşehir Ahi Evran University Faculty of Agriculture Department of Animal Science, Kırşehir, TURKEY
[4]Dept. of Animal Nutrition and Nutr. Disease, Faculty of Vet. Medicine, Dicle Univ., Diyarbakır, TURKEY
*Corresponding author: tuncay-tufan@hotmail.com

Abstract

The aim of this study was to evaluate effects of different rates orally fibrolytic enzyme administration on rumen parameters and nutrient digestibility in suckling calves. Eighteen, 4 to 11 d old, 32 to 50 kg live weight suckling male Simmental calves were used in the study. Calves divided into three main groups (Control, Enzyme I and Enzyme II) according to similar live weight and were housed individually in calf hutches. Animals were fed whole milk from at the beginning to at the end of the study, 10 % of their live weight, and also calf starter concentrated and chopped dried grass as ad libitum. Calves in the Control, Enzyme I and Enzyme II groups were fed orally at 0, 2 and 4 g/day a commercial fibrolytic enzyme, respectively, which is dissolved in 50 ml distilled water. The research lasted for 84 d. There was no statistically significant difference among the groups in terms of rumen pH and ammonia nitrogen at 42 and 84th days. There were no difference in terms of rumen volatile fatty acids (acetic, propionic, butyric) concentration among the groups at 42th day, but acetic acid concentration in the Enzyme I group was significantly higher than the Control group at 84th day. Propionic acid concentration in the Enzyme I and Enzyme II groups and butyric acid concentration in the Enzyme I group were significantly higher than the Control group at 84th day. There was no significant difference between the groups in terms of digestibility of dry matter, organic matter, crude cellulose, crude protein and crude fat at the end of the study.

Key Words: Calve, fibrolytic enzyme, rumen parameters, volatile fatty acids, digestibility

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Awassi Lambs of the Growth Period in Investigation Anfis Method and Multiple Regression Models Comparison

İrfan ÖZTÜRK[1*], Ahmet Kerem DEMİR[2]

[1]Harran University. Faculty of Agriculture. Department of Animal Science, Şanlıurfa-TURKEY
[2]GAP Agricultural Research Institute, Şanlıurfa-TURKEY
*Corresponding author: ozirfan23@yahoo.com

Abstract

In this study, multiple regression and ANFIS analyzes were carried out by considering the data obtained from some body measurements affecting the live weight of male lambs, and comparison was made between the two models based on the obtained results. In the study, it was determined whether there were multiple connections in the data set prior to the planned multiple regression analysis using the SPSS program. It was decided that the tolerance values for the independent variables were very small and also the multiple connection problem between the data because the VIF values were greater. Using the RR method on the NCSS program to solve this problem; The regression coefficient corresponding to the obtained k coefficient is used. According to the analysis results; Independent variables accounted for an average of % 97 of the change in Live Weight of Lambs. Although the results of the ANFIS estimation in this study give similar results with multiple regression, the targeted fuzzy set models which can be a mathematical model alternative in ANFIS have been obtained and emphasized, even if a mathematical model can be obtained in multiple regression.

Key Words: Ridge Regression, multiple link, multiple regression, set, ANFIS

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fattening Performance and Carcass Characteristics of Different Cattle Breeds Breed in Şanlıurfa Province of Turkey

Ayşe PINARBAŞI[1], Kemal YAZGAN[1*]

[1]Department of Animal Science, Faculty of Agriculture, Harran University, Sanliurfa, Turkey
*Corresponding author: kyazgan@harran.edu.tr

Abstract

This research was carried out to examine the fattening performance and carcass characteristic such as hot carcass weight and dressing percentage of Black White and crossbreed Black White, Simmental and crossbreed Simmental, Brown Swiss and crossbreed Brown Swiss, Charolais and crossbreed Native Anatolian Black cattle. The data set consist of live weight and hot carcass weight records obtain from a commercial farm placed in Sanliurfa province. At the end of this research, considering the slaughter live weights, hot carcass weights and daily live weight gains, it was determined that Simmental, crossbreed Simmental, Charolais, Black white and crossbreed Black White were superior than crossbreed Native Anatolian Black, Brown Swiss and crossbreed Brown Swiss ($P<0.05$). However, considering the dressing percentage of cattle breeds, Black white cattle had lover percentage than the others ($P<0.05$). According to these results it can be suggested to cattle breeders in Sanliurfa province that using Simmental, crossbreed Simmental, Charolais, crossbreed Native Anatolian Black white cattle for the fattening activity.

Key Words: Black White, Simmental, Charolais, Fattening performance, Carcass characteristic

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Some Nutrient Contents and Sensory Properties of Organic Broiler Chicken Meat

Hacer KAYA[1*], Musa KARAALP[2]

[1]Bayburt Univ., Demirözü Vocational School, Dept. of Plant and Animal Production, Bayburt-TURKEY
[2]Gumushane Univ., Kelkit Aydin Doğan Vocational School, Veterinary Department, Gumushane-TURKEY
*Corresponding author: hacerkaya@bayburt.edu.tr

Abstract

Consumer interest in alternative poultry products gradually increases. Reasons for consumers preference for these products is mainly due to their sensitivity to habits, product characteristics, animal welfare and environmental problems. Organic products are preferred because they are considered to be better in terms of reliability, taste, certain sensory properties and nutrient content. The research results show that organic broiler meat contains less fat, saturated and monounsaturated fatty acids and more protein and polyunsaturated fatty acids than traditional broiler meat. However, it is undeniable fact that it will be an important effect of the available forage feed sources to obtain at these results, especially in the outdoor area. Furthermore, it is reported that genotype and breeding systems may be effective on the sensory characteristics of organic chicken meat such as texture, color, tenderness, juiciness and flavor. However, it is stated that some nutrients and sensory properties of meat can be changed with the consumption of forage in designed pasture area and of live protein sources (insects, worms etc.) in here. It is declared that the Organic Agriculture Legislation in the Council of the European Union and in Turkey that it is necessary to reach the forage feed sources in addition to concentrate feed in organic poultry production. However, in the mentioned legislation, the limits of the practices are not clearly reported. In this review, it is mentioned that the organic broiler meat production to increase the other expectations of consumers rather than animal welfare by various management practices is possible.

Key Words: broiler; organic meat; nutrient; sensory traits

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Evaluation of Orange Pulps Dried by Different Methods and Temperatures for Dairy Diets

Zeynep ŞAHAN[1*], Harun CİNLİ[2], Tunahan ERDEM[3], Uğur SERBESTER[2], Mehmet Serdar ÖZTEKİN[3]

[1]Adıyaman University, Department of Plant and Animal Production, Adiyaman, Turkey
[2]Cukurova University, Department of Animal Science, Adana, Turkey
[3]Cukurova University, Agricultural Machinery Engineering and Technology, Adana, Turkey
*Corresponding author: zysahan@gmail.com

Abstract

The food industry compose considerably industrial and agricultural waste. One of the industrial waste products is orange pulps are seasonally obtained from food industry in Turkey. The citrus products that processed and evaluated are bitter grapefruit, grapefruit, grapefruit and lemon, totally production amount is about 4 million tones. After the citrus is processed to fruit juice, approximately 35-40% of pulp occurs. This amount shows that citrus pulp has a significant economic potential for finding out alternative feed sources to feed deficiency in our country. This study was carried out to evaluate how orange pulp's quality parameters change by drying with most effective and less price drying methods and to determine the potential use of dried orange pulp as an alternative feedstuff. Orange pulps were dried by hot air, infrared drying and combination of them at 70 and 80 °C. The drying time and moisture content of samples were recorded and some drying parameters were explored in detail. The drying time of orange pulp were 14; 11; 30; 27; 23 and 17 hours for İnfrared drying, hot air drying and combination of them at 70 and 80 °C respectively After drying prosess was completed some nutritient composition of orange pulps were determined. This study is a part of project donated by Research Council of Turkey (TUBİTAK) by 101R114 number project.

Key Words: Drying method; Pulp; Citrus; Ruminant

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determining Heat Stress Effect in Holstein Dairy Cattle Using Daily Milk Yield and Meteorological Data Obtained from Public Weather Station in Şanlıurfa Province of Turkey

Kemal YAZGAN[1*]

[1]Department of Animal Science, Faculty of Agriculture, Harran University, Sanliurfa, Turkey
*Corresponding author: kyazgan@harran.edu.tr

Abstract

The objective of this study was to detect the relationship between weather information, obtained from nearest public weather station, and milk productions of Holstein cows breeding in Sanliurfa province of Turkey. Data used in this study comprised 711,968 first-five parity individual daily milk and live weight records of 939 Holstein cows. Results from this study indicated that using combination of minimum ambient temperature and relative humidity values one day earlier from daily milk yield in temperature – humidity index (THI) formula can be good alternative for determining heat stress in Holstein dairy cows under climatological conditions in Sanliurfa province of Turkey. As a result, this study confirmed that for quantifying heat stress in dairy cows valuable information can obtained from public weather stations.

Key Words: Dairy cattle, Heat stress, Milk loss, Milk yield, Temperature-humidity index

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of Six Sigma Vehicles with ISO 9001 to Increase Production in Agricultural Enterprises

İrfan ÖZTÜRK[1*], Sabri TURTSEVEN[1], Yılmaz GÖKSU[1], Zeki DOĞAN[1], Hamza YALÇIN[1]

[1]Harran Uni. Ziraat Fact. Animal Husb. Dept., Şanlıurfa-TURKEY
*Corresponding author: ozirfan23@yahoo.com

Abstract

Today, large businesses are constantly working to improve productivity. Many tools are used for these operations. These tools can be to assign quality operators and marketers. It is important to give advertisements and make surveys. It may also be necessary to obtain certifications such as ISO 9001, which assure the quality standards of the products. However, there are also six sigma methodologies that aim to increase productivity in production, mistake in production, death in agricultural establishments, disease rate and wastage in production. In this study, it was tried to show that the production and efficiency could be increased with the six sigma methodology in agricultural enterprises. It was also been attempted to propose that the six sigma methodologies would be a bigger support by the relevant experts rather than cash support each year for unit production.
An insufficient weight gain of a fattening farm was evaluated in the current study. New regulations were made in terms of ration with the opinions of ration experts and significant increases were obtained for live weight gain at $P < 0.01$ level.

Key Words: Six sigma, iso 9001, Agricultural production, Supporting, Ration

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Yield Characteristics in Dairy Cattle Farms in Muş Province

Mustafa KİBAR[1], Galip BAKIR[1*]

[1]Siirt University, Faculty of Agriculture, Department of Animal Sciences, Siirt
*Corresponding author: galipbakir@hotmail.com

Abstract

This study was conducted to determine the yield characteristics of dairy cattle farms in Muş province and its districts. For this purpose, a cross-sectional questionnaire was applied to 346 farms using the random sampling method. The obtained data were cross-tabulated using SPSS package program and the relationships between factor-properties was determined by chi-square analysis. According to this, the average age, number of dairy farms, the number of individuals in the farms and the number of animals in farmers are 44.21, 21.22 years, 7.16 and 37.54 heads, respectively. The educational status of the farmers varies from non-literate (9.1%), primary school (51.5%), junior high school (24.6%), high school (13.5%). In the farms, 47.6% of the daily milk yield is 6-10 kg, while it is followed by 5≤ kg with 24.9% and 11-15 kg with 22.8%. In addition, the rate of farms that weigh 16 kg and over is only 4.8%. 70.5% of the produced milk is evaluated as cheese-yogurt-butter. In farms, lactation period is mostly 6-7 months (30.1%), followed by 5 months (25.8%), 8-9 months (23.6%) and 10 years (20.6%). It was found that 87.9% of the farms had insufficient milk yield. They stated that feeding (24.3%) is the most important factor as the reason of this. 86.4% of the farms stated that the milk yield changed according to the season, while in the spring (42.4%) milk production increased and in the summer (27.3%) milk production decreased. It was found that almost all of the farms (94.6%) distinguished theirs's cows to dry period. This research is important in terms of providing an important data base relating to dairy farming in Muş province.

Key Words: Muş province, Dairy cattle farms, Yield characteristics

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Chemical and Nutritional Characteristics of Lemon Pomace Silage with Some Roughage Source

İsmail ULGER[1], Mahmut KALİBER[1], Selma BÜYÜKKILIÇ BEYZİ[1], Yusuf KONCA[1]

[1]University of Erciyes, Faculty of Agriculture, Department of Animal Science, Kayseri/Turkey
*Corresponding Author: sbuyukkilic@erciyes.edu.tr

Abstract

This study was conducted to evaluate the possibilities of making silage lemon pomace (LP) from lemon juice industry waste with some roughage source. The silages were made with wheat (LPW) and alfalfa straw (LPA) in a 10% level; maize (LPM), sugarbeet pulp (LPS) in a 50% level as five replicates. On the 60th day of fermantation, silage samples were analysed for dry matter (DM), pH, crude protein (CP), ash (CA), ether extract (EE), cellulose (CE), ADF, NDF. Silage samples were also assayed in-vitro gas pruduction parameters (gas (GP) and methane production (MP), organic matter digestibility (OMD)) and energy parameters (metabolisable energy, ME and net energy lactation, NEL) were calculated. There were no significant differences between treatment groups in case of methane production. However pH (3.55-4.00) and DM (19.66-31.67, %) were higher in LPA and LPW groups than other groups. The CP value was highest in LPA group, and LP, LPM and LPW were lowest. In the LPM and LPW groups were showed the highest CE, ADF and NDF values, but the LP group was have the lowest values. The GP (60-74, ml/24h), ME (10.41-12.31, Mj/kg DM), NEL (6.58-8.18, Mj/kg DM) and OMD (72.10-84.61, %) values were observed in the highest LP group while the lowest value was observed in the LPW group. When the results of the research was examined that lemon pomace is possible to evaluate silage with alone or some roughage source and it has been determined that the lemon pomace alone silage quality have some nutritive advantages (especially digestibility and energy values) compared to treated with roughage sources.

Key Words: lemon pomace silage, methane, gas production, digestibility

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Using Generalized Procrustes Analysis for Evaluation of Sensory Characteristic Data of Lamb Meat

Gazel SER[1*]

[1]Van Yüzüncü Yıl University, Faculty of Agriculture, Department of Animal Science, 65080 Van, TURKEY
*Corresponding author: gazelser@gmail.com

Abstract

ABSTRACT- Generalized Procrustes Analysis (GPA) is a multivariate statistic method that is used at the evaluation of sensory analyses in the food industry. GPA provides benefit in terms of decreasing the difference between the panelists and bringing the data obtained from different panelists together. In this study, the aim was to determine the effect of a pre-slaughter fasting period on sensory characteristics of lambs fed with different rations using GPA. Semi-trained panelists formed from twenty-six persons were requested for evaluation of the meat samples such as tenderness, juiciness, flavor and overall liking rated on a scale of 1(extremely dislike) to 9 (extremely good). The first two factors obtained by GPA explained 66.74% of total variability. As a result of the analysis, it was determined that 12 h and 24 h fasting of lambs fed barley supplemented with alfalfa hay were less preferable when compared to lambs fed alfalfa hay only. In addition, lambs in both groups with 48 h fasting were preferred less by the panelists. In conclusion, GPA analysis provides useful data concerning the sensitivity of each panelist in a sensory panel test.

Key Words: Sensory analysis, procrustes analysis, meat flavor

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Usage Sepiolite in Dairy Cattle Concentrate Feed on Pellet Production Parameters and Pellet Quality

Sadık ÇIVRACI[1*], İlyas ONBAŞILAR[2], Sakine YALÇIN[3], Oğuz Berk GÜNTÜRKÜN[4], Fernando ESCRIBANO[5]

[1]Bayburt Univ., Demirözü Vocational School, Depat. of Veterinary Medicine, Demirözü-Bayburt, Turkey
[2]Hacettepe University, Laboratory Animal Husbandry and Research Unit, Faculty of Medicine, Ankara, Turkey
[3]Ankara Univ., Faculty of Vet. Medicine, Dept. of Animal Nutrition and Nutritional Diseases, Ankara, Turkey
[4]DuPont Industrial Biosciences, Ataşehir-İstanbul, Turkey
[5]Tolsa, SA, Department of Marketing and Development, Tolsa SA, ES-28031-Madrid, Spain
*Corresponding author: sadikcivraci@bayburt.edu.tr

Abstract

The purpose of this experiment was to determine the effects of sepiolite usage on pellet production parameters and pellet quality for dairy cattle concentrate feed under industrial conditions. In this study 8 t pellet concentrate feeds for control and treatment groups with 4 batch were produced in a commercial feed factory. Each batch was 2 t. Control group feed manufactured in this study, contained 19.63% crude protein, 11.73% crude fibre and 2.78% ether extract. For the treatment group feed 1% sepiolite was used as top dressed in the mixer. Pelleting disc having 5 mm hole diameter and 52 mm hole length was used in the factory. Pellet durability index was found to be 97.57% in the control group and 97.80% in the treatment group. Sepiolite usage didn't affect energy consumption, pellet moisture content and pellet durability index. Further trials could be done increasing pellet production capacity and pellet quality with sepiolite in dairy cattle concentrate feed.

Key Words: dairy cattle concentrate feed, pellet durability, pellet quality, sepiolite

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Essential Oil Mixture to some Hematological Blood Parameters of Broiler Water under Temperature Stress

Emre TEKÇE[1], Bülent BAYRAKTAR[2], Mehmet GÜL[3], Kübra ÇINAR[4]

[1]Organic Agricultural Management, Faculty of Applied Sciences, Bayburt University, Bayburt-TURKEY
[2]Physical Therapy And Rehabilitation, Faculty Of Health Scıences, Bayburt University, Bayburt-TURKEY
[3]Atatürk University Veterinary Fakulty, Erzurum-TURKEY
[4]The Food Engineering, Faculty Of Engıneerıng, Bayburt University, Bayburt-TURKEY
*Corresponding author: emretekce@gumushane.edu.tr

Abstract

Effects of essential oil mixture (EOM) (*Eucalytus glabutus* labii, *Tymus vulgaris*, *Cymbopogon nardus* and *Syzgium aromaticum*) to some hematological blood value of broiler water under temperature stress investigated in this study. 400 male broilers (Ross-308) of one day of age were used within the study, which lasted for 42 days. The research was separated into 8 different groups, each including 50 animals (and each group was separated into 5 sub-groups): 22 ºC (Control (C), C+250 ml/l, C+500 ml/l, C+750 ml/l). Groups fed under heat stress, 36 ºC (Stress Control (SC), SC+250 ml/l, SC+500 ml/l, SC+750 ml/l). At the end of the trial cervical dislocation was performed to out of 80 animals in total 10 broiler selected randomly from selected group. Some hematological parameters were studied taking into bloodshed EDTA tubes. In hematological parameters of the analyzes WBC, HGB, HCT, MCV, Lymph and Basofil rate decreased while, amount of MCH, MCHC, Neutrofil and IG increased ($p<0,05$). In hematological analysis EOM water added to broiler showed a decreasing effect on blood cells as a result of and these effects increased the rate of body defense systems.

Key Words: Broiler, Essential Oil Mixture, Hematologic parameters

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of *Citrus cinensis* and *Tymus vulgare* Essential Oils on the Bacteriolytic Activity of Ruminal Protozoa

Zeynep ŞAHAN[1*]

[1]Adıyaman University, Department of Plant and Animal Production, Adıyaman-TURKEY
*Corresponding author: zysahan@gmail.com

Abstract

Different substances are used to either eliminate or decrease the numbers of ruminal protozoa or to alter their makeup. Essential oils (EO) are one of the substances used for this purpose. In this study the effects of EO on the bacteriolytic activity of protozoa was determined in strained rumen fluid using *S. bovis* (ES1) as the labelled substrate. Essential oil (extracted from orange peel (*Citrus cinensis*), thyme (*Tymus vulgare*)) were added (diluted in autoclaved water containing 10% DMSO) to a final concentration of 500, 1000 or 5000 ppm. All incubation were carried out in triplicate over 3 hr with samples taken hourly to determine bacterial breakdown from the release of 14C from *S. bovis* labelled by previous incubation with 14C-luecine. Incubations were carried out in the presence of excess 12C-leucine to prevent reincorporation of label into microbial cells. The results showed that all thyme doses had strong anti-protozoal activity, but orange indicated anti-protozoal activity at only 5000 ppm doses.

Key Words: rumen bacteria, protozoa, thyme, orange

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Taurine on the Performance of Freshwater Finfish Species

Derya GÜROY[1*]

[1]Department of Aquaculture, Armutlu Vocational School, Yalova University, Armutlu, Yalova-TURKEY
*Corresponding author: dguroy@yahoo.com

Abstract

Aquafeed costs comprise approximately 50%–60% of total farm production costs and the dietary protein is the most costly. The feed should not only be nutritionally sufficient but also cost-effective. Fish meal is the main protein source of freshwater fish feeds because it is a rich source of essential amino acids, essential fatty acids, energy and minerals. It is also very palatable and highly digestible to most freshwater fish. Researchers and producers have sought to find alternative sources of plant and animal resources due to the limited natural resources of this raw material and the increase in their prices in recent years. As a result of the low content of fish meal and oil in the fish diet, the growth performance of the fish decreases and the fish flesh quality is poor. In recent years, the use rates of feed additives have increased in order to minimize these situations. Reducing the cost of production in fish farming is one of the most important purposes. Efforts to reducing feed cost have focused on lowering dietary protein levels, adding essential amino acids especially lysine and methionine to ensure that nutritional needs are met when high plant proteins containing diet or lowering protein level in diet and reducing animal protein by substituting less expensive plant proteins. Lysine and methionine often remain deficient or restricted in fish diets containing high levels of plant protein sources. Apart from these, in recent years studies on the use of taurine in freshwater fish feeds have focused. Taurine (2-aminoethanesulphonic acid) is a sulphur-containing beta amino acid found in high concentrations in many vertebrate tissues. Taurine has important roles in fish metabolism. The most important sources are marine crustaceans, double crustaceans, crustaceans and fish found in the natural nutrients of marine carnivores. However, there is no taurine of raw plant material. In this case, taurine deficiency may be an important cause of decrease in growth and reproduction yield in fish. In recent years, the important effects on freshwater fish have been explored in more detail, and scientific work on this amino acid has also been emphasized. This review summarizes the present information on the roles of taurine in freshwater fish and on the effects of dietary taurine on fish growth performance.

Key Words: Amino acid, fish meal, alternative feed ingredients, taurine

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determining Silage Quality, Nutrient Composition and Digestibility of Barley -Vetch Mixture Silages Harvested at Different Growth Stage

Mehmet PAYDAŞ[1*], Abdullah CAN[1]

[1]Harran University Faculty of Agriculture Department of Animal Science, Şanlıurfa-TURKEY
*Corresponding author: mpaydas2010@mynet.com

Abstract

This study was carried out to determine optimum ratio of easy ensiling barley and low soluble carbohydrate and high buffer capacity vetch silage materials and harvesting time in terms of silage quality, nutrient composition and nutrient digestibility. Chopped vetch and barley materials were mixed 3/0; 2/1, 1/2 and 0/3 ratios to form experimental groups, respectively. Total 32 jars (1.5 L) including two harvest times (April vs May) and for mixture ratios with four replicates each were prepared for ensiling materials. At the end of study, harvesting time and mixing ratio interactions were observed for all of the examined silage criteria except physical and sensory evaluation points ($P < 0.05$). Increasing vetch ration in mixture raised numerically CP, ADF and crude ash, but DM, NDF, crude fiber and Fleig points were lowered with vetch increment at both harvest time. pH and NH_3-N values of silages were decreased in May harvest time. Physical and sensory evaluation points of silages were not affected from harvesting time and mixing ratio ($P > 0.05$). In vitro DM and OM digestibility were diminished at May harvest silages. Lactic acid content was found desirable at May harvest and barley including groups. Butyric acid was not detected only barley and 2/1 barley/vetch groups harvesting at May. According to this study, choosing appropriate harvesting time (more than 25% of DM) and mixing ratio (2/1- barley/vetch) is crucial for obtaining barley- vetch good quality mixture silages.

Key Words: Barley silage, Wetch silage, In vitro digestion, Silage quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

What is the Beehive Air?

Gonca ÖZMEN ÖZBAKIR[1*]

[1]Harran University, Faculty of Agriculture, Department of Animal Science, Şanlıurfa-TURKEY
*Corresponding author: gozmenozbakr@harran.edu.tr

Abstract

The honey bees, eusocial insects, are not a new phenomenon for humankind to use their beekeeping products for therapeutic purposes in addition to their important role in pollination and various products with economic value. There have been many studies on the therapeutic properties of bee products such as honey, pollen, royal jelly, bee venom, propolis, apilarnil. The use of these products for healing and health is called apitherapy. The beehive air is used as supportive treatment for some diseases in many European countries (Germany, Hungary, Romania, Slovenia and Ukraine). There are also beekeepers in Turkey that provide treatment with beehive air. Treatment with beehive air is by inhalation of the volatile oils and aerosol in the hive through a fan and breathing mask. This warm air contains a mixture of volatile substances and fragrances from honey bees' bodies, wax, nectar, pollen and propolis. Hive air is used for supportive treatment of the following diseases: Bronchitis, asthma, smoker's cough, emphysema, allergies, immune system diseases, cardiovascular diseases, rashes, neurodermatitis, headaches, migraines, stress, and depression. It can be applied to young and old people, but the treatment process should be determined and followed by consultant doctors. In this review, information is given about beehive air, its usage and application methods.

Key Words: Honeybee, beehive air

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation on the Effects of Some Environmental Factors on the Growth and Survival of Akkaraman Sheep Race Lambs Grown in Aksaray Province

İbrahim HALICI[1*], Uğur DEMİRCİ[1], Şükrü DOĞAN[1]

[1]Bahri Dağdaş International Agricultural Research Institute, Konya-TURKEY
*Corresponding author: ibrahimhalici@windowslive.com

Abstract

In this research, weight records of 5445 grown in 29 sheep farms were taken in order to determine the growth characteristics of the lambs of Akkaraman sheep race in Aksaray province. As a result of the study, living weight averages of Akkaraman lambs were determined as 4.10, 15.54 and 26.95 kg on the birth, 60th day and 120th day respectively. The effect of gender and type of birth and the impact of business factors is found significant ($P<0.05$) while the mother age was not effective ($P>0.05$).

A logistic regression model analysis was applied to determine the effect of maternal age and birth weight on the survival of lambs until the 120th day of birth. According to logistic regression analysis results, 1 unit of increase on birth weight was found as effective to increase (2,19 times) survival of lambs at important level ($P<0.05$). Furthermore, the Odds Ratio values of 3, 4, 5 and 6 years old mothers in comparison with 2 year old mothers, were found to be 2.214, 1.638, 0.913 and 1.071, respectively. It was determined that the lambs born from 3 years old mother in comparison with the lambs born from 2 years old mother had 2,21 times more survival. According to the analyses results, it was evaluated that the population age around 3-4 years would decrease the lamb loss due to death.

Key Word: Akkaraman, Aksaray, Growth, Survival, Logistic Regression

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Relationships Between Body Weight and Live Body and Bone Measurements and Carcass Measurements and Characteristics in Male Awassi Lambs

Selim KUL[1*], İbrahim ŞEKER[1]

[1]Fırat University, Faculty of Veterinary Medicine, Department of Zootechny, Elazığ-TURKEY
*Corresponding author: skul81@gmail.com

Abstract

This study was carried out to determine the relationships between carcass characteristics and various body and bone measurements. At total of 25 male lamb was used in the study. The results showed there were statistically significant ($p<0.05$ to $p<0.01$) phenotypic correlations between body weight and live body and bone measurements (except chest width). Phenotypic correlations between body weight and carcass measurements varied between 0.18 and 0.75. However, correlations between body weight and chest depth, chest diameter, and pelvic width were not significant. On the other hand, the significant correlations observed between body weight and cold and warm carcassweights did not seem to provide a good indications for warm carcass percentage. Phenotypic correlations between live weight and bone and carcass measrements varied between -0.39 and 0.65. The correlations above 0.39 were statsitically significant ($p<0.05$ and $p<0.01$) level. Phenotypic correlations between carcass features and live weight and bone measurements were between -0.54 and 0.56 and the correlations placed between 0.40 and 0.51 were statsitically significant.
In conclusion, this study shows that body weight values might be used in determining of warm carcass weight and carcass body lenght. Similarly, following values of live body lenght for determining of warm carcass weight, body and total carcass fat weight, cidago height for determining of body weight, chest diameter for determining of body, warm carcass, and carcass total meat weights, cannon bone lenght for determining of body weight and carcass body lenght for determining of warm carcass percentage might be utilized.

Key Words: Body Weight, Body and Carcass Measurements, Awassi

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Dietary *Momordica charantia* Extract on Performance and Some Blood Parameters in Broiler

Güler YENİCE[1*]

[1]Atatürk Univ., Faculty of Vet. Medicine, Dept. of Animal Nutr. and Nutritional Disorders, Erzurum-TURKEY
*Corresponding author: gulerata@atauni.edu.tr

Abstract

Momordica charantia, rich in vitamins and minerals, is one of the most commonly reported medicinal plant. *Momordica charantia* has antidiabetic, antiviral, antimalarial, anthelmintic, antitumor and antimicrobial properties. The purpose of this study was to evaluate the effects of dietary supplementation at different levels of *Momordica charantia* extract (0, 0.15, 0.30, 0.45 g kg-1) on the performance, carcass yield and some blood parameters in Broiler. Ross 308 broilers (1-d-old) were allocated in 4 experimental treatments for 6 wk. Experimental data were analyzed using the General Linear Model (GLM)-Univariate procedure. *Momordica charantia* extract supplementations did not affect feed consumption, daily live weight gain, feed conversion efficiency and carcass yield. There was no difference in blood serum parameters except alkaline phosphatase (ALP), triglyceride (TG) and P levels among the groups. Serum P levels in high dose of *Momordica charantia* extract-treated group (0.45 g kg-1) significantly lower than the others groups ($P < 0.05$). Also, all of treatment groups showed varying degrees of reduction in serum ALP levels compared to control group. In conclusion, *Momordica charantia* extract no effects on performance in Broiler in the doses used in the study. It may also be necessary to compare different dose regimens.

Key Words: *Momordica charantia*, broiler, performance

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Heterologous Biosynthesis Approach to the Production of Zeaxanthin as an Animal Feed Additive

Venhar CELİK OZGEN[1*], Yasemin KUŞ[1]

[1]Department of Bioengineering, Faculty of Engineering, Firat University, Elazığ-TURKEY
*Corresponding author: venharcelik@firat.edu.tr

Abstract

Zeaxanthin is a natural, non-toxic, non-mutagenic carotenoid pigment that can be used as a coloring aid in animal feed additives. This high-value carotenoid provides yellow pigmentation to eggs and meat of poultry animals, and fish skin as well. Zeaxanthin is a food additive with pharmacological effects that is important for intake with various nutrients and regulates body metabolism in animals. Zeaxanthin has an increasingly disconcerting use as an additive ingredient and possesses a developing significance in industrial applications.
Through chemical synthesis and natural extraction from plants, zeaxanthin production is limited, low-yielding, and generally unable to meet market demands. This has led to the search for more profitable methods such as biotechnological production of zeaxanthin in microbial hosts. This production is accomplished by restructuring metabolic pathways in selected microbial systems, where microorganism acts as a factory for the target product. Zeaxanthin production can be achieved by microbial heterologous biosynthesis with metabolic engineering approach. Genes of the carotenoid pathway of the carotenogenic bacterium *Pantoea agglomerans* can be transferred to the *E. coli* bacteria to produce zeaxanthin. Heterologous biosynthesis of zeaxanthin is possible with both a recombinant strain and a novel approach for efficient zeaxanthin production at low cost. Metabolic engineering promises to enable the efficient production of various carotenoids by constructing different organism-based carotenoid pathway genes in selected hosts.

Key Words: Zeaxanthin, biosynthesis, animal feed additive

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of Poisson Regression Estimation Methods

Müslüme MEMİŞ[1*], Hasan ÖNDER[2]

[1]Atatürk University, Faculty of Agriculture, Department of Animal Science, Erzurum-TURKEY
[2]Ondokuz Mayıs University, Faculty of Agriculture, Department of Animal Science, Samsun-TURKEY
*Corresponding author: muslumememis@gmail.com

Abstract

This study aimed to guide the researchers for determining appropriate Poisson regression estimation method (Poisson Maximum Likelihood and Generalized Linear Model). In comparison of methods, artificial data were used with sample size of 100, 500 and 1000. It was concluded that there were no differences among parameter estimation methods in terms of goodness of fit. However, it was detected that generalized linear models method was more reliable than maximum likelihood method because maximum likelihood estimator produced high standard error for the parameters. In addition, generalized linear models were more reliable for small sample sizes because of estimated lover standard errors. As a result, it was suggested that generalized linear models should be used in Poisson regression analysis.

Key Words: Poisson regression, Generalized linear models; Maximum likelihood

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Importance of Pollen for Honey Bees and the Effects of Pollen Shortage

Duygu Gülru İZOL[1*], Gonca ÖZMEN ÖZBAKIR[2]

[1]Harran University, Grad. Sch. of Natural and Applied Sci., Department of Animal Science, Şanlıurfa-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Animal Science, Şanlıurfa-TURKEY
*Corresponding author: duyguizol@hotmail.com

Abstract

In this review study, importance of pollen for honey bee colonies and effects of pollen shortage were summarized. Honeybees need nectar, pollen and water to maintain their vital activities such as growth, development and reproduction, and to provide the winter nutrient needs of the colonies. Pollen, the male reproductive organs of plants, is the main protein source of the colony and is collected by the foragers and usually stored near to brood area. Pollen content also includes lipids, minerals and vitamins. Pollen, which plays an important role in the feeding of young and adult bees, directly affects the laying performance of the queen and the production of drones. For the production of royal jelly, which has a high protein content, it is necessary for the nurse bees to consume pollen. Its also important role for re-activation of colony in early spring. The most important factors affecting the pollen collection activity are the size of the unsealed brood area of the colony, the amount of stored pollen, the amount and quality of pollen resources, the number of foragers and division of labor. In case of insufficient pollen reservoir and shortage of pollen resources, it was reported early capping and shortening in larval period. However, cannibalism reveals among the nurse bees to provide protein need and to produce royal jelly for other larvae. Pollen deficiency is also effective factor in colony losses.

Key Words: Honey bee, pollen, pollen shortage, cannibalism

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Growth and Developing Traits of Dağlıç Ewes in Afyon

Tülay CANATAN YILMAZ[1]*, Necdet AKAY[1], Kürşat AKBULUT[1]

[1]Bahri Dagdas International Agricultural Research Institute, Konya – TURKEY
*Corresponding author: tulaycanatan @hotmail.com

Abstract

This study was carried out on 289 head Daglıc ewes and 303 head lambs obtained from sheep between February and March 2016 in the field Taşağıl Village of Bolvadin District of Afyon Province. İn this study, the body weights and the daily live weight gains of the lambs in various periods of Daglıc ewes were investigated. Adjusted means of the Daglıc lambs were 3.27±0.04, 7.55±0.09, 11.58±0.11, 15.97±0.12, 21.43±0.14, 26.15±0.15 and 31.15±0.17 kg for birth weight, live weight of, 30th, 60th, 90th (weaning), 120th, 150th and 180th days, respectively. The avarege daily weight gains of lambs were 141.19±1.19, 154.91±0.86, and 168.63±0.84 g for between birth-90th, birth-180th and 90th-180th day, respectively.

Key Words: Growth, Afyon, Daglıc, Ewes, Lamb

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Royal Jelly, Production and Usage Areas

Özlem BARITCI[1*], Gonca ÖZMEN ÖZBAKIR[2]

[1]Harran University, Grad. Sch. of Natural and Applied Sci., Department of Animal Science, Şanlıurfa-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Animal Science, Şanlıurfa-TURKEY
*Corresponding author: ekotek_51@hotmail.com

Abstract

Royal jelly is a valuable nutrient that plays an important role in the feeding of queen honey bee's larvae and other broods, secreted by the hypopharyngeal and mandibular glands of 5-12 day old workers. Royal jelly contains water, proteins, carbohydrates, lipids, minerals, vitamins, bioactive compounds such as 10-hydroxyl-2-decenoic acid. It also has a rich content of essential amino acids and B group vitamins.

The production of royal jelly depends on the well known of queen rearing techniques. Many factors effects the royal jelly production such as honey bee genotype, the power of the starter colonies, season, the age and number of the transferred larvae, the age of the nurse bees, the harvest interval and supplemental feeding to production colonies. In royal production one day old larvae are transferred to natural or artificial cells. Nurse worker bees starts to rearing queen. The maximum amount of royal jelly is produced after 3-4 days. Royal jelly is picked up with electric vacuum collectors, a plastic spoon or a wooden spoon and after harvesting stored in colored glass bottles in dark place at 0-5 °C.

A number of studies have been carried out on the biological and pharmacological effects of royal jelly. It has antibacterial, antiviral and fungicidal, bio-stimulating and anti-aging activity, immuno-modulating effects and a medicinal role in some diseases such as cardiovascular system, diabetes, cancer and reproductive disorders. In this review study, it was aimed to introduce the royal jelly production methods, harvesting and conservation as well as the usage areas of royal jelly in medicine and pharmacology.

Key Words: Honey bee, royal jelly, royal jelly production

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Current Situation of Beekeeping in the GAP Region, Problems and Suggestions

Şahin KARAHAN[1*]

[1]GAP Regional Office, GAPTEYAP, Şanlıurfa-TURKEY
*Corresponding author: karahansahin73@gmail.com

Abstract

In order to develop the beekeeping activities in the GAP provinces within the context of the Southeastern Anatolia Project-Agricultural Education and Publication project, the present situation, problems and proposals for solutions were examined. There are nine provinces in the Southeastern Anatolia region that have quite different beekeeping potentials in terms of their ecologic, climate and topographic characteristics. Technical beekeeping requirements are not yet implemented in our provinces, which have a significant potential for agriculture. Our beekeepers do not have enough technical knowledge to produce quality honey and other beekeeping products and do not have the economical power enough to hold consultants. The marketing of their products that they obtain in difficult conditions also emerges as a separate problem. Beekeepers' Unions, Agricultural Provincial Directorates and other institutions were visited in nine provinces in GAP region and information was exchanged on the current situation, problems and proposals in beekeeping. This study contains the beekeeping activities in region and the problems faced by beekeepers who are members of beekeeping association. As a result of the consultations made with the village meetings and related institutions, inventory studies made in the years of 2014-2017 will be carried out and necessary work will be done to increase the level of economic income of local people.

Key Words: Beekeeping in Gap provinces, Beekeeping problems and solutions

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Development of Beekeeping Activities in the GAP Region within Rural Development Projects

Şahin KARAHAN[1*], Celal KAYA[1], Reşat KÜÇÜK[1]

[1]GAP BKİ Regional Directorate, GAP-TEYAP, Şanlıurfa-TURKEY
*Corresponding author: karahansahin73@gmail.com

Abstract

In this study, the present socio-economic situation of conducted rural communities in the context of sustainable agriculture techniques within the context of rural development projects, Southeastern Anatolia Project (GAP-TEYAP) and Southeastern Anatolia Project-Agricultural Education and Extension projects carried out in Southeastern Anatolia Region, projects that are being carried out with the aim of developing beekeeping activities in the GAP provinces with the determination of the new areas of activity that generate their income in accordance with their potentials and ways of developing them. It is a region with a very different beekeeping potential in terms of ecological, climate and topographical features in the Southeastern Anatolia region. It has a significant potential for both traditional and organic beekeeping in grasslands with a rich, natural floral variety. Projects carried out in the scope of Rural Development Projects, Individual Projects and GAP-TEYAP Projects will be introduced to the beekeepers and honey producers associations operating in the Southeastern Anatolia Region. With these projects, we have been working on the production of quality honey, pollen, propolis, maintenance-nutrition and disease-pests with the improvement of working condition of our beekeepers and producers by giving positive contribution to the beekeeping activities on the improvement of regional beekeeping and increasing the level of economic income of local people.

Key Words: Beekeeping in the Gap region, Rural development, Beekeeping projects

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Crude Nutrient Content of Silages in Şanlıurfa Province

İbrahim Halil KİRKİZ[1], Ayfer BOZKURT KİRAZ[1*]

[1]The University of Harran, Faculty of Agriculture, Department of Animal Scinece, Şanlıurfa-TURKEY
*Corresponding author: ayferbozkurtkiraz@hotmail.com

Abstract

It is known that the feed fodder grown varies according to climate, soil and region. Research on the nutrient content of forage crops grown or preserved in the Şanlıurfa region or silage is limited. In this study, it was aimed to determine the nutrient contents of maise silages obtained from Akçakale, Birecik, Ceylanpınar, Haliliye1, Haliliye2, Hilvan, Siverek and Viranşehir Provinces of Şanlıurfa. For this purpose, pH, dry matter, crude protein, crude fat, crude ash, crude cellulose, NDF, ADF and Fleig scores were determined from different regions. In this study, pH values (3.74-4.36), DM% (28.52-30.76), CP (7.21-8.02) CF (1.94-2.17), CA (5.99-6.57), CC (24.76-26.63), NDF 46.10-50.49), ADF (27.84-32.53) and Fleig Score (93-117). Differences in pH, KM, and Fleig scores were found to be significant ($P<0.01$). As a result, the results obtained in the study suggest that the enterprises in the region are good at making maise silage and that animals are fed a balanced diet with regard to roughage.

Key Words: Forage, Maise silage, Nutrient

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Organic Acids in Barley Silage of Homofermentative and Heterofermentative Bacterial Inoculant Contribution

Ayfer BOZKURT KİRAZ[1*]

[1]The University of Harran, Faculty of Agriculture, Department of Animal Scinece, Şanlıurfa-TURKEY
*Corresponding author: ayferbozkurtkiraz@hotmail.com

Abstract

In recent years, bacteria cultures called as bacterial inoculants are being heavily used as silage additives. For our research, the semi-mature grain barley was used as silage material obtained from Sanliurfa province in Turkey. Silaj materials chopped in dimension of 1.5-2 cm and put in a 1.5 liter capacity special glass jars with clamp-cover system allowing only gas escape, and 3 replication was applied. In this study, four different barley silage treatment groups were prepared as control, IA (*Lactobacillus buchneri*), IB (*Lactobacillus plantarum*) and IM (*Lactobacillus buchneri + Lactobacillus plantarum*). Inoculants were added to silages at the level of 1.5x107 cfu/g. Analysed for organic acids at 60-day period. Lactic acid levels were determinated in as 35.4, 45.7, 48.1, 46.5 mg/ml respectiveliy. The differences in lactic acid levels between the groups in were significant. Propionic acid levels were detected as 24.4, 29.8, 42.6, 35.8, mg/ml respectively. The differences between groups were found significant. Acetic acid levels were not significantly between the groups. Butyric acid was not detected in silage groups. In conclusion the result obtained in the study showed that bacterial inoculant, inclusion especially to the barley silage improve feeding value.

Key Words: Barley Silage, Inoculant, Organic Acids

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Different Amounts of Additive Dried Basil (*Ocimum basilicum*) to Broiler Diets on Fattening Performance, Slaughter Characteristics and Biochemical Parameters

Osman BİLAL[1], Mehmet ÇETİN[2]

[1]Harran University Institute of Science, Sanliurfa-TURKEY
[2]Harran University Faculty of Agriculture Department of Zootechnics, Sanliurfa-TURKEY
*Corresponding author:

Abstract

This study was carried out to determine the effects of basil (*Ocimum basilicum*) plant added to different chick rations on fattening performance, cutting characteristics and blood parameters and oxidative stress. In the experiment, 60 Ross chick of broiler were used and the study lasted 42 days. Control and tree different basil doses (1%, 2%, 3%) constitute the experimental groups. There was no significant difference between the groups in terms of live weight, feed consumption and feed utilization in the 0-6 weeks period. There was a significant difference in the carcass, liver, stomach, pancreas and abdominal fat weights between the control and experimental groups in terms of heart weight ($P < 0.05$). There was a very significant difference ($P < 0.01$) in oxidative stress parameters between groups in terms of total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI) and lipid peroxidase (LOOH). The difference between the control and experimental groups in terms of alkaline phosphatase, total protein, albumin, globulin, total cholesterol, LDL and HDL cholesterol, lipase, amylase, calcium and phosphorus was not significant. There was a very significant difference ($P < 0.01$) in terms of triglyceride between groups and significant difference ($P < 0.05$) in potassium.

Key Words: Broiler, Basil (*Ocimum basilicum*), Performance, Slaughter Characteristics, Blood Parameters

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Polymorphism of Beta-Lactoglobulin Gene in Southern Anatolian Hair Goats

Selahaddin KİRAZ[1*]

[1]Harran University, Agricultural Faculty, Deparment of Animal Science, Sanliurfa-TURKEY
*Corresponding author: skiraz73@gmail.com

Abstract

This study was aimed to determine the polymorphism of β-lactoglobulin (β-LG) gene in Hair goats in Adıyaman, Mardin and Şanlıurfa regions. β-LG is the major whey protein in ruminant milk. DNA isolation was performed using genomic DNA isolation kit from Hair goats without kinship. PCR-RFLP analysis was performed of β-LG gene. PCR products of β-LG gene were obtained for all goats with a length of 426 bp. PCR products were cut with the SacII restriction enzyme. β-LG genetic variants, gene and genotype frequencies were determined by direct counting method. The Hardy-Weinberg equilibrium (HWE) is determined by the Chi-square (x2) test. Bands with lengths of 426 bp (AA), 426, 349, 77 bp (AB), 349, 77 bp (BB) were detected as a result of cleavage of PCR product by SacII enzyme. β-LGA allele frequencies were; 0.77, 0.65 and 0.62, β-LGB allele frequencies were calculated as 0.23, 0.35 and 0.38 In Adıyaman, Mardin and Şanlıurfa Hair goats, respectively. Genotype frequencies were calculated; 0.58, 0.42 and 0.34 for β-LGAA, 0.38, 0.46 and 0.58 for β-LGAB, 0.04, 0.12 and 0.08 for β-LGBB, respectively. Genotype distributions of β-LG were in HWE.

Key Words: β-lactoglobulin, Goat, Polymorphism

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Phylogenetic Analyse of Red Karaman Sheep Based on Mitochondrial Cytochrome B Gene

Selahaddin KİRAZ[1*]

[1]Harran University, Agricultural Faculty, Deparment of Animal Science, Sanliurfa-TURKEY
*Corresponding author: skiraz73@gmail.com

Abstract

In this research, determination of phylogenetic tree of Red Karaman sheep using molecular techniques was the main goal. Red Karaman sheep breed, raised in Bingöl province were used as the animal materials. Genomic DNAs were isolated in all the samples. Primers were designed to amplify mitochondrial Cytochrome b (CYTB) gene region. CYTB gene region were amplified by applying polymerase chain reaction (PCR) technique, and gene sequence information of PCR products were obtained. In phylogenetic analyses; UPGMA (Un-weighted Pair Group Method with Arithmetic mean) method were used to show the phylogenetic relationship in sheep. In Red Karaman sheep, DNA polymorphism based on CYTB gene sequence, total number of site, the rate of G+C, , number of haplotype, haplotype diversity and nucleotide diversity values were found to be 450, 0.448, 10, 7, 0.784±0.0128 and 0.00648±0.00032, respectively. Red Karaman haplotypes, genetic distance between haplotypes ranged from 0.00264-0.01560. Phylogenetic tree formed in this research using haplotype sequences and reference sequences (A, B, C, D and E lineage), 4 haplotypes were in B lineage, 1 haplotype were in A lineage, 2 haplotypes were in C lineage. In conclusion, in Red Karaman sheep, DNA sequences of CYTB gene were determined. Based on gene sequences information, in Red Karaman sheep, phylogenetic relationship among mtDNA haplotypes and haplogroups

Key Words: Red Karaman sheep, mtDNA, Phylogenetics

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Beekeeping in Adıyaman, Progress and Targets

Atilla ÖZTOKMAK[1*], Gonca ÖZMEN ÖZBAKIR[2]

[1]Directorate of Research Institute for Hard-shelled Fruits, Adıyaman-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Animal Science, Şanlıurfa-TURKEY
*Corresponding author: atilla.oztokmak@tarim.gov.tr

Abstract

In this study, it was aimed to introduce beekeeping projects carried out in Adıyaman, which have made significant progress in beekeeping in the Southeastern provinces in recent years, and to introduce targets for increasing productivity. Income from beekeeping is not provided only beekeeping products but also contributes on rural development and pollination. Since Adıyaman has both mountainous and plain forms geographically, its provide floral diversity and opportunity to migratory beekeeping within the province to beekeepers. Almond cultivation, which takes place in the production of tobacco, will become more efficient with beekeeping. In the last three years, six beekeeping projects have been initiated which supported by various institutions throughout the province. These beekeeping projects include beekeeping techniques, queen breeding, diseases and pests control, trainings to increase knowledge and experience of beekeepers. Within the scope of another project including training seminars on organic beekeeping, 54 beekeepers has started organic production, and 43 beekeepers are in transition period. While the average honey yield of the province is 6-8 kg/colony for many years, as a result of beekeeping trainings honey yield has reached 13 kg/colony. It has been observed that the beekeepers are keen to transfer these training seminars to practice. The success achieved in beekeeping is hopeful in Adıyaman province, but new projects and trainings should be carried out on issues such as productivity, queen quality, establishing honey forests and grasslands, fight against fake honeys. It should be planned to expand the production of other beekeeping products such as pollen, royal jelly, propolis and bee venom.

Key Words: Beekeeping in Adıyaman, beekeeping projects, beekeeping targets

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Breed and Lactation Period on Composition and Somatic Cell Count of Goat Milk

Fusun COSKUN[1*]

[1]Ahi Evran University, Faculty of Agriculture, Department of Animal Science, 40100 Kırşehir-TURKEY
*Corresponding author: fusun.coskun@ahievran.edu.tr

Abstract

This study was carried out to determine the effect of breed and lactation period on milk composition (fat, protein, lactose, non-fat dry matter (NFDM), density, mineral and freezing point) and somatic cell count (SCC) of the goats reared at semi-intensive production system in Kirsehir province. For this purpose, research data was collected from 16 Saanen, 24 Damascus and 45 Maltese breeds during 5 lactation period (months). The overall means were 5,02% fat, 4,09% protein, 4,38% lactose, 13,21% NFDM, 1,03 density, 1,03% mineral, -0,57 C ° freezing point and 1.024.892 cells/ml SCC, respectively. As a result of analysis it was concluded that the breed and lactation period both have significant effect on milk composition and SCC (P<0,01). When the means of groups were compared, results showed that there was not any significant effect of breed and lactation period on NFDM. However, Maltese breed had highest value for fat, protein, lactose and density according to Saanen and Damascus breed (P<0,05). Saanen breed had highest mineral and lowest protein and fat values (P<0,05). The lowest SSC was determined for Maltese breed (P<0,05) but there was no statistically significant difference between Saanen and Damascus breed. SCC increased steadily from the beginning to the end of lactation period. Lactose, protein and fat had the lowest value at second month of lactation period (P<0,05).

Key Words: Maltese; Damascus; Saanen; Somatic cell count (SCC); Milk composition

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Can Goose Raising an Alternative Poultry Sector for GAP Region?

Cavit ARSLAN[1*]

[1]Selcuk Univ., Faculty of Veterinary Medicine, Dept. of Animal Nutr. and Nutr. Diseases, Konya-TURKEY
*Corresponding author: cavitarslan@selcuk.edu.tr.

Abstract

Goose is raising all over the world and also in Turkey. But, goose raising does not common in Turkey. Extensive goose raising is made on especially North East of the Turkey, but geese can be raising different geographic and climatic condition. Goose breeding is easier than other poultry breeding. Dissemination of goose breeding can help close red meat in Turkey. Goose meat is a different flavour; it can be a pretty good alternative for people who want different flavourful meats. Goose breeding can be an alternative source of economic benefit for people who will do this work. In this study, it has been given information on the importance of goose raising, digestive system of goose, using feeds in goose nutrition and the aim of goose raising. In addition, after emphasizing the advantageous aspects for goose raising in the GAP region, it is emphasized that goose raising may be an alternative poultry raising or not for GAP region.

Key Words: Goose raising, GAP region

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Study the Effect of Substituting Maze with Syrian or Athobia Sorghum Upon the Layer Performance

Mohammed Ibrahim Ahmed ALNUAİMİ[1], Ilham Noraddin EZADDİN[1], Mohammed Sabah Baha ALDEEN[1]*

[1]Department of animal production university of Kirkuk College of Agriculture Kirkuk/Iraq
*Corresponding author: mo_ha_mm_ed_sa@yahoo.com

Abstract

The aim of this study was to determine the effect of substituting maize (yellow corn) with Syrian or Athobia sorghum grains supplemented with 25% of methionine above of nutritional requirements according to NRC (1994) upon the 150 ISA Brown layer performance. These birds were separated into five diet groups with three replicates (pens: 2*1.5m) of 30 layers for each one. A control diet with 50% corn (T1), diet with 50% Syrian sorghum (T2), diet with 50% Athobia sorghum (T3), diet with 50% Syrian sorghum + 25% of methionine above the requirement (T4), and diet with 50% Athobia sorghum + 25% of methionine above the requirement (T5). No significant differences observed among the treatment for the egg production (80.31, 77.88, 78.72, 77.32 and81.90% as Hen Day), egg weight (64.16, 64.66, 62.83, 66.5 and 64.0 gms) and feed consumption (118, 124, 124, 119 and 113 gms) while daily egg mass (gm) for hens of the T5 was significantly better than T1, T2, T3 and T4. The ability of the layers of T5 were significantly ($p \leq 0.05$) better than another treatment's for the feed, energy, protein, methionine, total and lysine conversion to egg. Corn Substituting by Athobia sorghum supplemented with 25% of methionine above the nutritional requirement without any negative effects upon the Barry layer's performance.

Key Words: Sorghum; Maize; Layer; Methionine; Egg Production

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Bulky Feeds in the Intensive Fattening of Goslings: I. Effects of Grass, Alfalfa and Sugar Beet Pulp on Growth, Slaughter Performance and Some Blood Parameters in Geese

Cavit ARSLAN[1*], Mustafa SAATCI[2]

[1]Department of Animal Nutrition, Faculty of Veterinary Medicine, University of Selçuk, Konya-TURKEY
[2]Dept. of Animal Science, Faculty of Agricultural, University of Muğla Sıtkı Koçman, Fethiye/Muğla-TURKEY
*Corresponding author: carslan42@hotmail.com

Abstract

The study was intended to investigate effect of alfalfa, grass and dried sugar beet pulp meal on growth performance, carcass traits and serum parameters in Turkish native geese. One hundred a-day old goslings were divided into 10 equal groups. The study lasted for 12 weeks, first 6 weeks as starter period and the last 6 weeks as grower period. At the end of the study six randomly selected geese were slaughtered. Starter and grower diets were replaced by 5, 10 and 15 % alfalfa meal (Group II-IV), grass meal (Group V-VII) and dried sugar beet pulp meal (group VIII-X) during the starter period and 10, 20 and 30 % the grower period. These diets were tested in a control group fed only concentrate (Group I). Final live weights geese were found to be 3.64, 3.67, 3.11, 3.18, 3.66, 3.63, 3.52, 3.67, 3.41 and 3.01 kg in groups, respectively. Diet replacement by 5-10 % of alfalfa, grass and sugar beet pulp at starter and grower period did not significantly affect live weight. Feeding regime did significantly affect carcass yield. Diet replacement by alfalfa, grass and sugar beet pulp significantly decreased both mesenterial and abdominal fat percentage as compared to control. Serum cholesterol, total lipid, total protein and albumin levels were significantly decreased and AST, ALT levels were significantly increased by bulky feed replacement. Although there was no constant trend between the group in terms of glucose and triglycerid a statistically significant differences were observed.

Key Words: Goose, bulky feeds, growth performance, carcass traits, blood parameters

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Bulky Feeds in the Intensive Fattening of Gosling : II. Effects of Alfalfa, Grass and Sugar Beet Pulp on Abdominal Fat Pattern and Ceacal Volatile Fatty Acid Composition in Geese

Cavit ARSLAN[1*]

[1]Department of Animal Nutrition, Faculty of Veterinary Medicine, Selçuk University, Konya-TURKEY
*Corresponding author: carslan42@hotmail.com

Abstract

Abstract: This study was intended to investigate effect of inclusion of alfalfa, grass and dried sugar beet pulp meal in feed mixtures on the fatty acid composition of the abdominal fat and the ceacal content of Turkish native geese. One hundred, one day old unsexing goslings were divided into 10 equal groups. The study lasted for 12 weeks, the first 6 weeks as starter period and the last 6 weeks as grower period. The starter and grower diet were replaced by 5, 10 and 15 % alfalfa meal (Group II-IV), grass meal (Group V-VII) and dried sugar beet pulp meal (group VIII-X) during the starter period and 10, 20 and 30 % at grower period, respectively. These diets were tested in comparison to a control group fed only concentrate (Group I). At the end of the study five randomly selected geese were slaughtered and ceacal content and abdominal fat samples were taken. Inclusion of alfalfa, grass and sugar beet pulp significantly increased total saturated fatty acids, while decreased total monounsaturated fatty acids. Inclusion of alfalfa and grass meal in the diet caused a significant increase in polyunsaturated fatty acids except for group II, while sugar beet pulp had no significant effect on polyunsaturated fatty acids when compared with the control. Inclusion of alfalfa, grass and sugar beet pulp significantly increased ceacal acetic percentage, but did not affect butyric and propionic acid percentage.

Key Words: Goose, bulky feeds, abdominal fat composition, ceacum volatile fatty acids

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

First Three Lactations Milk Yield of Different Genotype Goats

Hakan ERDURAN[1*], Birol DAĞ[2]

[1]Bahri Dağdaş International Agricultural Research, Konya-TURKEY
[2]Selçuk University, Faculty of Agricultural, Department of Animal Science, Konya-TURKEY
*Corresponding author: herduran42@hotmail.com

Abstract

This study was carried out to compare milk production traits of and indigenous Hair, Alpine × Hair F1 (AHF1), Alpine × Hair F2 (AHF2), Alpine × Hair B1 (AHB1), Saanen × Hair F1 (SHF1), Saanen × Hair F2 (SHF2) and Saanen × Hair B1 (SHB1) crossbred goats that raised in a private farm in Konya under extensive conditions.
The effects genotype and parity on milk yields and composition of goats were analysed with the Least Squares Meeans Method. The milk yield traits of goats were calculated by using the Fleischmann method for investigating milking.
At the lactation milk yields, lactation lengths and average daily milk yields Hair, AHF1, AHF2, AHB1, SHF1, SHF2 and SHB1 crossbred goats at first three lactations were 132.0 kg, 172.3 kg, 169.3 kg, 186.4 kg, 190.2 kg, 176.3 kg and 172.0 kg; 189 days, 204 days, 202 days, 208 days, 201 days, 199 days and 205 days; 699 g, 840 g, 837 g, 888 g, 878 g, 865 g and 926 g respectively.
Average milk fat, protein and lactose percentages of Hair, AHF1, AHF2, AHB1, SHF1, SHF2 and SHB1 goats at their first three lactations were 5.07%, 4.75%, 4.82%, 4.99%, 4.60%, 4.39% and 4.55%; 3.93%, 3.87%, 3.83%, 3.78%, 3.79%, 3.76% and 3.74%; 5.53%, 5.54%, 5.54%, 5.46%, 5.52%, 5.51% and 5.46% respectively. The effect of genotype on lactation milk yield and average daily milk yields ($P<0.01$) lactation length and protein percentages ($P<0.05$) were significant.
It can be said that, lactation milk yield traits of Hair goats may be increased by crossbreeding.

Key Words: Alpine, Hair (Kıl) goat, milk yield, milk composition, Saanen

Acknowledgements: This study was supported by GDARP (General Directorate of Agricultural Research and Policy, Project No: TAGEM/HAYSÜD/2015/A07/P-01//02).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Kilis Goat Breeding Programme and Some Yield Parameters in Farm Condition

Mahmut KESKİN[1*], Sabri GÜL[1], İrfan DAŞKIRAN[2], Zuhal GÜNDÜZ[1], Osman BİÇER[1], Sedat BEHREM[2]

[1]Mustafa Kemal University Faculty of Agriculture, Department of Animal Science, Hatay-TURKEY
[2]Republic of Turkey Ministry of Food, Agriculture and Livestock, Ankara-TURKEY
*Corresponding author: mkeskinmku@gmail.com

Abstract

National Sheep and Goat Breeding project is getting implemented in whole Turkey by MoFAL with Universities, Research Institutes, Sheep&Goat Breeder Associations and breeders. Kilis Goat Breeding project is sub project and it is getting executed in Kilis and Gaziantep provinces of Turkey with Sheep and Goat Breeders' Associations for seven years. Goat flocks of the project animal materials which belong to the breeders are divided into two groups, as base and elite. Elite flocks have mating, ear tag, birth weight and weaning weight and some lactation data but base flocks have only some limited data like as weight, weaning and ear tag number. Birth type, litter size, birth weight, weaning weight (at 60 days years old), two milking control during March and May period were made in both groups. The index value is calculated for each kid using this data and the kids are selected as breeders according to these index values. In the elite flocks, milk control is also performed during lactation and lactation duration and lactation milk yield are calculated. In addition to these studies, some yield characteristics from the Kilis goats in the project area have been identified. According to these; in the period of 2013-2015, as year average, they were changed that birth rates were from 87.3% to 90.0%, litter sizes were from 1.23 to 1.36, the birth weights were from 3.4 ± 0.03 to 3.7 ± 0.05, the weaning weights were from 11.9 ± 0.08 to 12.8 ± 0.08, lactation length were from 207.1 ± 0.75 to 232.4 ± 0.65, and lactation milk yields were from 315.7 ± 4.16 and 375.6 ± 3.40. It has also been stated that supplemental feeding improves reproductive and milk yield characteristics in this breed.

Key Words: Lactation, birth weight, weaning weight

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Using of Robotic Systems in Animal Production

Muhammet Hanifi SELVİ[1*], İbrahimTAPKI[1], Yusuf Ziya GÜZEY[1]

[1]Mustafa Kemal University Faculty of Agriculture, Department of Animal Science, Hatay-TURKEY
*Corresponding author: mselvi1453@gmail.com

Abstract

Due to the increase in human population, the need for animal products has increased day by day. In order to increase the quantity of the product, animal welfare is neglected and very large genetic progresses are provided. But as people's well-being increases, they tend to natural products, and animal welfare becomes very important. The technologies used in livestock production are based on animal welfare level. In this study, it was aimed to evaluate the advantages and disadvantages of these new technologies presented to the breeding and the contributions to animal welfare.

Key Words: Robotic systems, animal welfare, advances in animal husbandry

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Problems of Nomadic Goat Breeders and Their Effects on Forest

Eyyüp KARAGÖL[1], Mahmut KESKİN[2*]

[1]Repuclic of Turkey General Directorate of Forestry, Forest Management Directorate in Sanliurfa, TURKEY
[2]Mustafa Kemal University Faculty of Agriculture, Department of Animal Science, Hatay-TURKEY
*Corresponding author: mkeskin@mku.edu.tr

Abstract

This study was carried out to evaluate the relationship between goat breeders and forests with the perspectives of breeders and forestry officers and to develop some solution proposals on the issues expressed as problems. The material of the study was the forest guard officers and forestry technicians who are the personnel of the Sanliurfa-Mardin-Diyarbakır Forestry Directorates and the families of the nomadic people who stayed in Karacadağ and Karacurun areas in the province of Viranşehir in Şanlıurfa. At least half of the nomadic families, the number of which is 19, in the area and all personnel working in the Forestry Management Department were surveyed. The results showed that 57.9% of the goat breeders were illiterate or primary school graduates, 52.6% and 100.0% of them preferred Zom sheep and hair goat, respectively and all of them did not give any additional feed to the animals except the winter season. At the end of the study it was reported that when the goat was grazed uncontrollably it could be harmful to the areas where young trees were found but it would be beneficial to the forest when grazing in areas with large trees.

Key Word: Hair goat, milk products, nomads

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Laying Period on Egg Quality Traits of Linda Geese Reared under Local Breeder Conditions

Mehmet SARI[1*], Kadir Emre BUĞDAYCI[2], Aykut Asım AKBAŞ[3], Mustafa SAATCI[4], Mustafa Numan OĞUZ[2]

[1]Ahi Evran University, Agriculture Faculty, Department of Animal Science, Kırşehir-TURKEY
[2]Mehmet Akif Ersoy Univ., Faculty of Vet. Med., Dept. of Animal Nutrition and Nutr. Dis., Burdur-TURKEY
[3]Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Animal Science Dept., Burdur-TURKEY
[4]Muğla Sıtkı Koçman University, Agriculture Faculty, Department of Animal Science, Muğla-TURKEY
*Corresponding author: msari_40@hotmail.com

Abstract

The study was conducted to determine the effect of laying period on egg quality traits of Linda geese reared under local breeder conditions. For this purpose, egg quality traits were examined by randomly taking a total of 90 eggs including 31 on the 45th day, 30 in 60th day, and 29 in 75th day of laying period from 375 female Linda geese aged 3 years. Geese were fed *ad libitum* with a feed that is mixture of industrial by-products containing 7.87% raw protein and 1562.05 kcal/kg KM metabolizable energy during laying period and additional feeding was also provided periodically under semi intensive conditions. The effect of laying period on external quality traits of eggs was determined to be statistically insignificant (P>0.05). The effect of laying period on yolk height, yolk diameter, yolk index, albumen length, albumen width, and albumen index from internal quality traits was statistically significant (P<0.05). The eggs collected on 45th day had higher values compared to eggs obtained on the other days considering yolk height, yolk diameter, yolk index, and albumen length and albumen width. These results are the first data for identification of egg quality traits in Linda geese reared in Turkey. It was concluded that quality of eggs obtained on the 45th day of laying period was higher compared to the other two control days in terms of internal traits.

Key Words: Linda geese, egg quality, laying period

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Usage of Energized Oxygen Gas as an Alternative Disinfection Product on Hatching Eggs

Mehmet SARI[1*], Özlem ŞAHAN YAPICIER[2], Zafer USTA[3], Mustafa SAATCI[4]

[1]Ahi Evran University, Agriculture Faculty, Department of Animal Science, Kırşehir-TURKEY
[2]Mehmet Akif Ersoy University, Veterinary Medicine Faculty, Department of Microbiology, Burdur-TURKEY
[3]Mehmet Akif Ersoy Univ., Veterinary Medicine Faculty, Department of Animal Science, Burdur-TURKEY
[4]Muğla Sıtkı Koçman University, Agriculture Faculty, Department of Animal Science, Muğla-TURKEY
*Corresponding author: msari_40@hotmail.com

Abstract

Study was carried out to determine the effects of energized oxygen and formaldehyde gas on the disinfection, incubation, hatching and chick development. 90 Ross broiler eggs from 30-week parents were used in this experiment. The eggs in the first group were treated with energized oxygen gas and formaldehyde gas was applied to the second group. Total aerobic bacteria, total yeast / fungi and total *E. coli* counts were not found in both groups after the applications. The effects of energized oxygen gas on egg weight loss and hatching time were significant ($P<0.05$). It was determined that the effects of energized oxygen gas on the hatchability of fertile eggs, embryonic mortality rates chicken's live weights, chick body lengths and Pasgar score were not significant ($P>0.05$). It has been determined that there is no side effect of energized oxygen gas on eggs and chicks. Therefore, it can be used instead of formaldehyde gas in poultry sector.

Key Words: Chick, egg, energized oxygen, formaldehyde, incubation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Different Doses of Propolis on Performance Index, Physical Structure of Carcass, Some of Blood Biochemical Parameters and Sensory Traits of Awassi Lambs

Hatem H. SALEH[1*], Sarmad T. ABDULAZEEZ[1]

[1]University of Kirkuk, College of Agriculture, Department of Animal Production- IRAQ
*Corresponding author: Hatem19602013@yahoo.com

Abstract

This study was aimed to evaluate the effect of different doses of propolis on performance index, physical structure of carcass, some of blood parameters and sensory evaluation of lambs. Lambs were divided randomly into four groups. First group was considered as control, second, third and fourth groups were treated with different doses of propolis at 10, 20 and 30 ml daily respectively for 63 days. The measurements were carried out on live lambs and their carcass. The results showed that lambs were treated with 20 and 30 ml propolis dosed recorded a higher ($P \leq 0.05$) performance index, daily gain weight with improvement of feed conversation ratio, also higher ($P \leq 0.05$) total protein, albumin and globulin concentrations as compared with control lambs and other groups. The results were recorded a higher ($P \leq 0.05$) proportion of lean meat and lower ($P \leq 0.05$) proportion of fat with improvement of sensory traits of lambs received 30 ml of propolis doses as compared with control lambs and other groups. It could be concluded that propolis is could be improved of lamb performance and quality of carcass of lambs.

Key Words: Awassi lambs, propolis, performance of lambs, structure of carcass, blood parameters, sensory evaluation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Using Green or Black Tea Powder in the Local Japanese Quail Diets Supplemented With or Without Probiotic upon the Performance and Carcass Traits

Mohammed Ibrahim Ahmed AL-NUAIMI[1], Rashid Hasan HAMEED[1], Ismail Younus Hasan AL-HADEEDY[1*]

[1]Animal production department, Collage of Agriculture, Kirkuk University, IRAQ
*Corresponding author: ismail.yunis2018@gmail.com

Abstract

A total 210 unsexed local Japanese quail chicks aged 10 days were assigned to 6 treatments in a completely randomized design. Each treatment had 7 replicates (cages in the multi floor battery for quail husbandry) accommodating 5 birds per replication. The six dietary treatments were: 1) control diet 2) T1 + 0.1 % probiotic, 3) T1 containing 2% green tea powder (GTP), 4) T1 containing 2% black tea powder (BTP), 5) T3 + 0.1 % probiotic and 6) T4 + 0.1 % probiotic. The period of this experiment was 35 days. Weight gain of the quails fed T5 was significantly ($p \leq 0.05$) increased 22.41% compared to T1. Feed intake of quails was significantly ($p \leq 0.05$) reduced 10.73%, 9.55% and 10.80% for quails fed T3, T4 and T6 respectively compared to T1. Ability of conversion ratio of feed, protein, energy, methionine and lysine for all experiment birds fed dietary treatments 2, 3, 4, 5 and 6 were significantly ($p \leq 0.05$) better than the birds fed control diet. The difference in the carcass traits among the experiment dietary treatments was no significant.

Key Words: Green tea, black tea, quail, probiotic, carcass traits

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Position of Turkey at International Honey Trade

Gökhan AKDENİZ[1*]

[1]Ministry of food, Agriculture and Livestock, Apiculture Research Institute Department, Ordu-TURKEY
*Corresponding author: gokhan.akdeniz@tarim.gov.tr

Abstract

The honey exportation as 634.249 tones was made over The World in 2016. The countries which are the determinant at the honey exportation are China with the sharing of 20% and Argentina with the sharing of 13%. Turkey represent 0,56% of the honey which is exportes over The World. Turkey exported 6.448 tones honey to 42 countries in total as 2.886 tones in America and 2.199 tones to Germany in 2017, and it monetised 23 Million 385 thousand dollar.

In this study, The World's honey exportation and importation amount and values, the countries which are determinant at the importation and exportation, the countries' market that we have the exportation with them and Turkey's place in the foreign trading will be evaluated statistically and the strategical steps that we need to take for the increase of our honey exportation will be discussed.

Key Words: Honey, Imports, Export, Turkey, World

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Research on Customer Behaviours Determination Concerning Bee Products in Southeast Anatolian Region

Gökhan AKDENİZ[1]*, Şeref CINBIRTOĞLU[1], Vedat CEYHAN[2]

[1]Ministry of food, Agriculture and Livestock, Apiculture Research Institute Department, Ordu-TURKEY
[2]Ondokuz Mayıs University, Faculty of Agriculture, Department of Agricultural Economics, Samsun-TURKEY
*Corresponding author: gokhan.akdeniz@tarim.gov.tr

Abstract

In this study, the bee products' recognition and the determination of consumption behaviors were aimed. The provinces were determined in the research first as the population numbers which represent the 7 geographical regions in Turkey were considered. Accordingly, Istanbul, Bursa, Izmir, Manisa, Ankara, Konya, Van, Erzurum, Gaziantep, Sanliurfa, Adana, Antalya, Samsun and Trabzon, which are the provinces, were chosen. The survey was made with 1.834 consumers in total in all the provinces as 234 participants from Gaziantep and Sanliurfa which represent Southern East Anatolia Region. The arithmetic and weighted means, the frequemcy tables were used with the main statistical transactions such as the ratio and percentage in the analysis evaluation of the data which was obtained from the households who participated into the survey.
90,58% of the participants in Southern East Anatolia Region stated that they consume the honey in their daily life but 9,41% of them stated that they don't consume the honey. 65,70% of the consumers consume the extracted honey, 15,00% of them consume the honey with comb, 19,30 of them comsume both of them. 89,19% of the consımers consume the honey in the mornings, 1,08% of them consume the honey before the sleeping and 9,19% of them consume the honey more than one time in a day. 37,50 % of the consumers stated that they consume the honey everyday, 25% of them stated that they consume the honey once in a few days and 37,50% of them stated that they consume the honey sometimes. 50,00% of the consumers buy the honey from the bee breeders 43,05% of them buy the honey from the market and 6,95% of them buy the honey from the different places (such as the district bazaars, acquaintances). 48,81% of the consumers stated the factors to buy the honey with a brand as they think that it is more reliable than the others, 17,68% of them stated their reasons as they find it easily, 28,76 % of them stated their reasons as it has got a label with the explanatory information and 5.4,75% of them stated their reasons with the other factors. 51,09% of the consumers stated the factors to but the honey without any brand as they think that it is more natural and reliable than the others, 20,65% % of them stated their reasons as they can find it easily, 25,18% of them stated their reasons as it is cheaper than the others and 3,08% of them stated their reasons with the other factors. When the consumers were asked about what the packing type is as their preference to buy the honey, 72,16% of them answered as the glass packing, 17,05% of them answered as the tin packing, 2,27% of them answered as the plastic packing and 8,52% of them answerd as the other packings. 85,71% of the consumers stated that they prefer the flower honey, 2,20 % of them stated that they prefer the honeydew honey, 6,59% of them stated that they prefer the chestnut honey and 5,49% of them stated that they prefer the other monofloral honey (citrus, sunflower, acacia, lavender and cotton). 7,92% of the consumers stated that they consume one or a few of the other bee products except from the honey but 92,08% of them stated that they don't consume any bee products except from the honey..
In the study that the consumers' consumption habit for the bee products in Southern East Anatolia Region was reviewed, the recognition of the other bee products except from the honey and their lower consumption ratio rather than the other regions were revealed.

Key Words: Honey, Pollen, Royal jelly, Customer Behaviours

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Probiotic (*Bacillus* sp.) Addition on Growth Performance from 1 to 21 Days in Japanese Quails (*Couturnix Couturnix Japonica*)

Cahit ÖZCAN[1*]

[1]Siirt Univ. Veterinary Medicine Fac., Department of Hayvan Besleme ve Beslenme Hastalıkları, Siirt-TURKEY
*Corresponding author: cahitozcan@siirt.edu.tr

Abstract

This study was conducted to examine the effect of probiotics used in various forms of feed additives on fattening performance and feed conversion during 1-21 days of Japanese quail. The study used Japanese quail chickens in 750 mixed sexes per day. Four main groups were separated: chick control, positive control (100 mg/kg antibiotic supplement), DI (0.25 ml/l addition to drinking water) and DII (0.5 g/kg supplement). Each main group was divided into 5 subgroups. The research lasted 21 days. 24 hours of lighting was done during the research. While on the 7th day of the study, on days 14 and 21, there was no statistically significant difference between the groups, the control group was significantly higher than the experimental groups ($P < 0.01$). The highest CAA on day 14 was found in the DI group ($P < 0.001$), with no significant difference between the groups on days 7 and 21 in terms of mass gain. On day 7 and 21 in terms of feed consumption, the groups were similar, while the lowest feed consumption was recorded on the 14th day in the DII group ($P < 0.05$). The lowest feed intake per day was found in the control group ($P < 0.01$), while there was no significant difference between the groups on days 7 and 21 in terms of feed conversion.
It was therefore concluded that the use of probiotics as feed additives in quail had no positive effect in the first 21 days.

Key Words: Quail, Probiotic, Growth performance, *Bacillus subtilis*

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Mineral Composition of Fodder Crops and the Effectiveness of Mineral Supplementation for Cattle Diets in Ukrainian Steppe

Mykola KHARYTONOV[1*], Petro ANTONENKO[1]

[1]Dnipro State Agrarian and Economic University, Sergiya Yefremova st., 25, Dnipro-UKRAINE
*Corresponding author: kharytonov.m.m@dsau.dp.ua

Abstract

The purpose of this study was (i) to determine the macro- and microelements content of local forages, (ii) to establish the effectiveness of mineral supplementation for cattle in different agricultural districts of Ukrainian steppe. The legume grass have calcium surplus 4-5 times. However cereal forages, root - crops and cereal grain can not to provide biotic requirements for cattle at the trace elements. The phosphorus content is sufficiently in fodder grains only. The magnesium content in native grasses and roughage forages are concerning to ruminants requirements (2.5-5 g/kg of ration). K / Ca + Mg ratio is within 2.2 in local forages. The permanent iron surplus is 2-10 times in fodder crops. The provision of forages with copper and manganese are over mean requirements for cattle. At the same time, at all widely used feed ingredients were discovered permanent deficit on zinc, cobalt and iodine. The information of fodder mineral composition was compared to accepted requirements for cattle and used to predict areas of potential nutrient imbalance. Three experiments with cattle of red steppe breed were carried out at the several agricultural districts. The mineral supplementation weight effect for cattle groups was 6-33 %. Evidently that difference on weight additions of experiment animals were connected with elements correlation of the mineral supplementation and environmental peculiarities. Bigger effect was received when trace elements deficiency correction has been done on the maximum of nutrition requirements of cattle.

Key Words: Forage, supplements, cattle, weight, growth

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Delivering Methionine to Laying Hens in Drinking Water

Sahin CADIRCI[1*]

[1]University of Karabük, Vocational School of Eflani, Karabük-TURKEY
*Corresponding author: scadirciuk@yahoo.co.uk

Abstract

An experiment was conducted to study the effects of water-soluble DL-methionine supplied through water on the performance of laying hens. Two diet formulations were used in an experiment. For Diet 1 nutrient specifications were set to meet or exceed requirements, whereas Diet 2 was essentially Diet 1 without supplemental methionine. Birds were divided into seven groups of equal number. Group 1 received Diet 1 and normal water. Group 2, 3 and 4 received Diet 2 and supplemental methionine added in feed and normal water (0.025% for group 2; 0.050% for group 3; 0.100% for group 4). In addition, Group 5, 6 and 7 received Diet 2 and methionine treated water (0.025% for group 5; 0.050% for group 6; 0.100% for group 7). There were significant differences in egg weight, egg production, egg mass, feed intake, water intake, feed conversation ratio and methionine intake between the groups, whereas no significant differences were observed between the the way of delivering methionine. The results suggest that the source of methionine does not influence its metabolic effect. Thus, it seems that methionine from the water is "as good as" when supplied wholly from the feed.

Key Words: Laying hen; Feed intake; Water intake; Methionine; Egg production

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Feeding with Safflower Seed Added Mixed Feed on the Cholesterol Level of Eggs

Yasin YAKAR[1*], Yener TEKELİ[2], Abdurrahman AKTÜMSEK[3]

[1]Department of Food Engineering, Faculty of Engineering, Harran University, Şanlıurfa-TURKEY
[2]Faculty of Pharmacy, Adıyaman University, Adıyaman-TURKEY
[3]Deparment of Biology, Faculty of Sciences, Selçuk University, Konya-TURKEY
*Corresponding author: yakar75@gmail.com

Abstract

Eggs are a very important nutritional material that contains essential amino acids, essential fatty acids, vitamins, and minerals. Egg protein has high biological values, and it has an important place among the other sources of animal protein with its ability to convert to body protein at a rate of 100%. Despite the positive effects of eggs, the high concentration of cholesterol levels leads to a decrease in consumption. While only individuals entering in the group of risks like coronary heart disease need to limit their intake of eggs with food, it is known that health individuals also decrease their consumption of eggs. Food affects the blood cholesterol level, but factors like heredity, diabetes, smoking, stress, and obesity are also effective. In the study where we researched the effect of the addition of safflower seed on the cholesterol level of eggs, 4 groups were formed by using 64 total layer hens, with 16 in each group. In the study, 4 different rations were prepared and given in limited amounts to the groups over the course of 8 weeks by adding grinded safflower seed in levels of 0% (control), 2.5%, 5%, and 10%. At the end of the trial, it was reported that the egg cholesterol level in the group that was fed with the grinded safflower seed added mixed feed in the ratio of 10% fell by a significant proportion ($P<0.05$). The amount of cholesterol in the control group was determined as 15.75 mg/g and the amount of cholesterol in the 10% safflower seed additive group was determined as 12.85 mg/g.

Key Words: Safflower seed, egg, cholesterol

Agricultural Machinery Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Renewable Energy Potential of Adıyaman

Yusuf BAŞOĞUL[1*]

[1]Department of Mechanical Engineering, Faculty of Engineering, Univ. of Adiyaman, Adıyaman-TURKEY
*Corresponding author: yusufbasoğul@hotmail.com

Abstract

The demand for energy in modern world is on a constant rise both in Turkey and in the world. This study is aiming to emphasize the importance of encouraging or increasing the use of renewable energies that are environmental, not causing global warming, friendly to all eco-systems and significantly reducing dependence on foreign sources in economy, rather than fossil-based energies. In this current study, the renewable energy sources in Adıyaman and its districts; the current capacities and potentials of solar, wind, hydraulic power plants have been explained. An analysis, in the context of Adıyaman, has been made on the use of above mentioned sources as renewable energy sources in power generation. In conclusion, after assessing the potentials of the renewable energy sources in Adıyaman as a whole, it has been defined that the solar energy potential is much higher than the average value of Turkey. However, it has also been observed that the share of solar power plants is not at a sufficient level in the installed capacity. The study concluded that the potential of renewable energy sources in Adıyaman needs to be increased for this purpose.

Key Words: Renewable energy, Fossil fuels, Geothermal energy, Solar energy, Hydraulic energy

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Casual Factors in Thresher Accidents in Turkey

Muharrem KESKIN[1*], Yunus Emre SEKERLI[1]

[1]Dept. of Biosystems Engineering, Faculty of Agriculture, Mustafa Kemal Univ., Antakya/Hatay-TURKEY
*Corresponding author: mkeskinhatay@gmail.com

Abstract

Farm machinery offers many benefits for the farmers; however, they present important occupational safety concerns when they are not designed and used safely. Previous studies in Turkey concentrated on accidents of farm tractors and general farm machinery. No study was available on thresher accidents which cause significant number of casualties and injuries in Turkey. Hence, the aim of this study was to investigate the thresher accidents to determine main causal factors towards reducing the accidents, fatalities, injuries and monetary losses. Data on thresher accidents were collected based on accident news stories obtained from internet search. A total of 103 thresher accidents were identified between 2002 and 2017 of which 90 were on field and 13 were on road incidents. Data were tabulated and graphed in the spreadsheet program. It was observed that fatality rate was found to be very high at about 39.6%. Accidents were higher in some regions such as Central Anatolia region (28.2%) and Black Sea region (25.2%). Majority of the accidents were in summer months (77.7%). Most of the on-field accidents occurred as entanglement of body parts (63.3%) to thresher's moving parts followed by entanglement of clothes (16.6%) and fall into thresher (13.3%). The percentage of children with an age of less than 10 was considerable (13.0%). Safer material intake and safer power transmission design are needed. Farmers need training on how to safely operate a thresher and how their clothing should be for safer work. Also, precautions are needed to distant children from work area of the threshers.

Key Words: Agriculture, machinery, thresher, safety, accidents

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Consumption of Electricity and Photovoltaic Supply of Manure Management in Modern Dairy Farms

M. Emin BİLGİLİ[1*], Adil AKYÜZ[2], Ali AYBEK[2]

[1]Eastern Mediterranean Agricultural Research Institute, Adana-TURKEY
[2]Kahramanmaraş Sütçü İmam University, Department of Biosystem Engineering, Kahramanmaraş-TURKEY
*Corresponding author: eminbilgili@gmail.com

Abstract

In this study, carried on in Eastern Mediterranean conditions, from five dairy farms each consists of 200 animals, parameters of energy and time consumption of some electirification equipments' and their alternatives that are being used for solid and liquid manure management purposes used in internal mechanization are evaluated. In scope of this work from each seperate farm, 2 piece of 1.1 kW manure scraper, 19 kW carrier motopump, 2 pieces of electric motor with blender in manure pooland 11 kW seperator is used. Amount of manure generated, usage, problems faced, and effects of electric energy consumed and photovoltaic supply is examined.

Key Words: Dairy cattle, Manure Management, Electricity Consumption, Photovoltaic, Eastern Mediterranean

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Flow Evenness in Pulverizator Noozles by Image Porcessing Method

Necati ÇETİN[1*], Cevdet SAĞLAM[1], Bünyamin DEMİR[2]

[1]Erciyes University, Kayseri-TURKEY
[2]Mersin University, Mersin-TURKEY
*Corresponding author: necaticetin@erciyes.edu.tr

Abstract

The aim of this study is to determine the spray angle and flow evenness depending on different spray pressures and spray nozzles with image processing operation. In the study, a single nozzle patternator was used with a 60-channel measuring 120×100 cm. Anti-drift nozzles (AD 120-015, AD 120-03, AD 120-04), air-injection nozzles (AI 120-015, AI 120-02 and AI 120-03) and standard flat fan nozzles (ST 80-03, ST 90-04, ST 110-01, ST 110-02, ST 110-03 and ST 110-04) were tested at 8 different pressures (1-8 bar), while hollow cone nozzles (KHM Ø1.0 mm, KHM Ø1.2 mm and KHM Ø1.5 mm) were tested at 12 different pressures (1-12 bar) at 40-60 cm spray height. The images of the spray angles and the patterns were taken with a digital camera. The images transferred to the computer were analyzed with different image analysis programs.
Two different methods have been used to determine the spray pattern. In the first, the coordinates of the marking balls are determined on the images and converted into numerical data (pixels) to generate a spray pattern graphic. In the second method, instead of the spray pattern images, the image of the spray angle taken at the same pressure is transferred to MATLAB and a flow evenness graph based on color fluctuations is obtained from the same line on the apse axis of each image. The graphs drawn by the line profile method were obtained in a shorter time than the other methods. Spray pattern obtained with image processing method was identical with flow evenness obtained with line profile method.

Key Words: Sprayer nozzle, image processing, pressure, spray pattern

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Use of Technology in Precision Agriculture: Unmanned Aerial Vehicles (UAVs)

Ali Musa BOZDOĞAN[1*], Nigar YARPUZ BOZDOĞAN[2], Özlem KAYA[3], Yunus KARAKAYA[4], Hasan BOZKURT[5]

[1]Çukurova Univ, Dept of Agr. Machinery and Tech. Engng.-Adana-TURKEY
[2]Çukurova Univ, Vocational School of AOSB Technical Sciences-Adana-TURKEY
[3]Çukurova Univ, Graduate School of Natural and Applied Sciences-Adana-TURKEY
[4]Bayburt Directorate of Provincial Food Agriculture and Livestock, Bayburt-TURKEY
[5]Adana Directorate of Provincial Food Agriculture and Livestock.-Sarıçam-Adana-TURKEY
*Corresponding author: amb@cu.edu.tr

Abstract

In agricultural areas, the use of technological innovations presents low inputs and high incomes. Technologies are used intensively in precision agriculture. One of these technologies in precision agriculture: Unmanned Aerial Vehicles (UAV). The UAV is used for data acquisition, and chemical application such as fertilizers, pesticides etc. in the agricultural land. Data acquisition in agricultural production by UAVs is used for monitoring of agricultural land and plant, yield maps, identification of areas where lack of nutrients and occurrence of pests, etc. Therefore, UAVs prevent the excessive application of chemicals such as fertilizer, pesticide etc., also reduce the cost of input, and protect the environment. UAVs used in agriculture are categorized as fixed and rotary wing. Fixed wing UAVs are capable high-speed, and have long range, so, they monitors more agricultural land. On the other hand, rotary wing UAVs are able to obtain high resolution images because of hovering specification on target. In this study, the UAVs used in agriculture will be introduced, and the studies about the using of UAVs in agriculture will be explained.

Key Words: Unmanned Aerial Vehicle (UAV); Precision agriculture; Data acquisition; Chemical application

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Agricultural Mechanization Properties of Kop Region

M. Zahid MALASLI[1*], Çetin PALTA[1], Zeliha ÜSTÜN ARGON[1]

[1]Dept. of Biosystems Eng., Faculty of Ereğli Eng. and Natural Sci., Necmettin Erbakan Univ., Konya-TURKEY
*Corresponding author: mzmalasli@konya.edu.tr

Abstract

Konya Plain Project (KOP) Region covered; Aksaray, Karaman, Kırıkkale, Kırşehir, Konya, Nevşehir, Niğde and Yozgat. Region, constitutes 12,2% of the land area of Turkey and incorporating with 4,6 million ha of agricultural land and 19,6% of our country's agricultural land. Approximately, 1,07 million ha of this area are irrigated (23,5%), predominantly by using underground water, and the rest is dry farming. In particular, with the investments made in recent years, the proportion of irrigable agricultural land is increasing. This study was carried out to determine the presence of agricultural tools and machinery in the Konya Plain Project (KOP) Region and to determine the change in the use of agricultural tools and machinery with the opening of agricultural land to irrigation. The material of the study was the statistical data of agriculture tools and machines between 2007-2017 in the KOP Region. The characteristics of agricultural mechanization and the relationships between these properties were determined and compared by using the number of tractors, distribution of tractor power and cultivated land values for 2007-2017. In the comparisons, average tractor power (kW), tractor power per cultivated area (kW/ha), tractor number per 1000 ha cultivated area (number/1000 ha) and cultivated area per tractor (ha/tractor) have been taken into the consideration. The study also emphasizes on the use of existing tools and machines, the problems encountered and the possible solutions of these problems.

Key Words: Agricultural mechanization, Agricultural mechanization level, KOP Region

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A New Machine Design and Characteristics on Struggle via Burning Weeds Between Rows

Ferhat KÜP[1*], Vehbi BALAK[2]

[1]Harran Univ., Faculty of Agriculture, Dept of Agri. Machineries and Technologies Eng., Şanlıurfa-Turkey
[2]Harran Univ., Engineering Faculty, Department of Mechanical Eng., Şanlıurfa-Turkey
*Corresponding author: ferkup63@harran.edu.tr

Abstact

Many different methods of weed control are used in agricultural production. We can classify these methods as protective methods, mechanical struggle, chemical struggle and alternative struggles. However, due to the harmful effects of non-environmental methods on the environment, soil, water and animals in the long run, the importance given to alternative weed struggles is increasing and many researches are being carried out. Different alternative weed methods are used today. For example, mulching with weeds, microwaves, laser, We can fight with methods like. In our work, a portable, hand-usable machine was made especially for the controlled burning of weeds between rows. Machine consists of 4 parts. They are shredding, burning, extinguishing and mixing with the soil. As a result, it was determined that the machine succeeded in eliminating weeds. The new arrangements to be made will bring the farmers into use.

Key Words: Alternative struggle, weeds, burning

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Livestock Waste-Based Biogas Energy Potential of Kayseri Province

Necati ÇETİN[1*], Cevdet SAĞLAM[1], Bünyamin DEMİR[2], Selma BÜYÜKKILIÇ BEYZİ[3]

[1]Erciyes University, Kayseri-TURKEY
[2]Mersin University, Mersin-TURKEY
[3]Erciyes University, Faculty of Agriculture, Department of Animal Science, Kayseri-TURKEY
*Corresponding author: necaticetin@erciyes.edu.tr

Abstract

Biogas energy is an important energy source alternative to fossil sources. The use of livestock wastes as fertilizers in agriculture is quite common. The production of livestock waste-based biogas energy contributes both to waste management and to the economy. In this study, electric energy potential of biogas energy was calculated by evaluating the numbers of cattle, small ruminant and poultry in Kayseri province for 2008-2017 years. There were 2731699 cattle, 5299070 small-ruminant and 39136770 poultry in the province. Annual manure and litter production was calculated as 14404474,34 tons and available amount was calculated as 6251672,42 ton. Such an amount corresponds to 256718522,41 m3 biogas and 4343677,40 GJ electrical energy.

Key Words: Kayseri; Biogas production; Electrical energy; Livestock waste

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Use of Plant Waste from Agricultural Crops for the Production of Pyrolysis Gas

Olena ZOLOTOVSKAYA[1*]

[1]Faculty of Engineering and Technology, Dniprovsk State Agrarian and Economic Univ., Dnipro-UKRAINE
*Corresponding author:

Abstract

There are huge resources of residues, co-products and waste such as oilseed residue and woody residue in processing agricultural/forest products, which are potentially available, in quantity, at relatively low cost compared to other bioenergy feedstock. The aim of the present study is to perform a technical and economic assessment of the pyrolysis effectiveness as a secondary agricultural residues utilization process. This study included pilot test at the facility that might be suitable for implementation of biomass utilization combined cycle for evaluation of operating costs and revenue potential for a generic gasification process, and a cost sensitivity study.

Key Words:

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Detecting and Evaluation of the Cotton Plant in the Growing Period by Using the Unmanned Aerial Vehicle

Bülent PİŞKİN[1*], Fatih ZORLU[1]

[1]Harran Univ., Faculty of Agriculture, Agricultural Mach. Tech. and Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: bpiskin@harran.edu.tr

Abstract

Unmanned aerial vehicles are mostly used in of defense and security applications. However, in the near future. We can see they can be used in many areas including agriculture and manufacturing.the purpose of unmanned aircraft usage in agriculture, to ensure continuation of corperation in agriculture and to develope agriculture with new methods. The use of unmanned aerial vehicles in the most efficient way to handle our expanding agricultural land in a new era initiated, to production, to give future generations a healthy lifestyle. Especially in a cotton field in this research, we aimed to identify the area of field with unmanned aerial vehicle by remote and aerial image based on the observation of plant growth the presence of weeds and fields in fallow fields or sowing even though the output untreated. Especially for observe difficult reach areas and allows examination of providing great ease of transportation. Thus, agriculture in a comfortable, reliable, and is provided examinations of each point of the field.

Key Words: Unmanned aerial vehicle, image processing, agricultural observation by unmanned aerial vehicle

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Development of Solar Dryers to Dry the Eggplant in Şanlıurfa Conditions

Bülent PİŞKİN[1*], Reşit GÜLTEKİN[1]

[1]Harran Univ., Faculty of Agriculture, Agricultural Mach. Tech. and Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: bpiskin@harran.edu.tr

Abstract

One of the methods used in order to hide from degradation as a safe drying of agricultural products, which are made since an early ages. Aim of removing free water in dried product is to stop the activity of microorganisms and biochemical reactions that can occur in products. Drying operations are providing for longer storage of food. This reduced water activity of food spoilage is prevented during operations. Heat is supplied to the food during the drying in the drying process, and many sources of energy available for the applied temperature. South Eastern Anatolia Region 2993 hours/year with a sun clock in our region with the highest potential in Turkey. Sanliurfa city also has the highest sunshine hours in this region due to our region and province; for solar drying is an important region. This work will benefit from solar electricity from renewable sources. Inexpensive, quality and utilizing solar energy to be a sustainable system is designed solar dryer. Production and consumption in the province of Sanliurfa was subject to significant amounts of eggplant drying process. Due to absence of dried eggplant consumption and export opportunities as particularly preferred. Drying conditions are influenced by the products made by traditional methods and media may be damaged. In this study and to eliminate these losses, both aimed to ensure that the product is dried in a healthy way, reducing the drying time. Considering all these facts, it uses solar energy in Sanliurfa conditions, both economic and technical basis of drying eggplant is available. The system can be investigated experimentally chosen for the drying operation and that location of a space solar dryer and drying were performed. Weight in the drying system 500 g with eggplant sliced 10 mm thick, 1.2 m / s and 1.7 m / s air velocity 92% humidity in the (wet basis) final moisture 8% of the amount (dry basis) until the value is made experiments in 30-65 ^{o}C temperature . Average humidity 92% eggplant samples in Experiments (wet basis) 84% moisture content removal than 8% moisture (dry basis) was adjusted to value. We also evaluate the results of the experiment in color analysis, internal color of eggplant (white area) average L value of 80, chroma value of 24, while the angle of hue 88 and shell the color of eggplant (black area) the average value of L 22 , chroma value of 3, the angle of hue 74 , respectively. The implementations and analyzes data obtained as a result, it was concluded that appropriate and efficient for the intended target of the designed system.

Key Words: Sanlurfa, Solar energy dried, Drying, Eggplant, Cabinet

Agricultural Structures and Irrigation Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Rainwater Harvesting Case Study; University of Ankara Faculty of Agriculture Haymana Research&Experimental Farm

Belgin ÇAKMAK[1], M. Sevba ÇOLAK[1*]

[1]Department of Farm Structures and Irrigation, Faculty of Agriculture, University of Ankara, Ankara-TURKEY
*Corresponding author: smyilmaz@ankara.edu.tr

Abstract

Water is an indispensable element for living. Water demand paralel to increasing world population is being increased day to day. Therefore, the use and distribution of water should be rational. Water harvesting, utilizing rainfall effectively in arid and semi-arid regions, will be one of attractive methods to be used in the future. The aim of the study is to search use rainwater harvesting for providing of green areas irrigation and water requirements of chickens in the cluster in University of Ankara Faculty of Agriculture Haymana Research&Experimental Farm. With this work; Ankara University Faculty of Agriculture Haymana Research and Application Reduce greenhouse watering and meeting the water needs of chickens in the cluster where the farm is located; the use of rain water was investigated starting from the roof areas.

Key Words: Rainwater harvesting, irrigation, University of Ankara Faculty of Agriculture Haymana Research&Experimental Farm.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Anatomical Features of Tomato (*Lycopersicon esculentum* Mill. cv. Ceren) Cultivated in Perlite under Limited Irrigation Condition

Gökhan İsmail TUYLU[1*], MeltemTUYLU[2]

[1]Univ. of Harran, Faculty of Agriculture, Dept. of Agricultural Structures and Irrigation, Şanlıurfa-TURKEY
[2]University of Süleyman Demirel, Institute of Science, Department of Biology, Isparta-TURKEY
*Corresponding author: gokhantuylu@harran.edu.tr

Abstract

In the study it was aimed to examine some anatomical features of *Lycopersicon esculentum* Mill. cv. Ceren variety cultivated in perlite under limited irrigation condition. The workout was carried out in polycarbonate covered greenhouse in Harran University, Şanlıurfa in spring of 2016. Limited irrigation condition was created by using 50% of the total amount of irrigation water applied as nutrient solution. Cross sections were cut from the samples of root, stem, leaf of 3th harvest by microtome and examined by light microscopy.
The root is formed by 1 sequenced epidermis, 6-7 sequenced cortex, 1 sequenced endodermis and 1 sequenced pericycle. The stem is formed by 1 sequenced epidermis, 2-3 sequenced chlorenchyma, 4-5 sequenced collenchyma and 4-5 or 5-6 sequenced cortex. Bicollateral vascular bundles surround the stem. The pith is parenchymatic. Stomate, epidermal and glandular hairs are observed. The leaf is bifacial and amphistomatic. Mesophyll is formed by 2-3 sequenced palisade parenchyma and 3-4 sequenced spongy parenchyma. Big vascular bundle is bicollateral. Small vascular bundles are collateral. Epidermal and glandular hairs are observed. Prismatic crystals are generally observed and druz crystals between these crystals are sometimes observed in root, stem and leaf.
To sum up the total amount of irrigation water applied until the period of 3th harvest is 1170 L, drainage water is 2,5 L and the amount of plant water consumption is 48,7 L x plant^{-1} in the study. Biometric measurements of some tissues in Ceren variety were performed and anatomically commented. The results obtained will contribute to similar abiotic application studies.

Key words: Drip Irrigation, Drought Stress, Plant Histology, Soil- less agriculture, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Anatomical Features of Tomato (*Lycopersicon esculentum* Mill. cv. Ceren) Cultivated in Perlite under Optimum Irrigation Condition

Gökhan İsmail TUYLU[1*], MeltemTUYLU[2]

[1]Univ. of Harran, Faculty of Agriculture, Dept. of Agricultural Structures and Irrigation, Şanlıurfa-TURKEY
[2]University of Süleyman Demirel, Institute of Science, Department of Biology, Isparta-TURKEY
*Corresponding author: gokhantuylu@harran.edu.tr

Abstract

In the study it was aimed to examine some anatomical features of *Lycopersicon esculentum* Mill. cv. Ceren variety cultivated in perlite under optimum irrigation condition. The workout was carried out in polycarbonate covered greenhouse in Harran University, Şanlıurfa in spring of 2016. Irrigation issues were planned on the condution that 30%-35% of irrigation water was drained and the optimum irrigation condition was selected according to some anatomical features among the irrigation issues. Cross sections were cut from the samples of root, stem and leaf of 3th harvest by microtome and examined by light microscopy.
The root of the plant is surrounded by 1 sequenced epidermis. 1 sequenced endodermis and 1 sequenced pericycle are observed. There are one sequenced epidermis, 1-2 sequenced chlorenchyma with large spaces between the cells, 5-6 sequenced collenchyma, 3-4 sometimes 5-6 sequenced cortex in stem. Pith surrounded by bicollateral vascular bundles is parenchymatic. Stomate and epidermal hairs are observed. The leaf is bifacial and amphistomatic. Mesophyll is formed by 1 sequenced palisade parenchyma and 2-3 sequenced spongy parenchyma. Big vascular bundle is bicollateral. Small vascular bundles are collateral, surrounded by bundle sheath and embedded in mesophyll. Epidermal and glandular hairs are observed. Prismatic crystals are generally observed and druz crystals between these crystals are sometimes observed in root, stem and leaf.
In conclusion, the total amount of irrigation water applied until the period of 3th harvest is 1756 L, drainage water is 174 L and amount of plant water consumption is 65,9L x plant^{-1}. The anatomical features of *Lycopersicon esculentum* Mill. cv. Ceren variety cultivated under optimum irrigation condition are identified in detail.

Key Words: Drip irrigation, Paraffin, Plant Histology, Soil-less agriculture, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Use of Mixed Integer Programming Techniques on Agricultural Structures

Halil İbrahim YILMAZ[1*]

[1]Süleyman Demirel Univ., Faculty of Agriculture, Agr. Structure and Irrigation Dept., Isparta-TURKEY
*Corresponding author: ibrahimyilmaz@sdu.edu.tr

Abstract

Mixed integer programming applications are a programming model in which some of the variables are integers and some are 0-1 variable. It allows every condition of the problem, which are intended to be solved, to be defined to the mathematical model by allowing different variables to operate under the same mathematical algorithm. Thus, it is aimed to perform the most likely applicable solution of the problem each condition of which is defined to the model. The main goal of this modeling technique is to enable different modeling (programming) methods to perform together oriented at a single purpose. The method of operating different models under the same algorithm for a goal oriented at the solution of an existing problem is called the mixed integer programming method as well as the goal programming method. One of the most important advantages of this method is that it allows us to use the accuracy of a linear-based solution and the flexibility of mixed integer programming techniques together. The mixed integer programming technique applications which was developed about fifty years ago is now an essential solution method used in engineering. This programming technique enables solving problems in every aspect, which occur in the engineering areas. Therefore, this programming technique is used as a programming technique which has an important application area in engineering today.
In this study to be carried over, the applications of mixed integer programming techniques on agricultural structures is going to be examined in detail. The applications of mixed integer programming techniques are going to be evaluated by giving examples of them on agricultural structures constructed in this context such as animal housing, cold storage systems for apples, etc.

Key Words: Mixed programming, 0-1 programming, goal programming, agricultural structure

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Flood Simulation for El-Zeyzoune Dam Failure in Syria Using Hec-Ras

Ahmet İRVEM[1*], İlker DAĞ[2], Mustafa ÖZBULDU[1]

[1]Mustafa Kemal University, Faculty of Agriculture, Biosystem Engineering Department, Antakya-TURKEY
[2]Metropolitan Municipality, Hatay-TURKEY
*Corresponding author: airvem@mku.edu.tr

Abstract

An analysis of dam failure models provides knowledge for emergency action plan and identifying the resulting hazards because of flooding. Floodplain managers and emergency management personnel may utilize this information to protect against loss of life and property damages. In this study, The Hydraulic Engineering Center's River Analysis System (HEC-RAS) was used for evaluation of El-Zeyzoune dam failure in Syria on June 4, 2002. ArcGIS was used to extract geometric information from a digital elevation model and then imported into HEC-RAS. Unsteady-flow simulation has been performed using based inlet hydrograph values taken from observed flow data after dam failure. When inlet hydrograph peak discharge was 286 m3/s, simulated flow in location of observation point was found 109 m3/s. we have obtained relatively accurate simulation result, when comparing with observed discharge which was 143 m3/s. Map of flood risk areas because of simulated flood wave has provided insight for emergency preparedness. Flood lag time which is important information for early warning was found 50 hours. This study indicated that flood simulation and peak discharge forecasting can be easily performed using HEC-RAS model. The results obtained from the simulation model have given relatively accurate results.

Key Words: Dam failure, HEC-RAS, El-Zeyzoune dam, Asi-Orontes river

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Accuracy of Satellite-Based CFSR Solar Data to Estimate Solar Energy Potential for Hatay Province, Turkey

Ahmet İRVEM[1*], Mustafa ÖZBULDU[1]

[1]Mustafa Kemal University, Faculty of Agriculture, Biosystem Engineering Department, Antakya-TURKEY
*Corresponding author: airvem@mku.edu.tr

Abstract

Solar radiation data is important parameter to estimate solar energy which is major renewable energy in terms of environmentally sustainable resources. Accurate spatial and temporal distributions of solar radiation are required not only to estimate solar energy but also hydrological, meteorological and climatological studies. General objective of the study is to examine accuracy of freely available CFSR solar radiation data against ground observation data based on monthly and yearly averages over the Hatay province in Turkey. The CFSR dataset including 25 daily solar radiation measurement points was evaluated against 12 ground stations for 21 year period (1985-2006). Statistical results showed that most correlations in monthly basis data were weakly correlated except October (R^2=0.73). According to results of Bias, CFSR monthly averaged solar energy was over estimated for all months. Also, CFSR annual solar energy 28% higher than ground-based observed solar energy with R^2=0.76. Annual CFSR solar energy found between 5.2 and 5.6 kWh/m^2-day. Annual ground-based solar energy ranged from 3.9 to 4.2 kWh/m^2-day. The result proved that, it is unacceptable to use the CFSR dataset in case of lack of measured ground-based solar radiation in monthly and yearly averaged basis. Estimated CFSR data has need to be improved and accuracy of CFSR data has to be tested for other regions in Turkey. We recommend finding another source of satellite-based data to estimate solar energy potential for the Hatay province of Turkey.

Key Words: CFSR dataset, Solar energy, Ilwis, Hatay

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Current Situation of the Ovine Animal Shelters in Şanlıurfa

Arman AMAK[1*], Gökhan İsmail TUYLU[2]

[1]Harran Univ., Graduate of Natural and Applied Sci., Dept. of Agr. Struct. and Irrigation, Şanlıurfa-TURKEY
[2]Harran Univ., Faculty of Agriculture, Dept. of Agriculture of Structuresand Irrigation, Şanlıurfa-TURKEY
*Corresponding author: amakarman@gmail.com

Abstract

In the study, the current situation of shelters where ovine animal breeding was carried out in Şanlıurfa region for the year of 2016 was examined in terms of business administration. Survey data were obtained by using survey method. Using the Neyman method, the number of enterprises was determined according to the 95% confidence limit and the 0.5% error rate, data obtained from the enterprises were evaluatedusing Excel computer software in computer environment, the results are presented in shapes and schedules. The research is important in terms of the development of ovine shelters in the region and the contribution to the literature.

Key Words: Barn, Management, Goat, Sheep, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Efficiency of Water Footprint in Agricultural Potential

Sabri AKIN[1*], Mehmet ŞİMŞEK[1]

[1]Harran University, Agriculture Faculty, Dept. of Agricultural Structure and Irrigation, Şanlıurfa-TURKEY
*Corresponding author: sabriakin@harran.edu.tr

Abstract

Water is one of the most important sources in the ecosystem. For the continuity and the stability of life, the use of these sources in all sectors constitutes the cornerstone of the development. The use of hydraulic and hydrological investments on the water sources constitutes the major milestones of the development. It has been known the fresh water of the mainland is not distributed equally and fairly. Considering the sanitation and wellness, the water consumption of an individual per day is 250-300 liter. When the sources of Turkey are examined, it has been seen that Turkey is not water rich. In the fact, it has 779,452 km^2 precipitation projection and annual rainfall amount is 501 km^3, and 37% of that passing to the flow. When the budget is examined in detail, it has been calculated that the active annual usable water potential will not exceed 112 billion m^3. According to 2017 water balance, 44 km^3 water has been used in the agricultural and service sector. However, it has been reported all sources where water above 70% is used in the agriculture. It has been understood that when viewed the water potentials and water use activity of the areas belonging to agriculture potential of Southeastern Anatolia Project (GAP) and Sanliurfa in Turkey scale, the overall Turkey irrigable areas corresponds to 7% and 400,000 hectares area is irrigated with gravity and pressurized irrigation systems. Observing the plant pattern, the cotton plant has been taken the first place for years in GAP lands. In last three years, the sowing ratio of cotton plant particular in Harran plain is above 75%. The reasons of this plant being in the first order in plain and the city are the higher support of the government to the cotton plant compared to other plants, the producers knowing better this plant than other plants and the well infrastructure of ranch for cotton sowing. The added value of watery agriculture is at least five times more than the one of dry agriculture with the presence of water in the plain; therefore, the increase in the development and welfare level can be seen to associate with the water.

Key Words: Agriculture, efficiency, water footprint, potential

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Temporal Change of Potential Evapotranspiration (PET) and Drought Analysis Through Standardized Precipitation Evapotranspiration Index (SPEI) in Southeastern Anatolia Region

Alper Serdar ANLI[1*]

[1]Ankara University Agricultural Faculty Farm Structures and Irrigation Department, Ankara-TURKEY
*Corresponding author: asanli@agri.ankara.edu.tr, alperanli@gmail.com

Abstract

Drought, which is a consequence of climate change due to global warming in the world and in our country, negatively affects all living creatures living on the earth, falling below the long-term average values of rainfall amounts over a certain period. Many drought indexes have been developed to describe the severity, spatial and temporal characteristics of the drought. In this study, temporal change of potential evapotranspiration (PET) in Southeastern Anatolia Region was investigated. Parametric Augmented Dickey-Fuller (ADF) and non-parametric Mann-Whitney U (MW) tests were applied to observe the temporal change of potential evapotranspiration (PET). On the other hand, for analysis of drought, Standardized Precipitation Evapotranspiration Index (SPEI) method which takes into account both precipitation and evapotranspiration parameters was used. For this purpose, monthly total precipitation and monthly average temperature values for 53 years measured at meteorological stations in Southeastern Anatolia Region were utilized. As a result, there will be drought in Southeast Anatolia in the middle and long term period. For this, it is suggested to apply suitable pressurized irrigation methods (drip, sprinkler methods) by calculating values of plant water consumption values.

Key Words: Drought Analysis, Standardized Precipitation Evapotranspiration Index (SPEI), Potential Evapotranspiration (PET), Augmented Dickey-Fuller test (ADF), Mann Whitney U test (MW)

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Irrigation Approaches at the Pistachio in Southeastern Provinces

Sabri AKIN[1*], Mehmet ŞİMŞEK[1]

[1]Harran University, Agriculture Faculty, Dept. of Agricultural Structure and Irrigation, Şanlıurfa-TURKEY
*Corresponding author: sabriakin@harran.edu.tr

Abstract

Pistachio surviving for long years is the fruit, which is durable either to the high and low temperatures or the drought. The lifetime of pistachio tree is more than 100 years and no pistachio tree has been known dying because of aging in southeastern provinces. Pistachio trees having a very strong root structure due to the drought durability can pass the summer season because of the moisture gained from wide soil surface and depth by spreading their roots deeply and broadly to the soil. In the fields experiencing the surface and deep drainage problems, saturation of the soil, over-wetting on the surface and the increase in the ground water levels can result in the severe wilting and dryness in plants. While some plants are susceptible to water because of their genetic characteristics, some can be tolerable to water. Unfortunately, the basis of the problem is the irrigation of habits of farmers and the demand for intensive irrigation by citizens has been known even in modern irrigations. For some plants, the approach in which more water means more yield has been continuing. However, the situation is opposite for pistachio. The ground water level highness and conventional irrigations in pistachio make soil-originated *Phytophtora* spp. *Verticillium dahiliae* and *Fusarium* spp. diseases inevitable. Acceptation of not irrigating the pistachio is not a right approach. The plant feeding with fertilization application by surface and subsurface drip irrigations creating the wetness from the root structure can provide the significant increase in yield and income.

Key Words: Pistachio, irrigation, water, southeastern

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Trend Detection of Reference Evapotranspiration and Meteorological Drought Analysis with Reconnaissance Drought Index in Aegean Region

Alper Serdar ANLI[1*]

[1]Ankara University, Agricultural Faculty, Farm Structures and Irrigation Department, Ankara-TURKEY
*Corresponding author: asanli@agri.ankara.edu.tr, alperanli@gmail.com

Abstract

In areas where water resources are limited, the detection of trends of reference evapotranspiration is important. In this study, the trends of reference evapotranspiration values calculated with the help of data obtained from some stations in the Aegean region were examined over time and the meteorological drought analysis with Reconnaissance Drought Index was performed. Penman-Monteith method was used to calculate the reference evapotranspiration. The data measured between the years 1975-2017 were used in central stations of Aydın, Denizli, İzmir, Manisa and Muğla provinces. The trend detection of reference evapotranspiration was determined by parametric Augmented Dickey-Fuller and non-parametric Mann Whitney U tests. As a result, it has been obtained that there is a significant trend tendency over time in the reference evapotranspiration and it has been observed that in the region according to the Reconnaissance Drought Index method applied for predicting the meteorological drought in the provinces, the mild drought is dominant in general, and a great number of medium drought and a few are severe drought.

Key Words: Reference Evapotranspiration, Reconnaissance Drought Index, Aegean Region, Trend Detection

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Estimation of Carbon Footprint of Three Broiler Farms: Bursa Case Study

İlker KILIÇ[1*], Büşra YAYLI[1]

[1]Uludağ University Faculty of Agriculture, Department of Biosystems Engineering, 16059, Bursa
*Corresponding author: ikilic@uludag.edu.tr

Abstract

Increasing the population for a variety of reasons in Turkey, accordingly, the increase in the need for animal-derived protein, destruction of agricultural lands, demand continous input of product yield for reasons such as intensive operation have gained widespread. As a natural consequence of intensive management system where more production is made in the unit area, negative enviromental impacts are increasing and contribute to global warming with gas emissions. Methane (CH_4), carbon dioxide (CO_2) and diazot oxide (N_2O) are the main greenhouse gases that cause global warming. Carbon footprint is the measure of the damage caused by human activities to the environment in terms of the amount of greenhouse gases that are measured in units of carbon dioxide. The most common method used in calculating carbon footprint are Tier 1-2-3 approaches developed by the Intergovernmental Panel on Climate Change(IPCC). The aim of this study is to determine the effect of three different broiler farms in Bursa region on global warming by using Tier 1 method to determine the carbon footprint.

Key Words: Carbon Footprint, Global Warming, Greenhouse Gas, Broiler Farm

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Efficiency Assessment of Indoor Environmental Conditions in a Broiler House Using Temperature-Humidity Index

İlker KILIÇ[1], Hatice DELİCE[1]

[1]Uludag Univ., Agriculture Faculty, Biosystems Engineering Department, Campus of Gorukle, Bursa, Turkey
*Corresponding author: ikilic@uludag.edu.tr

Abstract

Indoor environmental conditions are a major factor for the broiler in terms of bird welfare. Optimum temperature and relative humidity conditions in indoor environment in broiler houses should be provided to prevent heat stress, good feed conversion ratio, higher productivity and less mortality. The goal of this study was to assess efficency of indoor environment conditions in three broiler houses operated in Bursa region using temperature humidity index (THI). The average mean and maximum THI values were 28 and 31, respectively and it varied from 25 to 31. According to THI results obtained in this study, indoor environmental conditions in monitored broiler houses were insufficient for broiler in all measurement days.

Key Words: Broiler, Heat stress, Temperature-Humidity index

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Analysis of the Impact of Night Irrigation on Water Consumption and Yield with Geographical Information Systems (GIS): Şanlıurfa Kaynaklı Neighbourhood Case

Mehmet Ali ÇULLU[1*], Melike KUŞ[2], Uğur ZEYDANLI[2], Mükerrem BİRLİK[1], Erhan AKÇA[3]

[1]Harran University, Agricultural Faculty, Department of Soil Science and Plant Nutrition, Şanlıurfa, Turkey
[2]Nature Conservation Center, Ankara, Turkey
[3]Adıyaman University, Technical Programs, Adıyaman, Turkey
*Corresponding author: macullu@harran.edu.tr

Abstract

Sustainable and optimum efficient use of water resources is among the priority plans of the countries in arid and semi-arid region. Therefore, precise plans are made for the usages from the source to the drainage. In Turkey, high investments on irrigation network has been made and still being made due to semi-arid and arid conditions and as agriculture is one of the main source of income of the country. Among these investments, the South-eastern Anatolia Project (GAP), which was initiated in 1970s, is among one of the few investments not only at national scale but also at global scale in terms of its area of application and budget. With the investments made in the project, the region became prominent in irrigated farming. Especially in the recent years, the region has become a producer with a share of 65% cotton production of the country. Price and subsidy policies on cotton made a significant contribution to this increase. Since cotton is a plant with high water requirement, planning and implementation of detailed irrigation programmes will help to reduce the pressure on natural resources. In this study, the impact of irrigation timing shift (nigh time irrigation to daytime irrigation) on cotton yield and water and fertilizer usages is examined between 2013 and 2015 via surveys and field works in Kaynaklı neighbourhood, which is located in Irrigation Union's operational zone.

The results of the satisfaction survey on night-time irrigation conducted with the farmers showed that there was a yield increase along with time and irrigation water saving in addition to increased access to water at night. The survey conducted with 25 farmers who performed day and night-time irrigation has revealed that irrigation water is given 2 times less and there was a 50-150 kg yield increase in night irrigation parcels.

Cotton fields and yields between 2013 and 2015 were determined by associating the farmer parcels with satellite images, and the relation between yield and water use is evaluated by integrating satellite imagery analysis. As a result, water-yield relation is analysed at parcel level using GIS, night-time and daytime irrigation is compared and night-time irrigation resulted in significant water saving and yield increase. In this context, inclusion of night-time irrigation in GAP Region irrigation schemes is suggested when favourable conditions exist.

Key Words: Night-time irrigation, GIS, Cullap Irrigation Union, Water saving

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Heavy Metal Content of Drainage Waters in Harran Plain

Hatice KARA[1*], Sadık YETİM[2]

[1]GAP Agricultural Research Institute, Sanliurfa.
[2]TKDK, Sanliurfa
*Corresponding author: kimyagerkara@gmail.com

Abstract

Intensive agricultural activities are carried out on the fertile soil of Harran plain. Due to uncontrolled irrigation and excessive fertilization in the plain, significant quantities of nitrogen, phosphorus and heavy metals have been reported in various research results on drainage channels in irrigated areas. For this reason, this study was carried out to determine the heavy metal content of waters in the drainage channels in the Harran plain. The study was carried out for 6 months including May, June, July, August, September and October when the irrigation was intensively done. Drainage water samples were taken twice a month from two different depths from 10 different points along the main drainage channel as representing the plain. During the six months, a total of 240 samples of drainage water were taken. Cadmium, chromium, copper, nickel, zinc and lead, which are potentially toxic according to Water Pollution Control Regulation, were analyzed in water samples taken from drainage channels. In all water samples analyzed, no result was found above the toxic limit values specified for irrigation water in the Water Pollution Control Regulation. As a result, heavy metal pollution was not observed in drainage water in Harran plain.

Key Words: Drainage water, Heavy metal, Toxic, Harran

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Some Quality Parameters of Drainage Waters in Harran Plain

Hatice KARA[1*], Sadık YETİM[2]

[1]GAP Agricultural Research Institute, Sanliurfa.
[2]TKDK, Sanliurfa
*Corresponding author: kimyagerkara@gmail.com

Abstract

Harran Plain was opened to agricultural irrigation in 1995. Since it opened to irrigation, uncontrolled and excessive irrigation has been a problem in the plain. Salts dissolved in excessively irrigated land, fertilizers used excessively are transported to the drainage channels with irrigation water. For this reason, this study was conducted to determine some quality parameters of the waters in the Harran plain drainage channels. The study was carried out for 6 months including May, June, July, August, September and October when the irrigation was intensively done. Drainage water samples were taken twice a month from two different depths from 10 different points along the main drainage channel as representing the plain. During the six months, a total of 240 samples of drainage water were taken. pH, EC, Na^{+}, K^{+}, Ca^{2+}, Mg^{2+}, Cl^{-}, CO_3^{2-}, HCO^{3-}, SO_4^{2-} analyzes were made in drainage water samples. SAR, RSC and hardness were calculated from the analysis results. The obtained results were evaluated according to irrigation water quality criteria.

Key Words: Drainage water, Irrigation, Quality parameters, Harran plain

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Establishment of Leaf Area Model by Linear Measurements under Ideal and Water Stress Conditions in Greenhouse Grown Pepper Plant

Sefer BOZKURT[1*], Gülsüm SAYILIKAN MANSUROĞLU[2]

[1]Department of Biosystems Engineering, Faculty of Agriculture, Mustafa Kemal University, Hatay, Turkey
[2]Dept.of Plant and Animal Production, Samandag Vocational School, Mustafa Kemal University, Hatay, Turkey
*Corresponding author: sbozkurt33@gmail.com

Abstract

Simple, accurate, and nondestructive methods of determining leaf area of plants are important for many experimental comparisons. The objectives of this study were to establish equations to estimate the leaf area of greenhouse-pepper and nondestructive leaf area determination by using this model and to evaluate the effects of different irrigation water levels (I20, I40, I60, I80, I100 and I120) on this estimative. For this reason, a total of 100 leaves for each irrigation water level (totally 600 leaves) were collected and predicted the wide (W), length (L) and area (LA) of individual leaves of pepper plants. Estimation models were derived using Multiple Linear Regression (MLR) method and Full Cross Validation was used to validate the models. The Root Mean Square Error of Prediction (RMSEP) and R2 values were used to compare the models. It was found that mean leaf area values were affected by different irrigation amounts. A strong non-linear relationship was found between pepper W, L and LA ($R2 \geq 0.91$). Three LA prediction models with W (Model 1), L (Model 2) and W and L (Model 3) were developed for each irrigation levels and for the combined data. RMSEP and R2 values were 2.47 cm2 and 0.98 for the model of combined data for all leaves from all different irrigation treatments. With these models, estimating pepper leaf area and leaf area index (LAI) values would be done without the use of expensive instruments and destructing the leaves of the plant. It is also possible to carry out the measurements on the same leaves throughout the growing period.

Key Words: Leaf area, growth model, leaf area index

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Soil Surface Covering on Soil Temperature and Soil Water Conservation under Different Irrigation Conditions in Greenhouse Cultivation

Sefer BOZKURT[1*], Ayşe PALABIYIK[1], Mehmet SEZER[1]

[1]Department of Biosystems Engineering, Faculty of Agriculture, Mustafa Kemal University, Hatay, Turkey
*Corresponding author: sbozkurt33@gmail.com

Abstract

Today, various applications are being made to further improve vegetable growing and increase the share of production. One of these applications is the use of mulching and its use is becoming increasingly widespread. In this study, the effects of soil covering material on the hourly and daily changes of soil temperature in greenhouse melon cultivation and the effects of applications on soil moisture change have been tried to be discussed. In the experiment, three mulch materials (M0:no mulching, Mg: grey mulch and Mb: black mulch) were tested under three irrigation water levels (I100, I75 and I50). It has been observed that the temperature differences between different mulch materials and different levels of irrigation varies depending on the different applications especially in the case of mulch and mulch-free soils. It has been also determined that the soil moisture contents, which are equalized in all the parcels at the beginning of the experimental period, are different at the end of the experiment depending on the applications.

Key Words: Soil temperature, Mulch materials, Soil water

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Supplemental Irrigation on the Yield and Quality of Wheat in Semi-arid Conditions

Yahya ÇAP[1], Ali Fuat TARI[2*]

[1]Harran University, Graduate School of Natural and Applied Sciences, Şanlıurfa-TURKEY
[2]Harran University, Agriculture Faculty, Dept. of Agricultural Structures and Irrigation, Şanlıurfa-TURKEY
*Corresponding author: aftari@harran.edu.tr

Abstract

This research was conducted to determine the most appropriate supplementary irrigation program for winter wheat in Harran Plain conditions during the 2015-2016 production season. For this purpose, considering the periods of phenological development of wheat, the effects of different irrigation programs on wheat yield, quality and yield components were examined. In the study, 7 different irrigation programs were applied considering three different growth periods of the plant (stem elongation, heading, milk stage). As a result of the research carried out in the randomized blocks trial design, complementary irrigation practice gave the highest yield in all three growth periods. The amount of irrigation water in this area was 240 mm, the water consumption was 388 mm and the yield was 341.1 kg da^{-1}. The highest yield from only once-harvested crops during the growing season was obtained from the soaked crop during the take-off period. The yield obtained from this subject is 204.5 kg da^{-1}. The highest yields were obtained from the plants which were irrigated during the periods of uptake and heading. The yield obtained from this subject was 298.3 kg da^{-1}. The applied irrigation programs significantly affected the thousand kernel-weights weights, protein ratios, SDS values and harvest index values of the experimental subjects, but not color (b) values. The water use efficiencies of the subjects ranged from 0.53 kg m^{-3} to 0.93 kg m^{-3}, while irrigation water use efficiencies ranged from 0.67 kg m^{-3} to 1.30 kg m^{-3}.

Key Words: Harran Plain, wheat, supplementary irrigation, yield, quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Climate Change, Water Resources and Food Safety

Belgin ÇAKMAK[1], M. Sevba ÇOLAK[1*]

[1]Ankara University, Agriculture Faculty, Dept. of Agricultural Structures and Irrigation, Dışkapı/ANKARA
*Corresponding author: smyilmaz@ankara.edu.tr

Abstract

Water is a fundamental element of living things. Water, an renewable natural resource, is also a limited resource. While the demand for water resources increases from one side, the water resources that can be used from the other side are gradually decreasing. Much of your food needs come from irrigated farming areas. Vegetable and animal food is produced with water. In this respect, water is an important means of ensuring food safety. Food safety is the sustainable production of healthy and reliable food at sufficient levels of physical, chemical, biological and hygienic controls at every stage of production so that it will not harm the environment and human health, from the farm to the table. In our country the most water user sector is agriculture. The agriculture sector faces two major problems: increased food demand and drought due to climate change. As demand for water resources becomes increasingly limited, the amount of water used in agriculture is limited and food safety risks arise. Decrease in water potential and increased water demand necessitate effective use of water resources. It is not possible to provide food safety without water security. Approximately 300 million hectares of 1.5 billion hectares of agricultural land in the world can be irrigated, while the rest of the world is heavily cultivated. Effective use of water in agriculture in the coming years will have a great influence. In this study, climate change, water resources and food safety will be informed in our country and the impact of climate change on food safety and water resources will be evaluated.

Key Words: Climate change, water resources, food safety

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Using Programmable Logic Control (PLC), Flow Key Curve, Pressure and Ultrasonic Sensors to Measure Water Flow Rate in Open Channels

Cafer GENÇOĞLAN[1*], Mehmet Durak TÜYSÜZ[1]

[1]Kahramanmaraş Sütçü İmam Univ., Agriculture Faculty, Biosystem Engineering Dept.-TURKEY
*Corresponding author: gencoglan@ksu.edu.tr

Abstract

The aim of the study is to measure water flow rate in the open channels using PLC, flow key curves, pressure and ultrasonic sensors. This study was carried out at the water measurement station located at the beginning of left bank irrigation channel of Kartalkaya Dam, belonging to the 20th Regional Directorate of State Hydraulic Works, in Pazarcık District of Kahramanmaras Province. In this station there is electronic limnimeter measurement system. A PLC with analogue input, pressure and ultrasonic sensors were used to measure the water flow rate in the open channel by the flow key curve. Software was written in CODESYS-ST to measure the instantaneous flow of water in the channel using PLC, flow key curve, pressure and ultrasonic sensors. This software consisted of two parts. The first one was code and the second one was the visualation part where the current flowing in the channel was directly observed. The water head measured was also taken by the electronic limnimeter at the same time. The water flow rate measurement of the electronic limnimeter was determined by substituting the electronic limnimeter water head values in the flow key curve. The results were evaluated using t test. The results showed that pressure and ultrasonic sensors reading's water flow rate were not different statistically from the electronic limnimeter reading's.

Key Words: PLC, Pressure and Ultrasonic sensors, Open channel

Possibilities of the Geophysical Method for the Establishment of Water Filtration from Regulating Irrigation Basins

Olha ORLINSKA[1*], Natalia MAKSIMOVA[1], Hennadii HAPICH[1], Irina CHUSHKINA[1], Dmytro PIKARENIA[2], Vladislav NAKONECHNY[2]

[1]Dnipro State Agrarian and Economic University, Dnipro, UKRAINE
[2]Dneprovsky State Technical University, Kamyanske, UKRAINE
*Corresponding author: nippel@rambler.ru

Abstract

There are results of field research using the geophysical method of natural impulsed electromagnetic field of the Earth (NIEMFE), established zones of water filtration from the regulating irrigation pool, determined water losses due to filtration. It is shown that it is possible using the NPEMFE method to reliably and quickly allocate water filtration zones through the ground-based dams of water basins of reclamation systems. It is allow to quickly taking measures to reduce water losses and deteriorate the ecological state of the underground hydrosphere around the pools of water-reclamation purpose.

Key Words: Regulating irrigation pool; Method of natural pulsed electromagnetic field of the Earth (NPEMFE); Water losses due to filtration; Geophysical research

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Effects of Deficit Irrigation on Quality, Yield and Yield Components of Some Cotton Variety in Amik Plain Conditions

Deniz CAN[1], Berkant ÖDEMİŞ[1*]

[1]Mustafa Kemal University, Agriculture Faculty, Department of Biosystem Eng., Serinyol-Hatay/TURKEY
*Corresponding author: bodemisenator@gmail.com

Abstract

In the experiment was carried out in Hatay conditions in 2012-2013. In this study, 4 cotton varieties (Carisma, flash, BA525, Tam91D) were tried to determine the response to water stress. A Class a Pan method was used to determine the amount of irrigation water. Irrigation treatments were 25% (S25), 50% (S50), 75% (S75), 125%(S125, excessive irrigation) of the full irrigation treatment (S100) which received 100% Class-A Pan evaporation. Numbers of irrigation events were 5 and 7 in 2012 and 2013, respectively.
According to the results, amount of irrigation water applied in the first year ranged from 166 mm to 588 mm and from 128 mm to 682 mm in the second year. S0 treatment (except precipitation) received 60 mm and 42 mm first and second year, respectively. Evapotranspiration occurred between 290 mm-678 mm in Carisma, 292 mm-650 mm in Flash, 285 mm-576 mm in BA525 and 282 mm-590 mm in Tam 91D. In the second year, evapotranspiration in Carisma, Flash, BA525 and Tam91D cultivars ranged from 283 mm-671 mm, 268 mm-662 mm, 295 mm-629 mm, 298 mm-678 mm, respectively. Cotton yield were changed 367.7-599.0 kg da-1, 369.9-603.1 kg da^{-1}, 362.8-599.9 kg da^{-1}, 317.3-583.5 kg da^{-1} in the first year, 305.7-523.9 kg da^{-1}, 341.1-545.7 kg da^{-1}, 285.9-502.3 kg da^{-1} and 273.1-442.9 kg da^{-1} in the second year, respectively, in Carisma, Flash, BA525 and Tam91D cultivars. The highest yield was obtained from the Flash variety in both years. A second degree polynomial relationships could adequately describe the cotton seed yield response to the irrigation water amount in all cotton variety. Chlorophyll content and stomatal conductance decreased as water stress increased in all cultivar.

Key Words: Cotton, water stress, Class A pan, stoma conductance, proportional chlorophyll content

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Challenges on Irrigation Water Use of Cotton Crop in Southeastern Anatolia Region Project (GAP) of Turkey

Öner ÇETİN[1*], Neşe ÜZEN[1], A. Fuat TARI[2]

[1]Dicle University, Agricultural Faculty, Dept. of Agricultural Structures and Irrigation, Diyarbakır, Turkey
[2]Harran University, Agricultural Faculty, Dept. of Agricultural Structures and Irrigation, Sanlıurfa, Turkey
*Corresponding author: oner_cetin@yahoo.com

Abstract

The area of GAP is one of the most important cotton-producing areas in Turkey, accounting more than 50% of the country's cotton production. Most of the cotton fields in the area are irrigated by surface irrigation. Thus, cotton crop is one of the main consuming water since long irrigation season and high crop pattern percentage. Considering the cotton irrigation, the main problems are use of improper irrigation methods, over irrigation, lack of drainage, salinization, soil erosion, inappropriate crop pattern and climatic characteristics. According to the some research results in the GAP, the requirement of irrigation water is 937-1148 mm for an appropriate cotton production using surface irrigation methods. This amount of water used is much more under the farmer conditions. To produce seed-cotton of 1 kg is required approximately 2000 L, 1400 L and 1200 L using furrow, LEPA (Low energy precision application) and drip irrigation, respectively. One of the solutions for these problems is, thus, to use modern irrigation techniques such as drip irrigation, because approximately amount of irrigation water of 600 mm is only required to get an appropriate yield, it means that this could save about 30-40 % of water. In addition, although the net return per unit area (990 $/ha) for cotton production are almost the same using drip and surface irrigation, however, economically water productivity (net return per unit water) (0.130 $/$m^3$) for drip irrigation is much more compared to surface irrigation (0.100 $/$m^3$). The main issues on cotton irrigation must be optimization of irrigation scheme operation, use of the techniques for improving water use efficiency, real-time management of irrigation water, optimization of drainage systems in irrigation, management of salt-affected soils, the challenges and future needs are related to problems of water delivery to farmers, economic aspects of irrigation and environmental and health aspects of irrigation.

Key Words: cotton, GAP Region, Turkey, challenges on irrigation, water use

Field Crops Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of the Last Irrigation Time on First Crop Corn

Mehmet Davut ŞAHİN[1*], Leyla İDİKUT[2]

[1]Institute of GAP Agricultural Research, Sanlıurfa-TURKEY
[2]Kahramanmaras Sutcu Imam Univ., Faculty of Agriculture, Dept. of Field Crops, Kahramanmaras-TURKEY
*Corresponding author: dahin63@hotmail.com

Abstract

In this study, it is aimed to determine the last irrigation times after tasseling of first corn crop in Harran Plain. The last irrigation application in the survey was started 7 days after tasselling. Subsequent last irrigation operations were continued at 7-day intervals. The last irrigation practices were 6 times in total. The last irrigation coincides with the 42nd day of tasseling. In this study, the type of P.T83 was planted on April 20, 2015 in the territory belonging to Talat Demirören Agricultural Enterprise of the Directorate of GAP Agricultural Research Institute in Şanlıurfa. The experiment was carried out with 6 applied and 3 replicate according to randomized blocks trial design. The minimum and maximum values obtained on the corn plant cultivated on 20 April 2015 are as follows; ear tasseling duration (62.00 - 62.07 days), the height of the first ear (71.00 - 77.00 cm), the height of the plant (203.66 - 211.33 cm), the length of the ear (16.30 - 18.36 cm), the diameter of the ear (30.00 - 38.33 mm) and grain yield obtained (999.33 - 1426.23 kg/da). The highest grain yield was obtained from irrigation termination 28 days after tassel formation.

Key Words: Corn, Irrigation, Grain yield, Şanlıurfa.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Chitosan Mediated Enhancement of Secondary Metabolites and Biomass Yield in *Achillea gypsicola* via Plant Cell Suspension Culture

Muhammed Akif AÇIKGÖZ[1]*, Şevket Metin KARA[1], Ayşegül KIRLI[1]

[1]Department of Field Crops, Faculty of Agriculture, Ordu University, 52200, Ordu, Turkey
*Corresponding author: makifacikgoz@gmail.com

Abstract

Chitosan is a natural, biocompatible, cationic biopolymer that promotes biosynthesis of phytochemicals by imitate the effects of some pathogenic microorganisms in plants. The aim of the present work was to scale up of the production of secondary metabolites and biomass yield utilizing chitosan in cell suspension culture of endemic Turkish yarrow species. The cell suspension cultures utilized in the work were obtained from the calluses derived from in vitro plantlets propagated from the mature yarrow seeds. Different concentrations (0, 25, 50 and 100 mg/l) of chitosan was implemented to eight-day-old cell cultures. The cell suspensions subjected to several doses of chitosan was harvested three times, at one day interval. The content of camphor and phenolic compounds were determined using Headspace-GC-MS and spectrophotometer and cell number, cell viability and cell dry weight were also recorded. The application of increasing doses of chitosan significantly enhanced the accumulation of secondary metabolites, cell number and cell dry weight. The highest amount of camphor accumulation was recorded as 0.9731 µg/g (268% increase) with the application of 50 mg/l chitosan solutions. On the other hand, 100 mg/l chitosan doses significantly decreased cell viability and total anthocyanin content. The present study proved that chitosan could effectively be used as potent biotic stress to increase the production of camphor and phenolic compounds in cell suspension cultures of endemic Turkish yarrow species, *Achillea gypsicola*.

Key Words: Biotic stress, Chitin, Elicitor, Phenolic compounds

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

In vitro Callus Induction and Plant Regeneration of *Achillea gypsicola* - An Important Endemic Turkish Yarrow

Muhammed Akif AÇIKGÖZ[1*], Şevket Metin KARA[1], Ayşegül KIRLI[1]

[1]Department of Field Crops, Faculty of Agriculture, Ordu University, 52200, Ordu, Turkey
*Corresponding author: makifacikgoz@gmail.com

Abstract

In vitro propagation is a major technique for rapid multiplication and conservation of medicinal and aromatic plants as well as for the accumulation of phytochemical compounds. The aim of this study was to investigate in vitro callus induction and plant regeneration of endemic Turkish yarrow species. Callus of the leaves and stem of *Achillea gypsicola* were initiated on MS and B5 basal media supplemented with various combinations of auxins and cytokines. Callus initiation was observed in all media but with varied mass. Highest percentage of callus response was obtained B5 basal media for explants stem and leaves. The highest callus formation (100%) was obtained from the B5 medium containing the hormone combination 0.5 mg/l BAP + 0.5 mg/l NAA used for the stem segment as explant source. An efficient micropropogation protocol was developed for endemic Turkish yarrow species, Achillea gypsicola by in vitro culture of stem part of mature plant. The highest shoot multiplication (95.7%) was observed on B5 medium which includes 0.1 mg/l NAA + 1.0 KIN mg/l. Successful shoots were transferred to rooting medium supplemented with 3.0 mg/l IAA. The regeneration protocol could be used to micropropagate for conservation, commercial secondary metabolites production and further examination of bioactive constituents of this medicinal plant.

Key Words: Asteraceae, Rare endemic plant, Stem explant, Tissue culture

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Different Location and Sowing Dates Effects on Agromorphological Characteristics of Cowpea

Leyla İDİKUT[1*], Gülay ZULKADİR[1], Cumali POLAT[1], Songül ÇİFTÇİ[1], Ayşe Betül ÖNEM[1]

[1]Kahramanmaras Sutcu Imam Unıversity, Faculty of Agriculture, Kahramanmaras, Turkey
*Corresponding author: leylaidikut@gmail.com

Abstract

The research was carried out between April and November 2015 in Kahramanmaraş and Şanlıurfa conditions using different seven sowing dates (on 20 April, 5 May, 20 May, 5 June, 20 June, 5 July, 20 July). The trial was set up with four replications, according to the trial design of random blocks. The number of flowering days, the number of ripening days, plant height, number of branches of per plant, first pod height, weight of grains per plant, grain yield of Simal cowpea cultivar (*Vigna sinensis* L.) were investigated. It was founded that the locations, sowing dates and locations x sowing dates intrections had significant effects on the number of flowering days, the number of ripening days, plant height, weight of grains per plant and grain yield. It was determined that the number of branches per plant differed in terms of location and sowing dates and the first pod height was different according to planting dates, location x sowing dates interactions. The number of flowering days, the number of ripening days, plant height, number of branches of per plant, first pod height, weight of grains per plant and grain yield of Simal cowpea cultivar were showed range from 32 to72 days, from 74 to 157 days, from 28 to 176 cm, from 6 to10 unit, from 19 to 33 cm, from 3 to 24 g and from 53 to 412 kg da-1 respectively. It was determined that cowpea was too much influenced by the surrounding conditions.

Key Words: Cowpea, location, sowing dates, Agromorphological Characteristics

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Pre-Storage Calcium Applications on Physical and Chemical Attributes of Potato

Ayşegül KIRLI[1*], Kürşat KORKMAZ[2], Şevket Metin KARA[1], Özbay DEDE[1], Mehmet AKGÜN[2]

[1]Department of Field Crops, Faculty of Agriculture, Ordu University
[2]Department of Soil Science and Plant Nutrition, Faculty of Agriculture, Ordu University
*Corresponding author: aysgul_k@hotmail.com

Abstract

Pre-storage applications are of considerable importance in reducing chemical and physiological changes occurring in potato tubers during prolonged storage. The objective of this study is to determine the effect of increasing doses of pre-storage applied calcium on physical and chemical properties of potato tubers. The experiment was carried out in a completely randomized design with three replications at cold storage with +4 °C temperature and 85-90% moisture. The potato tubers were soaked in three calcium solutions (5%, 10% and 15%) for one hour, along with the control of pure water. During the storage period, certain physical and chemical changes occurring in potato tubers such as weight loses, shooting tubers and content of dry matter, C vitamin and bioactive compounds were recorded.

The maximum weight loses were found in tubers of the control application of 0% calcium, whereas increasing calcium doses significantly reduced tuber weight loses. The dry matter of potato tubers soaked in pure water solely was 18.28% and increased to 21.97% by nearly 4% at the end of nearly a four-month storage. On the other hand, the application of 10% calcium increased the dry matter rate at minimum level by almost 2%.

In conclusion, the present study suggested that, pre-storage calcium applications could reduce storage losses occurring in potato tubers.

Key Words: Bioactive compounds, *Solanum tuberosum*, shooting tuber, storage loses, tuber weight loses

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Use of Some Physiological Parameters at Heading Stage of Durum Wheat Genotypes under Rainfed Conditions

Ferhat KIZILGEÇİ[1*], Cuma AKINCI[2], Önder ALBAYRAK[2], Nihan TAZEBAY[3], Mehmet YILDIRIM[2]

[1]Department of Field Crops, Faculty of Agriculture, Sirnak University
[2]Department of Field Crops, Faculty of Agriculture, University of Dicle
[3]Idil Vocational High School, Sirnak University
*Corresponding author: fkizilgeci@sirnak.edu.tr

Abstract

The aims of this research were to assess the relationships between yield, yield components with some physiological parameters which measured at the heading stage. For this aim, eight durum genotypes were grown in randomized complete block design with four replications under rain-fed conditions during the 2015-2016 growing seasons in Sirnak ecological conditions. The traits of leaf area index (LAI), greenseeker (NDVI), SPAD, canopy temperature (CT), grain yield, thousand kernel weight, test weight, protein content, starch content, wet gluten content and zeleny sedimentation were investigated. Among genotypes were found significantly differences for LAI. The correlation analyses of the study showed positive and significant correlations between LAİ with starch (R^2=0.78**) and zeleny sedimentation (R^2=0.75**). NDVI was positively correlated with starch (R^2=0.88**). however, negative and significant correlations were identified between CT with starch (R^2=-0.72**). As a result of this work, it was determined that physiological parameters will be able to use for some traits at heading stage.

Key Words: Durum wheat, NDVI, SPAD, Canopy Temperature

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Pisum Species for Resistance to the Pulse Beetle, *Callosobruchus chinensis* L.

Hatice SARI[1], Azime ESEN[1], Fedai ERLER[2], Alper ADAK[1], Duygu SARI[1], Tuba EKER[1], Huseyin CANCI[1], Cengiz IKTEN[2], Abdullah KAHRAMAN[3*], Cengiz TOKER[1]

[1]Department of Field Crops, Faculty of Agriculture, Akdeniz University, Antalya-TURKEY
[2]Department of Plant Protection, Faculty of Agriculture, Akdeniz University, Antalya-TURKEY
[3]Department of Field Crops, Faculty of Agriculture, Harran University, Sanliurfa-TURKEY
*Corresponding author: kahraman@haran.edu.tr

Abstract

The cultivated peas are important cool-season legumes and crucial sources of protein in the world. Seeds of peas are attacked by some bruchid species (Coleoptera: Bruchidae), especially *Callosobruchus chinensis* L., during storage resulting in losses in quantity and nutritional quality. The use of resistant varieties against the bruchids has top priority as an environmentally friendly approach for sustainable agriculture. In this study, seeds of four Pisum species, two accessions of *P. sativum* L. (ACP 11 and ACP 15), two accessions of *P. elatius* (AWP 242 and AWP 249), two accessions of *P. fulvum* (AWP 600 and AWP 601) and one accession of *P. abyssinicum* (ACP 100) were evaluated using both free-choice and no-choice test methods for resistance to *C. chinensis* under laboratory conditions. Resistance was evaluated by measuring oviposition by the bruchid (number of eggs per seed), adult emergence (number of holes per seed), damaged seed rate and seed weight loss (%). According to the results, the lowest oviposition rates were observed in the seeds of two *P. fulvum* accessions, AWP 600 and AWP 601 with 4.97 and 3.84 eggs per seed, respectively. AWP 600, AWP 601, AWP 242 and ACP 11 had no holes in both tests indicating that neither adult emergence occurred nor seed weight loss. Overall the results suggest that these accessions of *P. fulvum*, *P. elatius* and *P. sativum* are completely resistant to *C. chinensis* and can be used directly or considered as useful germplasm resources for resistance to *C. chinensis* in pea breeding programs.

Key Words: Peas; Pisum accessions; pulse beetle; *Callosobruchus chinensis*; resistance

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Screening of Chickpea Accessions for Resistance Against the Chickpea Leafminer, *Liriomyza cicerina* (Rondani)

Hatice SARI[1], Fedai ERLER[2*], Fatma Öncü CEYLAN[1], Duygu SARI[1], Alper ADAK[1], Cengiz IKTEN[2], Abdullah KAHRAMAN[3], Cengiz TOKER[1]

[1]Department of Field Crops, Faculty of Agriculture, Akdeniz University, Antalya-TURKEY
[2]Department of Plant Protection, Faculty of Agriculture, Akdeniz University, Antalya-TURKEY
[3]Department of Field Crops, Faculty of Agriculture, Harran University, Sanliurfa-TURKEY
*Corresponding author: erler@akdeniz.edu.tr

Abstract

Chickpea leafminer (CLM), *Liriomyza cicerina* (Rondani) (Diptera: Agromyzidae), is an important pest of cultivated chickpea (*Cicer arietinum* L.) in the field. The use of resistant varieties against CLM has top priority as an environmentally friendly approach for sustainable agriculture. For this purpose, a 2-year field study was carried out to screen a total of 126 Cicer accessions for resistance to CLM. Resistance was evaluated using a visual scale of 1-9, where 1 = highly resistant and 9 = very highly susceptible under natural infestation conditions. The results showed that two *C. arietinum* accessions, ILC 3397 and Sierra, had a score of 9 on the scale, being 'very highly susceptible'. Three accessions, one mutant (3304) and two breeding lines (LMR 140 and LMR 160) of *C. arietinum*, were found to be 'highly resistant' with the scores ranging from 1.5 to 2. The accession, 3304, was detected for the first time in this study as a highly CLM-resistant mutant of the cultivated chickpeas while the others had been previously reported as 'highly resistant. In addition, two mutants and fourteen breeding lines of *C. arietinum* and two mutants and one germplasm of *C. reticulatum* were identified as 'resistant' having the scores from 2.1 to 3 on the scale. Overall results suggest that new resistant accessions of the cultivated chickpea with high seed yield could be used directly while all the resistant accessions of *C. reticulatum* and *C. echinospermum* could be considered as useful germplasm resources for resistance to CLM in chickpea breeding programs.

Key Words: Chickpea; Cicer accessions; chickpea leafminer; *Liriomyza cicerina*; resistance

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Salicylic Acid Application on Growth Parameters and Salt Stress Tolerance on Sweet Basil (*Ocimum basilicum* L.)

Şengül KARAMAN[1*], Emel DIRAZ[1], Halime KAHVECİ[1]

[1]Kahramanmaraş Sütçü İmam Univ., Faculty of Science and Letters, Biology Dept.
*Corresponding author: sengulk@ksu.edu.tr

Abstract

Salinity is the one of the most important stress factors that limits growth and reproduction of field and horticultural crops worldwide. Exogenous hormones and plant growth regulators are used against the negative effects of salinity on plants. In this study was aimed to reveal the responses of basil (*Ocimum basilicum* L.) plants grown against salt concentrations that treated with different salicylic acidv (SA) concentrations. For this purpose, 0,05 and 0,025 mM salicylic acid were applied to the basil seeds during 24 hours. When the seeds were seedlings, they were watered with saline solution gradually increasing to 100 mM. The plants were harvested before flowering and their growth parameters and yield values (plant heights, root length, root weight, leaf umber, leaf weight and per plant weight), chlorophyl contents were investigated. High growth and yield values were obtained from SA applications growing under normally conditions. In particular higher yielding plants were obtained from 0.05 mM SA.
All plants growing under salt stress showed a decrease in yield and growth parameters compared to the control group. Both SA applications increased the growth and yield parameters against salt stress, but there was no significant change in chlorophyll content. The better yield values were obtained from the 0.05 mM SA aplication than 0.025 mM SA. As a result, SA treatments improved the growth and yield values of basil plants under salt stress.

Key Words: *Ocimum basilicum*; salt stres; salicylic acid

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Melatonin Effect on *Ocimum basilicum* L. Morphology and Chlorophyll Content

Emel DIRAZ YILDIRIM[1*], Şengül KARAMAN[1], Burak BAHÇESULAR[1]

[1]Kahramanmaraş Sütçü İmam Universty, Science and Letter Faculity, Biology Department
*Corresponding author: emeldiraz@ksu.edu.tr

Abstract

Melatonin (N-acetyl-5-methoxytryptamine) is an indolic compound derived from tryptophan. The roles of melatonin related with diverse aspects, such as its protective role against abiotic and biotic stressors. Its function as plant regulator in rooting, growth, and other morphogenetic features, changes in melatonin levels that undergo biological rhythms, and its action as a gene expression modulator. Melatonin acts as an effective free radical scavenger against hazardous reactive molecules. The possible effects with treatment of exogenous melatonin to the plants were soon investigated. In this study, different concentration of melatonin (1,10 µM) applied to seeds of the *Ocimum bacilicum* by priming for a day. Than, seeds were sown and growing seedlings were harvested before flowering period. Shoot lenght, root lenght, root weight, leaf weight, number of leaf, total weight and chlorophyll content (chlorophyll a, b, total chlorophyll and carotenoid) were determined. At the result, melatonin applications enhanced the shoot lenght, root lenght and root weight but not effective on other morphological characters.1 µM melatonin application was increased the chlorophyll content of *O. basilicum* leaves. Application amount of the melatonin was very important on determining the effects.

Key Words: *Ocimum basilicum*; Melatonin; Chlorophyll content, Morphologic features

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Determination of Agronomic and Quality Characteristics of Some Soybean Varieties and Breeding Lines Grown as a Main Crop in Two Different Locations

Halis ARIOĞLU[1], Halil BAKAL[1], Leyla GÜLLÜOĞLU[1]

[1]Cukurova University, Faculty of Agriculture, Dep. Of Field Crop, Adana-TURKEY
*Corresponding author: halis@cu.edu.tr

Abstract

This study was conducted in two different regions as Adana and Tarsus. The experiments were conducted at the Experimental Station of Cukurova University (Adana) and Atlas seed company research station in Cicekli village (Tarsus-Içel) as a main crop. The experimental design was a Randomized Complete Block with three replications. In this study; İlini 3455, İlini 3613, İlini 3754, 34A7, Blaze, Arısoy and Atakişi varieties and Ha.16-21, Atlas, Y1-Y4 and TS1-TS-7 breeding lines were used as a plant material. The plant height, the lowest pod height, branch number per plant, pod number per plant, 1000 seed weight, oil and protein content and seed yield per hectare characteristics of the research materials were investigated. As a result, the plant height, the lowest pod height, branch number per plant, pod number per plant, 1000 seed weight, oil and protein percentage and seed yield values of the research materials varied between 101.8- 150.2 cm, 14.8-25.5 cm, 0.1-1.8 number/plant, 35.0-52.2 number/plant, 131.0-193.5 g, 19.44-21.84%, 32.73-36.50% and 2847-4793 kg/ha, respectively. The highest seed yield was obtained from Y-4 (4793 kg/ha) breeding line and Atakişi (4738 kg/ha) soybean variety.

Key Words: Soybean, Breeding Lines, Seed Yield, Oil Content, Protein Content

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Screening of Turkish sesame (*Sesamum indicum* L.) Landraces for Whitefly and Lodging Resistance

Cemal KURT[1*]

[1]Department of Field Crops, Facultu of Agriculture, University of Cukurova, Adana-TURKEY
*Corresponding author: ckurt@cu.edu.tr

Abstract

The whitefly, *Bemisia tabaci* Gennadius (Hemiptera: Aleyrodidae), is one of the world's top 100 invasive organisms. It is causing severe economic damage in over 60 crop plants as a phloem sap sucking pest or as a vector of viral diseases. One of the major yield reducing insects of sesame in Mediterranean region is the whitefly. Also lodging in crops causes significant economic losses associated with reduced yields, quality, and increase of disease. Fifty Turkish sesame landraces were screened against whitefly and lodging resistance under natural conditions. 24 of 50 sesame landraces resistance to lodging and only 2 landraces resistance to whitefly. 2 of 50 sesame landraces resistance to both whitefly and lodging. The resistant genotypes can be utilized in breeding program to evolve resistant varieties.

Key Words: Lodging, whitefly, sesame, landraces

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Analysis of Fatty Acid Composition of Some Turkish Sesame Accessions

Cemal KURT[1*], Halis ARIOGLU[1]

[1]Department of Field Crops, Faculty of Agriculture, University of Cukurova, Adana-TURKEY
*Corresponding author: ckurt@cu.edu.tr

Abstract

Sesame, *Sesamum indicum* L. is one of the oldest and important oil seed crop in the world. Oil content and fatty acid composition are very important parameters for the human consumption of oilseed crops. Twenty-four Turkish sesame accessions including seven commercial cultivars were investigated under field conditions in 2011. The variation in oil content and fatty acid composition of 24 different sesame accessions were investigated. The percentage content of oleic, linoleic acid, palmitic and stearic acids in the seed oil ranged between 37.13–41.21%, 41.99-45.52%, 9.36–9.91% and 4.71–5.11%, respectively. Oil contents were varied between 49.02 (Cumhuriyet-99) and 53.74% (Adana-Yumurtalık 2) and average was 51.7%. In sesame oil, the average contents of oleic acid and linoleic acid were 38.85% and 44.07%, respectively, and their combined average content was 82.92%, representing the major fatty acid components in the oil from the sesame accessions used in the present study. The results obtained in this study provide useful information for the identification of better parents with high linoleic and oleic acid contents for developing elite sesame varieties with traits which are beneficial to consumer health.

Key Words: Turkish sesame, fatty acid, oleic acid, linoleic acid, oil content

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Different Temperatures on Chia Seed (*Salvia hispanica* L.) Germination

Selin GEDİK[1*], Leyla Sezen TANSI[1]

[1]Çukurova University, Faculty of Agriculture, Department of Field Crops, ADANA
*Corresponding author: sgedik@cu.edu.tr

Abstract

The use of medicinal food from folk medicine to prevent diseases such as diabetes, obesity, and cardiovascular problems is now gaining momentum among the public. Seed from *Salvia hispanica* L. or more commonly known as chia is a traditional food in central and southern America. Currently, it is widely consumed for various health benefits especially in maintaining healthy serum lipid level. Chia is an oleaginous, annual herbaceous plant belonging to the mint family (*Labiatae*), and is native to southern Mexico and northern Guatemala. Today, chia is grown commercially in Mexico, Bolivia, Argentina, Ecuador, and Guatemala. Prominently grown for its seeds. The seed contains from 25% to 40% oil with 60% of it comprising (omega) ω-3 alphalinolenic acid and 20% of (omega) ω-6 linoleic acid. Chia seed is composed of protein (15–25%), fats (30–33%), carbohydrates (26–41%), high dietary fiber (18–30%), ash (4-5%), minerals, vitamins, and dry matter (90–93%). It also contains a high amount of antioxidants. This study aimed that effect of different temperatures (ºC 20, ºC 25 and ºC 30) on Chia seed germination.

Key Words: Chia seed, *Salvia hispanica* L., germination

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Detection of Some Wild Species Belonging to *Brassicaceae* Family in Bayburt Region of Turkey

Betül GIDIK[1*], Volkan GÜL[1], Abdurrahman SEFALI[2]

[1]Bayburt Univ., School of Applied Science, Department of Organic Farming Managemant, Bayburt-TURKEY
[2]Bayburt Univ., Faculty of Education, Department of Mathematics and Science Education, Bayburt-TURKEY
*Corresponding author: betulgidik@bayburt.edu.tr

Abstract

The *Brassicaceae* (*Cruciferae*) is a monophyletic group of about 338 genera and 3709 species distributed worldwide. The Brassicaceae is an important family because of included many economically important species. The aim of this research to determine the taxa of brassicaceae family in Bayburt. The plant materials are composed of plant samples of the Brassicaceae family collected and photographed during the vegetation period of 2017. Collection and photography are between 23 april and 11 agust 2017. The locations were determined based on differences in geographical structures with variable ecological conditions from Bayburt in Turkey. In this study 38 genuses and 80 species and subspecies were found in different locations. *Heldreichia bupleurifolia* Boiss. *subsp. rotundifolia*, *Aethionema caespitosum, Thlaspi lilacinum, Tchihatchewia isatidea, Bornmuellera cappadocica, Aurinia rupestris subsp. cyclocarpa, Alyssum stylare, Alyssum pseudomouradicum, Alyssum peltarioides* Boiss. *subsp. peltarioides* are endemik for region of Bayburt.

Key Words: *Brassicaceae*, *Cruciferae*, Endemic species of Bayburt, Oil crops, Biodizel crops

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Nutritional Value of Terebinth and Styrax Tree According to The Grazed Plant Parts and Seasons

Hasan DOKULGEN[1], Suleyman TEMEL[2*]

[1]Directorate of Provincial Food Agriculture and Livestock, Kilis-TURKEY
[2]Department of Field Crops, Faculty of Agriculture, Igdir University, Iğdır-TURKEY
*Corresponding author: stemel33@hotmail.com

Abstract

Small cattle breeding is one of the most important sources of livelihood in rural areas of the Mediterranean region. Many shrubs in this region are important feed sources for ruminants. On the other hand, in order to obtain maximum performance from grazing, grazing time and capacity should be determined correctly. One of the ways of achieving this is to determine the feed quality of grazing species according to seasons. In addition, the small cattles graze not only the leaves of shrub species, but shoot+leaves together. For this purpose, a study was planned to reveal the nutritional content of leaf and leaf+shoots of Terebinth and Styrax Tree in spring, summer and autumn periods in 2014. Research was established according to randomized blocks factorial experimental design with four replications in Kilis maqius and CP, NDF, ADF, ADL, DMD, DE, ME and RFV were investigated in fodder samples. According to results; the examined nutritional values were found significiant between species (except CP) and seasons, but insignificiant between feed types (except CP, NDF and RFV). Among species, it was determined that Styrax Tree had higher feed quality than Terebinth. The highest feed value was determined in spring, followed by summer and autumn. Leaves had higher HP and NYD, and lower NDF than leaf+shoots. Consequently, it was determined that both species were suitable for grazing in spring and summer periods without needing an additional nutritional. It was also revealed that animals grazing only leaves could attain a higher animal performance.

Key Words: Deciduous shrubs, Grazing time, Nutritional value, Small cattle, *Paliurus spina-christi* Mill., *Pistacia terebinthus* L.,

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Some Quality Performances Forage Grass-Legume Species and Mixtures for Pasture Establishment under Lowland Conditions of Iğdır

Seda AKBAY TOHUMCU[1*], Süleyman TEMEL[1]

[1]Iğdır University, Agricultural Faculty, Department of Field Crops, 76000, Iğdır-TURKEY
*Corresponding author: adige.seda@hotmail.com

Abstract

This study was carried out to determine the suitable forage species and mixtures for the pasture establishment under lowland conditions of Igdir during three periods. Research was carried out as randomized block design with three replications in 2014. In study, pure sowing and binary and ternary mixtures of alfalfa (A), birdsfoot trefoil (BT), tall fescue (TF), crested wheatgrass (CW) and smooth brome (SB) were investigated. The study showed significant differences between years and mixtures of crude protein (CP), acid detergent fiber (ADF), neutral detergent fiber (NDF), digestible dry matter (DDM) and relative feed value (RFV). In the research result, pure sowing forage legumes and binary mixtures had higher CD, DDM and RFV than forage grasses and ternary mixtures, but lower ADF, NDF and CPY. Also, the binary mixtures of alfaalfa with forage grasses generally had higher CP, CPY and ADF content and lower NDF and DDM than binary mixtures made with BT. With regards to RFV, however, the binary mixtures (except SB + BT) were included the same statistical group. Consequently; the most suitable binary and triple mixtures for the region were found to be mixtures containing alfalfa plant in terms of examined parameters.

Key Words: Nutrient content, Binary and ternary mixtures, Artificial pasture establishment, Lowland

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Herbage Yield, Essential Oil Content, Essential Oil Composition of Lemon Balm (*Melissa officinalis* L.) Genotypes Grown under The Central Anatolian Region

Ahmet SAY[*1], Mehmet ARSLAN[1], Erman BEYZİ[2]

[1]Erciyes University, faculty of Agriculture, Department of Agricultural Biotechnology, Kayseri, Turkey
[2]Erciyes University, faculty of Agriculture, Department of Field Crops, Kayseri, Turkey
*Corresponding author: ahmet_sy@windowslive.com

Abstract

Lemon balm (*Melissa officinalis* L.) is a perennial plant from *Labiatae* family, is a commonly used medicinal and aromatic plant in food, pharmaceutical industries and in alternative medicine. This study was conducted at Erciyes University, research farm to determine herbage yield, essential oil content and essential oil components of 5 different lemon balm genotypes in 2014 - 2015. The experimental design was a randomized complete block with three replications. The essential oil content was determined by steam distillation and essential oil composition was determined with gas chromatography–mass spectrometry. The herbage yield varied between 2600-3100 kg/ha. The genotype CA03 had highest herbage yield while the genotype ET13 had the lowest. Essential oil contents varied between 0.1 and 0.3 %. The genotype CA03 had highest essential oil content while the genotype Hatay4 had the lowest. The main essential oil components were citral, citronellal, geraniol, linalool, β-caryophyllene, cermacrene-d.

Key Words: *Melissa officinalis* L, Lemon balm, Essential oil content, Essential oil composition

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Distances Between Row on Two Faba Bean in Kahramanmaraş Conditions

Leyla İDİKUT[1*], Yunus Emre ÇABAR[1], Gülay ZULKADİR[1], Mustafa ÇÖLKESEN[1], Songül ÇİFTÇİ[1], Tolga KARABACAK[1]

[1]Kahramanmaras Sutcu Imam University, Agricultura Faculty, Field Crops Department
*Corresponding author: leylaidikut@gmail.com

Abstract

In this study, it was aimed to determine the appropriate distances between rows by applying different distance between row (40, 50, 60 cm), in 15 cm intrarow distance on Salkım and Fontes varieties and to take part in the of legume plants within rotation in the winter season. It was carried out according to the split parcel trial trial, between January and June of 2017 in Kahramanmaraş conditions. The number of flowering days, the number of pod binding days, plant height, stem diameter, pod lenght, hundred grain weight, pod weight, grain yield of faba bean were investigated. It was reported as statistically significant differences among varieties in terms of plant height, pod lenght, pod weight, hundred grains weight, the number of pod binding days of varieties. It has been noted that there is no statistical difference in terms of the investigated characteristics. As a result, it was observed that distance between row no had effect on the investigated properties and grain yield, so the distance between 60 cm rows may be suggested as it is suitable for mechanization.

Key Words: faba bean, distances between row, yield component

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A New Approach to Biosynthesis of Medical and Aromatic Plants: Metabolic Engineering of Saffron Plant

Venhar CELİK OZGEN[1*], Esra ÖZ[1]

[1]Department of Bioengineering, Faculty of Engineering, Firat University, 23119 Elazıg, Turkey
*Corresponding author: venharcelik@gmail.com

Abstract

Saffron (*Crocus sativus* Linn.) is a cultivated plant of the Crocus genus with a purplish flowers and it belongs to the ornamental family. The demand for high-scale saffron production in food, dye, perfumery and aroma industries in the world is high. Saffron is widely used in the treatment of various diseases. Saffron culturing is almost non-existent in Turkey. The flower of the saffron plant is sterile and does not produce seeds. For this reason, saffron plant reproduction is human-dependent. Saffron is obtained from dried stigmas of *Crocus sativus* L. flowers. The medical, industrial and other applications of these high value chemicals have been severely hampered by the high labor costs of processing and harvesting saffron plants. Traditional production methods do not exactly respond to the saffron demand. The ability to synthesize safran is not common in plant species. It is therefore important to develop new low-cost strategies to produce these apocarotenoids in large quantities. Metabolic engineering of biological systems has the potential to be a scalable, selective and cost-effective way to produce high-value chemicals with good yield and purity. Metabolic engineering is known to be an effective area in the production of secondary metabolites. Through this area it is thought that heterologous biosynthesis can be realized by transferring apocarotenoid pathway genes to microorganisms for the production of saffron metabolites. Thus, the production of saffron metabolites can be planned without the need for planting.

Key Words: Medical plants, saffron, apocarotenoid, biosynthesis

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Invastigation of Some Chemical Characteristics of *Thymus transcaucasicus* Ronniger Growing in Van Province-Turkey

Nese OKUT[1*]

[1]Department of Field Crops, University of Yuzuncu Yil Van-TURKEY
*Corresponding author: neseokut@gmail.com

Abstract

Thymus is one of the important members of the *Lamiaceae* family which comprises more than 220 taxa throughout the world. The Turkish flora solely comprises 39 Thymus species, 24 of which are endemic. The flowering parts and leaves of Thymus species have been mainly used for medicinal properties. This study aimed to an investigation carried out on the essential oil constituents of *Thymus transcaucasicus* growing wild form in Van area in the Eastern part of Turkey. Eleven samples were collected from different locations and the essential oils isolated by hydrodistilation from aerial parts were studied using gas chromatography-mass spectrometry (GC-MS). After quantified the essential oils, Thymol was found to be main constituent and its amount ranged from 24.33-77.26. For identified components, Bootstrap hierarchical clustering analysis described the samples into different grouped components. Further, we analyzed the major and minor mineral contents of *Thymus transcaucasicus* samples collected from study regions of soils. Soil and the portions of above-ground of naturally growing of *T. transcaucasicus* plants were sampled thought different sites from Van County. Soil and plants samples were analyzed in terms of nutrient elements content. Soil analyses provided that a considerable deficiency for phosphorus, and organic matter content. On the other hand, the soils from five locations had sufficient/excessive content for manganese, zinc, copper, iron and lime. Results shows that Fe and Ca concentrations were very high for plant samples. Essential oil components shows different character caused by differences in soil properties.

Key Words: *Thymus transcaucasicus*, plant and soil nutrient, essential oil constituents

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

An Analysis with Bioinformatic Tools for Early Nodulin Protein in *Vicia faba*

Barış EREN[1], Fatih DEMİREL[1*], Serap DEMİREL[2]

[1]Iğdır University, Agriculture Faculty, Field Crop Department, Iğdır/TURKEY
[2]Yüzüncü Yıl University, Science Faculty, Molecular Biology and Genetic Department, Van/TURKEY
*Corresponding author: speed-fd@hotmail.com

Abstract

Nitrogen fixation is one of critical process in some plants. Some plant roots establish a close relationship for nitrogen fixation with Rhiizobium bacteria and nodule-specific proteins called as nodulin appears after this association. Depending on the duration of nodule development, the nodule proteins are divided into two groups; early nodulin and late nodulin. Proteins in *Vicia faba* were downloaded from http://www.phytozome.net. A search of *Vicia faba* proteins were performed by using the BLASTP program in NCBI. Twelve protein for Vicia faba early nodulin were obtained in NCBI database. Amino acid sequences were aligned using T-COFFEE and Myers-Millers matrix. UPGMA dengrogram was obtained using MacVector 14.0 software with bootstrap analysis. Signature motifs in early nodulin protein amino acid sequences were determined with PROSITE database. Conservation and Hydropathy of early nodulin protein in beans were assessed. Based on our phylogenetic results, this proteins were divided into two main groups and they are not similar to each other. This study can be usefull for understanding of structural and functional features of early nodulin protein.

Key Words: Nitrogen fixation, early nodulin protein, *Vicia faba*, bioinformatic

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Different Solvent Usage in Oil Extraction on Fatty Acid Composition of Fenugreek Plant (*Trigonella foenum graecum* L.)

Erman BEYZİ[1*], Adem GÜNEŞ[2], Mehmet ARSLAN[3]

[1]The University of Erciyes, Faculty of Agriculture, Department of Field Crops, Kayseri-TURKEY
[2]The Univ. of Erciyes, Faculty of Agriculture, Dept. of Soil Science and Plant Nutrition, Kayseri-TURKEY
[3]The Univ. of Erciyes, Faculty of Agriculture, Department of Agricultural Biotechnology, Kayseri-TURKEY
*Corresponding author: ermanbeyzi@gmail.com

Abstract

Fenugreek is an important medicinal and aromatic plant belonging to the family of *Fabaceae* which is known by names such as Boy otu, Buy otu, Çemen otu in our country. The seeds used in the experiment were harvested from the kind garden in 2016. This study was carried out with the aim of determining the effect of different solvents used to obtain oil on fatty acid composition in fenugreek plant. For this purpose, two different solvents (hexane and ethanol) were used to determine oil. At the end of this study, five fatty acid components were detected. Among these components, linoleic acid is the main component, followed by linolenic acid, oleic acid, palmitic acid and stearic acid respectively. The highest oleic acid (12.34%) and palmitic acid contents (9.04%) were obtained from hexane application while the highest linoleic acid (42.78%), linolenic acid (29.32%) and stearic acid contens (4.13%) were obtained from ethanol application. As a result, it has been determined that the use of different solvents may affect the proportions of fatty acids when the oil is obtained.

Key Words: Fenugreek, *Trigonella foenum-graecum*, fatty acid composition, solvent

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Safflower - Advantages of Novel Oil Extraction Methods and Potential Applications for Food Industry: Advances to Other Oil Crops

Safa HACIKAMİLOĞLU[1*], Selim ŞILBIR[2], Orhan KURT[1]

[1]Ondokuz Mayis University, Faculty of Agriculture, Dept. of Field Crops, Samsun, Turkey
[2]Iğdır University, Faculty of Engineering, Dept. of Food Engineering, Iğdır, Turkey
*Corresponding author: safa.hacikamiloglu@omu.edu.tr

Abstract

Safflower (*Carthamus tinctorius* L.) is a multiple purpose crop generally grown for oil production. The plant belongs to *Asteraceae* family and a far relative to sunflower (*Helianthus annuus*). The safflower oil is considered to be a better oil. It contains 8-10% oleic and 70-80% linoleic acids which are higher than other commercial oil crops. Safflower oil has numerous applications in food, cosmetics, pharmaceutical, biodiesel production and feed industry. An added advantage of safflower oil is a lower cost of production thus can become an alternate option for those who cannot afford to buy olive and other functional oils. The crop is resistant to cold and drought and is a better choice for crop rotation in areas with unfavorable conditions. Oil extraction methods of safflower don't require special equipment and the process can be done successfully in sunflower or cottonseed crushing facilities. Novel technologies such as pressurized liquid extraction (PLE) and supercritical extraction (SCE) are also very efficient for safflower. Safflower oil can be added to other edible vegetable oils to increase CLA (Conjugated Linoleic Acid) content in order to increase health benefits (prevention of atherosclerosis, osteoporosis, hepatoprotective properties, controlling melanoma based cancers, antidiabetic activities, post-menstruation syndrome) and making it a low-cost functional oil. It is also a margarine component in the food industry. In this paper, benefits of safflower cultivation in the southeast region of Turkey and potential use of its oil as a functional food ingredient, advances, easy plantation, health beneficial advantages over other vegetable oils will be discussed.

Key Words: Safflower oil, Potential oil crops, Novel extraction methods, Supercritical extraction, Pressurized liquid extraction

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Useful and Harmful Insects Seen in Wheat Varieties which was Grown in Bingöl Conditions

Emin KAPLAN[1], Senem SABANCI BAL[2*], Mehmet AYÇİÇEK[2]

[1]Bingöl University, Faculty of Agriculture, Plant Protection Department, BİNGÖL
[2]Bingöl University Faculty of Agriculture Department of Field Crops, BİNGÖL
*Corresponding author: senemsabanci@hotmail.com

Abstract

Wheat used as a basic nutrient throughout the world, is one of the most important strategic crops in human nutrition. Wheat is the most produced agricultural product both in the world and in our country. The raw material of human food is also the raw material of wheat. Wheat is raw material of bread that is the basic nutrient of human food. Flour obtained by processing wheat, is also used in the production of other foods.In short, flour and flour products which are the derivative of wheat that can be consumed at each meal of the day, have become an indispensable part of our life.Population density of harmful insects, which are the limiting factors of yield and quality in wheat growing, which is our source of life, is very important.Thus, this research was carried out in the field of Bingol University Agricultural Application and Research Center in 2015-2016. In the study, it carried out 17 different wheat varieties were selected as Sakin, Cumhuriyet-75, Kıraç-66, Bezostaja, Gerek-79, Gonen- 98, Pehlivan, Karahan, Dağdaş, Demir, Lancer, Alparslan, Ayyıldız, Nenehatun, Karasu, Doğu-88 and Sönmez, as a result of weekly surveys, it have been identified beneficial and harmful insects. From these pests, Eurygaster integriceps Put. is the main pest of wheat. In addition, it have been identified from harmful insect: *Zabrus* spp., *Aelia* spp, Pachytychius hordei, Nezara Virudula, Dolycoris baccarumandfrom useful insect: Cocinellaseptempunctata, Chrysoperla carnea, Nabis spp..

Key Words: Wheat; Useful and Harmful Insects; Bingol

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Some Chickpea (*Cicer arietinum* L.) Varieties Bingöl Ecological Conditions Determination of Efficiency and Quality Properties of Diversity

Lale GÜNDOĞDU[1], Mehmet AYÇİÇEK[1], Senem SABANCI[1*]

[1]Bingöl University, Agriculture Faculty, Department of Field Crops, Bilgöl-TURKEY
*Corresponding author: senemsabanci@hotmail.com

Abstract

The purpose of this study is that the general distribution of agricultural areas of Bingol province is examined, it is observed that plant production concentrates on field crops. The total area allocated for agricultural land is 354,618, of which 83,226 decares is left blank (Tüik, 2015). Our work was carried out for one year on the ground belonging to Bingöl University Agricultural Application and Research Center in 2016. The experiment was set up in three replications, according to the design of random blocks. It was grown without watering in field conditions. Işık, İnci, Yaşa and Azkan varieties of chickpea varieties were used, including Turkey. In the study, yield, plant height, first pod height, number of side branches, number of pods per plant, number of seeds, 100 seed weight, harvest index and protein ratio were investigated. There were statistical differences in the characteristics examined among the varieties. The highest yield values of the experiment were found in Işık variety. The lowest yield value was found in the Azkan variety. The Azkan variety (42,3 cm) was identified as the tallest plant species. Hundred grain weight were found between 31.5 g (Azkan) and 37.1 g (Işık-05). The highest value in terms of the harvest index was 71.2 % with Azkan variety. The species with the lowest harvest index in the study was Azkan variety with 23.6 %. In terms of protein ratio, the highest value was Azkan variety with 22.1% and the lowest protein ratio was Yaşa-05 variety with 16.6%. According to the results of a yearly study in Bingol ecological conditions, it can be said that the Işık-05 is a suitable variety for Bingol conditions.

Key Words: Bingol; Chickpea; Adaptation; Yield; Quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Oil Crops Production and Problems in GAP Area

Osman ÇOPUR[1*], Ceren ODABAŞIOĞLU[1]

[1]Harran University, Agriculture Faculty, Department of Field Crops, 63190, Şanlıurfa-TURKEY
*Corresponding author: ocopur@harran.edu.tr

Abstract

The Southeast Anatolia Project, briefly SAP will cover about 9 provinces (Adıyaman, Batman, Diyarbakir, Gaziantep, Kilis, Mardin, Siirt, Şanlıurfa, Şırnak) are located on the Euphrates and Dicle basins and up to Mesopotamian plains. When the project is completed, 1.8 million hectares of agricultural land will be irrigated. In this context, a total of 19 dams, 13 hydroelectric power plants, were completed in the SAP area; about 1032.6 km of irrigation main canal was built. As of 2016 year, a total of 507.784 hectares area has been irrigated; 28.2% (w/v) of irrigation projects were taken into operation.

In the SAP area is consist of 75,000 km^2 and oilseed crops, which are too low to be tested before the project, are projected to contain approximately 20% (w/v) of the oil plants. However, since 1995 the Harran Plain was given water, there has not been a significant increase in the production of oilseed plants. The SAP area is suitable for climatic and soil conditions for the cultivation of all oil plants in field crops. Many studies have been carried out on the growth of oil plants such as sunflower and soybean, rapeseed, sesame and partially peanuts. In these projects, quite satisfactory results have been obtained for the production of oil plants.

Oil, which is very important for human nutrition, imparts flavor and aroma both for energy and for use in other food sources. In our country, about 3-3.5 billion dollars are paid every year for import, especially soybean and its derivatives, as well as other oil and oilseed products. While a part of the imported oil is processed and re-exported, a large part of it is consumed domestically for the needs of the country.

In this review, the production and marketing of oilseed plants in the SAP area will be discussed and the production potential of the SAP field will be explained in order to reduce oil seed and oil imports.

Key Words: GAP Project, Oil Seed Crops, Production Potential

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Response to Nitrogen and Profitable Variety Preference in Wheat

İrfan ÖZBERK[1*], Remzi ÖZKAN[2], Fethiye ÖZBERK[3]

[1]Harran University Faculty of Agriculture Department of Field Crops, ŞANLIURFA
[2]Harran University, Graduate School of Natural and Applied Sciences, Field Crops Department, ŞANLIURFA
[3]Harran University Akçakale Vocational High School, ŞANLIURFA
*Corresponding author: ozberki@hharran.edu.tr

Abstract

This study aimed to assess the responses of widely grown 5 bread wheats (Ceyhan-99, Kaşifbey-95, Nurkent, Panda and pehlivan) and 5 durum wheat (Aydın-93, Fırat-93, sarıçanak-98, Svevo and Şahinbey) varieties onto increasing nitrogen levels (6, 10, 14, 18 and 22 kg da^{-1}) for some yield components and grain yield in the experimental field of Faculty of Agriculture in 2014-15 growing season. A split plot experimental design with 3 replications was employed. Nitrogen ratios were assigned at the main plots and the varieties at the subplots respectively. Various agronomical characteristics and grain yield were scored. Data obtained from experiment were subjected to analysis of variance, correlation and regression analyses. The highest average values were obtained from the nitrogen ratio of 18 kg da^{-1}. Nitrogen ratios upward and downward from 18 kg da^{-1} resulted in decreasing average values for all characteristics under study. Bread wheat variety of Kaşifbey-95 (518 kg da^{-1}) and durum wheat variety of Aydin-93 (538,1 kg da^{-1}) were found to be highest yielding at 18 kg da^{-1} nitrogen application. The coefficients of correlation between some agronomical characteristics vs. grain yield were found to be significant. Regression between such characteristics vs. grain yield also turned out to be significant. It was found that the regression equations with the high coefficients of determinations (R2%) can be used for yield estimates. Bread wheat variety of Ceyhan-99 (86,33 kg da^{-1}) and Pehlivan (83,66 kg da^{-1}), durum wheat variety of Şahinbey (155,23 kg da^{-1}) and Sarıçanak-98 (124,8 kg da^{-1}) were found to be most responsive and profitable cultivars to increasing nitrogen application.

Key Words: Bread and durum wheat varieties, response to nitrogen, correlation, regression, profitability

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Relations Between Forage Yield and (Normalized Difference Vegetation Index) NDVI Value of Different Sowing Times and Densities in Mixtures of Triticale (*Triticosecale* Witt.) with Hungarian Vetch

Ahmet GÜNEŞ[1*], Hasan KOÇ[1], Nurberdy GUMMADOV[2]

[1]Bahri Dağdaş International Agricultural Research Institute, Konya-TURKEY
[2]CIMMYT, Ankara- TURKEY
*Corresponding author: agunes977@gmail.com

Abstract

This research carried out in Konya ecological conditions to determine the relationship between forage yield and normalized difference vegetation index on of different sowing time and sowing density of Hungarian vetch + triticale mixtures.
Trial conducted by the split plot in randomized complete block desing with three replications at Bahri Dagdas International Agricultural Research Institute's research field in September 2007- May 2008.
In this study, Tarm beyazı-98 Hungarian vetch cultivar (70 % (w/w)) and Melez-2001 triticale (30 % (w/w)) cultivar mixtures were used as the material, three sowing date (September 01, September 20, October 10 and October 31) and four sowing density (200, 300, 400 and 500 seedm-2) were applied. Trial was conducted on 20 May 2008, the NDVI measurements.
As a result, while the highest forage yields obtained from 20 September sowing time with 6926.4 kg da^{-1}, 300 seedm-2 sowing density with 6160.4 kg da^{-1}. When the sowing time x sowing density interactions were evaluated, the highest value was obtained from 8389.2 kg da^{-1} at the planting frequency of 300 seedm-2 on October 20th. In this work, while the highest NDVI values recorded at 20 September (0.859) sowing time, 500 seedm-2 sowing density (0.841). When the sowing time x sowing density interactions were evaluated, the highest value was obtained with 0.867 at the sowing density of 300 seedm-2 on October 20th. The relation between yield and NDVI value was determined statistically significant at positive direction.

Key Words: Hungrian vetch+barley mixture, sowing time, sowing density, forage yield, NDVI

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Usage of Incorrect Plant Drougs in Public Centers of Şanlıurfa Province

Mustafa ASLAN[1*]

[1]Harran University, Faculty of Education, Department of Biology Education, Şanlıurfa-TURKEY
*Corresponding author: mustafaaslan@harran.edu.tr

Abstract

This study was carried out in order to determine the harmful drogans which are used by the wrong and unconscious use of some beneficial plants which have important place for the people living in Şanlıurfa city center. This research was carried out in January-December 2016 in Şanlıurfa province center and collected information about the people who collected these plants and brought them to sell them in the neighborhood markets and interviewed people and transfers directly using these plants for different purposes. Plants P.H. Davis' scientific name using the flora of Turkey and the East Aegan Island has been identified by taxonomic diagnosis of these species. As a result of the study, local and scientific names of these misused plants used in Şanlıurfa province center were collected by evaluating the information about the harmful effects of these plants on human health as a result of their being used for what purpose but wrongly and unconsciously. In addition, 40 medical and aromatic plants sold in the market and in the markets were found in Şanlıurfa center. However, it has been observed that 14 plant species of 14 genera belonging to 12 plant families and incorrect usage at the level of the subspecies.

Key Words: Şanlıurfa, Harmful drogans, Medical and Aromatic plants

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Planting Time and Plant Densities on Some Yield Parameters in Second Crop Sesame Cultivation

Servet ABRAK[1*], Ahmet YILMAZ[2]

[1]GAP Agricultural Research Institute Directorate, Şanlıurfa-TURKEY
[2]University of Harran, Faculty of Agriculture, Department of Field Crops, Şanlıurfa-TURKEY
*Corresponding author: servet_abrak63@hotmail.com

Abstract

This research was conducted so as to determine the effects of different planting time and plant densities on yield parameters of second crop sesame (*Sesamum indicum* L.) at the GAP Agricultural Research Institute Talat Demirören Research Station in 2015 and 2016 years in Şanlıurfa location (Turkey). Trial was set up according to randomized blocks split split plots experimental design with 3 replications. The main parcels planting times were planting times (1 June, 15 June and 1 July), sub-parcels were 2 different inter-row spaces (35 and 70 cm), and sub-sub parcels 4 different intra-row spaces (5, 10, 15 and 20 cm). The conclusions of the two-year study have shown that; while the plant height and number of seeds per capsule were almost statistically significant in terms of planting time and intra-row spaces the number of capsules per plant were entirely significant in terms of planting time and plant densities; on the other hand, the triple interaction (planting time x inter row x intra row) for these three parameters have shown statistically significant results. But, the number of branches per plant has shown fluctuations by the years. According to the planting time x inter row x intra row interaction analyses; the highest plant height (141.00 and 131.67 cm) were obtained from the 35x15 and 70x10 cm plant densities on June 1 and June 15 in 2015 and 2016 growing seasons respectively, the highest number of capsules per plant (130.33 and 130.33 pieces) were obtained from the 70x20 cm plant density on June 1 in both 2015 and 2016 years, and the highest number of seeds per capsule (55.33 and 59.33 pieces) were obtained from the 35x15 and 35x20 cm plant densities on June 1 in 2015 and 2016 years.

Key Words: Sesame, planting time, plant density, plant height, number of capsules per plant

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Production of *Arthrospira (spirulina) platensis* in Different Volumes (small scale) Using Nutrient Medium Containing Geothermal Water

Betül GÜROY[1*], Derya GÜROY[1], Serhan MANTOĞLU[1], Onur KARADAL[2]

[1]Yalova University
[2]Katip Çelebi University
*Corresponding author: betulguroy@yahoo.com.tr

Abstract

The culture medium components influence on the production of *Arthrospira (spirulina) platensis*. The objective of this study was to evaluate the Arthrospira platensis growth potential for biomass production under different geothermal mediums. In this study, the Schlösser medium was partially replaced with different ratios of İncirliova (Aydın) and Armutlu (Yalova) geothermal waters from Turkey and total of 19 experiments were carried out in controlled conditions with triplicates. Experimental cultivations were performed in Erlenmeyer flasks of 500 mL and 2 L containing 210 mL and 1400 mL in geothermal medium, respectively.
End of the trial, values of optical density (A750) of Spirulina culture experiments were determined that ranging from 0.56 (experiment 14) to 1.68 (experiment 10) in 250 mL volume. The best production was determined in 25% Armutlu geothermal water + 75% Schlösser medium in 250 mL. The values of optical density of Spirulina culture were determined that ranging from 0.52 (experiment 5) to 1.45 (experiment 11) in 2 L. The best production was determined in 50% Armutlu geothermal water + 50% Schlösser medium in 2 L. When combined with the Schlösser medium and Armutlu geothermal water, more biomass production was observed.
The results showed that the Schlösser medium can be replaced with geothermal water for increasing biomass production. This study was funded by the Republic of Turkey Ministry of Food, Agriculture and Livestock, General Directorate of Agricultural Research and Policies with the Project Number 16/R&D/22.

Key Words: Spirulina biomass, geothermal water, Spirulina medium

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination Characteristics Related to Yield Components and Adaptation Ability Chickpea Varieties in Konya Ecological Conditions

Hakan BAYRAK[1*], Ramazan KELEŞ[1]

[1]Bahri Dağdaş International Agricultural Research Institute, KONYA
*Corresponding author: khanbayrak@gmail.com.tr

Abstract

In Turkey, chickpea production area is about 395.309 ha and its annual production about 470.000 tones (yield 119 kg/da). Konya constituted nearly 7.4% of this chickpea production area with 20.384 ha growing area and annual yield is about 34.589 tones (Yield 143 kg/da). In the region, chickpea has an important role as a key rotation plant. The aim of this study was to determine characteristics related to yield components and adaptation ability chickpea variety in Konya ecological conditions.

Total, The most cultivated 9 varieties (Azkan, Çakır, Akça, Gökçe, Akçin 91, İnci, Çağatay, Sezenbey, Zuhal) were included as research materials. The experiments were carried out according to Randomized Complete Block Design with 4 replications in experimental field of Bahri Dağdaş International Agricultural Research Institute in 2015, 2016 and 2017. The emergence rate, periods of blooming and ripening, antracnous disease, first pod height, plant height, number of ped per plant, grain yield, and hundred-seed weight were analyzed within the study.According to the average three-year trial; for all components excluding emergence rate differences among the varieties were determined as statically important ($p<0.01$). Highest emergence rate was observed Akçin 91 varieties (%91.6). Shortest vegetation period was recorded for Çakır varieties (97.75 days) while longest blooming period was recorded for Gökçe varieties with 53.91 days. Lowest antracnous disease severity (scale 1.16) with highest the first pod height (21.85 cm) Azkan were found over than other varieties. The highest plant height vas observed Akçin 91 varieties (43.25 cm) and highest number of ped per plant was observed Zuhal varieties (90.25). The heaviest hundred-seed weight was determined from Sezenbey (41.49 g.), the highest grain yield was determined from varieties of Akça with 155,64 kg/da.

According to the results of three years of study; positive correlations (at 1% eror level) were detected between grain yield with periods of blooming (r= 0,638**), plant height (r= 0,605**) and first pod height (r= 0,568 **). In addition plant height with periods of blooming (r= 0,829**) and first pod height (r= 0,826**) positive correlations (at 1% eror level) were observed.

Key Words: Chickpea (*Cicer arietinum* L.),, adaptation, grain yield, yield components

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Research on Molecular Markers of *Triticum durum* with *Triticum dicoccoides* Crosses

R. Refika AKÇALI GIACHINO[1*], Süer YÜCE[1]

[1]Ege University, Faculty of Agriculture, Department of Field Crops, 35100 Izmir/ Turkey
*Corresponding author: refikagiachino@hotmail.com

Abstract

Protein content is the most important in durum wheat breeding. Various studies were made about increasing protein content for long years. However genetic basis of culture wheats was narrowed because of breeding programes especially aimed at high yield. Wild wheats have the best important reserves of the genes in point of both resistance to diseases and quality characters. Because of this, using probability of wild tetraploid *Triticum dicoccoides* as a source on occunt of high content of protein was researched in the study. In the research project, wild tetraploid *T. dicoccoides* was crossed with eight commercial of durum wheats (Ege-88, Yavaros-79, Altar-84, Kunduru-1149, Kızıltan-91, Gediz-75, Salihli-92 and Chen S) and molecular marker researches on the parents and their F1, F2, F3 offsprings were observed. As a result of this study, it was determined that genetic markers can be integrated into reliable breeding programs towards increasing amount of protein to desirable quality of durum wheat for industry.

Key Words: Durum wheat, *Triticum dicoccoides*, *Triticum durum*, Genetic Markers, RAPD

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Yield and Quality Performances by using Biplot Analysis of Some Bread Wheat (*Triticum aestivum* L.) Genotypes in Irrigated Conditions

Mehmet KARAMAN[1*], İrfan ERDEMCİ[1], Sertaç TEKDAL[1]

[1]GAP International Agricultural Research and Training Center, Diyarbakır-TURKEY
*Corresponding author: karaman2178@hotmail.com

Abstract

This study was conducted in randomized complete block design with 4 replications and 2 locations (Diyarbakir and Ceylanpinar) irrigation conditions during 2014-2015 growing season. The purpose of the study is to determine genotypes with high yield, large adaptation ability and high quality. 20 advensed bread wheat lines and 5 check were evaluated. According to result of analysis of variance, significant differences were determined for, test weight (TW), thousand grain weight (TGW), protein content, zeleny sedimentation and grain yield at the level of 1%. Biplot analysis method was performed to evaluated relation between traits and genotyp-traits. When the variance and Biplot analysis results were evaluated together; respectively, the lines 21 for zeleny sedimantasyon, 11 for protein content, 12, 13 and 16 for TGW, 3 and 7 for TW, 3, 12, 14 and 18 for grain yield are best genotypes. In the direction of the results obtained; also, line number 12 has registered as a candidate varieties and these lines should be evaluated as parents in breeding programs.

Key Words: Bread wheat, yield, quality, GGE-biplot

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Ethephon on Some Quality Characteristics of Wheat Plant (*Triticum durum*)

Arzu MUTLU[1], Abdullah ÖKTEM[2*]

[1]Harran University, Akçakale Vocational High School, ŞANLIURFA
[2]Harran University, Agriculture Faculty, Field Crops Department, ŞANLIURFA
*Corresponding author: aoktem@harran.edu.tr

Abstract

This study was carried out in additional irrigated conditions in the Harran Plain during the 2008-2009 and 2009-2010 growing seasons. This study aimed to determine the effects of different doses of ethephon applications on quality characteristics of some durum wheat cultivars. Aydın-93 and Alibaba durum wheat varieties were used as crop material in the study. In the trial, nine ethephon doses (0, 240 g ha^{-1}, 360 g ha^{-1}, 480 g ha^{-1}, 600 g ha^{-1}, 720 g ha^{-1}, 840 g ha^{-1}, 960 g ha^{-1}, 1080 g ha^{-1}) were applied. According to the combined analysis results of two years; protein content, sedimentation and gluten amount increased with parallel increasing doses of ethephon in wheat varieties. The highest protein ratio was obtained from 720 g h^{-1} ethephon application in both Aydın-93 and Alibaba varieties. But no statistical differences were observed among 840 and 960 g h^{-1} ethephon applications. Sedimentation value increased from control application (14.75 ml) to 840 g h^{-1} ethephon application (28.25 ml) in Aydın-93 cultivar. In Alibaba wheat variety, sedimentation value increased from 16.25 ml (control) to 27.50 ml (840 g h^{-1} ethephon). The highest sedimentation value was obtained in 840 g h^{-1} ethephon application in Aydın-93 and Alibaba varieties. The gluten amount was 29.39% in the control application but the highest gluten amount was seen at 720 g h^{-1} ethephon application (46.675%) in Aydın-93 variety. Gluten amount of Alibaba wheat variety was 31.613% in control application. But an increase was seen at 840 g h^{-1} ethephon application and gluten amount increased to 55.037%.

Key Words: Ethephon; Wheat; Protein; Gluten; Sedimentation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Ethephon on Some Morphological Characteristics of Barley Plant (*Hordeum vulgare*)

Arzu AĞIRMATLIOĞLU MUTLU[1], Abdullah ÖKTEM[2*]

[1]Harran University, Akçakale Vocational High School, ŞANLIURFA
[2]Harran University, Agriculture Faculty, Field Crops Department, ŞANLIURFA
*Corresponding author: aoktem@harran.edu.tr

Abstract

This study was carried out in additional irrigated conditions in the Harran Plain during the 2008-2009 and 2009-2010 growing seasons. This study aimed to determine the effects of different doses of ethephon applications on barley varieties. Sur and Yerli black barley varieties were used as crop material in the study. In the trial, nine ethephon doses (0, 240 g ha^{-1}, 360 g ha^{-1}, 480 g ha^{-1}, 600 g ha^{-1}, 720 g ha^{-1}, 840 g ha^{-1}, 960 g ha^{-1}, 1080 g ha^{-1}) were applied. According to results of two years combined analysis; spike length, spikelet number of spike and seeds number of spike values decreased with parallel to the increasing doses of ethephon in the barley varieties. But, heading and maturation period values increased with increasing ethephon doses in the barley varieties. When years and barley varieties were evaluated together, the highest spike length value was seen at 0 g ha^{-1} ethephon application (7.703 cm) and the lowest spike length value was seen at 1080 g ha^{-1} ethephon application (5.591 cm). The lowest spikelet number of spike was observed in 1080 g ha^{-1} Ethephon application (15.571 number/spike). Seeds number of spike was 27.963 number/spike in control application, whereas it decreased to 13.719 number/spike in 1080 g ha^{-1} ethephon application. The lowest heading period was observed in the 0 g ha^{-1} ethephon application (103.4 days), but the highest heading period value was obtained from 1080 g ha^{-1} ethephon application (111.2 days). Maturation period was the lowest at 0 g ha^{-1} ethephon doses (142.63 days) while the highest maturation period was 153.56 days at 1080 g ha-1 ethephon application.

Key Words: Ethephon; Barley; Harran Plain; Morphological characteristics

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Cotton Fiber Quality in the Perspective of Cotton Farmers

Ceren ODABAŞIOĞLU[1*], Osman ÇOPUR[1]

[1]Harran University, Faculty of Agriculture, Department of Field Crops, Şanlıurfa-TURKEY
*Corresponding author: cerenodabasioglu@harran.edu.tr

Abstract

The aim of this study was to evaluate the perspectives of cotton fiber quality on cotton cultivation enterprises engaged in Sanliurfa province. The data used in this study was obtained by the way of survey which based on interviews with 50 cotton cultivation enterprises. In the study, in an interview with the cotton producers, we asked them personal questions such as educational backgrounds, land assets, how many years are they hold on cotton production, whether they have any income except the production of cotton and regarding the overall cotton cultivation questions as when they carry out cotton plantation, which irrigation method they use, fertilizer use and the amount and timing of fertilizer, weeds they cope with and weed struggle methods, harvesting time and harvest methods, yield per dechare. It has emerged that in the absence of cotton cultivation farmers don't have any income and they don't continue cotton production without cotton cultivation support. Farmers use high quality and high yield given cotton seeds also they receive assistance from the relevant persons or entities during the cultivation so they obtain high yield. It's emerged that farmers don't take the necessary measures for the collection of clean cotton during the harvest also pay no attention for this while they know merchants and ginning factories pay attention to some characteristics of cotton such as variety, quality, cleanliness and efficiency.

Key Words: Harran plain, cotton cultivation, cotton gin, fiber quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Different Phosphorus Doses on Yield and Yield Components of Acceptable Rate of Vetch and Triticale Mixture for Harran Plain Condition

Tahir POLAT[1], İbrahim Halil CÖMERT[2], Gökhan AKKAYA[3*]

[1]Harran University, Faculty of Agriculture, Department of Field Crops, ŞANLIURFA
[2]GAP Agricultural Research Institute, ŞANLIURFA
[3]Harran University, Graduate School of Natural and Applied Sciences, Field Crops Department, ŞANLIURFA
*Corresponding author: gokhanakkaya63@gmail.com

Abstract

This research was conducted in order to determine the effects of different doses of phosphorus levels on yield and yield components for mixture rate of %40 vetch and %60 triticale under Harran Plain conditions at the GAP Agricultural Research Institute Talat Demirören Research Station in 2012-2013. According to the trial results; different phosphorus doses create a significant difference only on the height of vetch plant statistically; while the highest plant height was obtained from the application of 10 kg da^{-1} phosphorus dose with 88.93 cm, the lowest plant height was obtained from the application of 0 kg da^{-1} phosphorus dose with 62.80 cm. The highest herbage yield was obtained from the application of 10 kg da^{-1} phosphorus dose with 4744.6 kg. Other features which were examined in this study (triticale plant height (cm), herbage yield (kg da^{-1}), hay yield (kg da^{-1}), dry matter rate (%), vetch rate in hay yield (%) crude protein yield (kg da^{-1})) were found no statistical differences.

Key Words: Vetch, Triticale, Mixture, Phosphorus

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Different Doses of Farm Manure and Phosphorus Fertiliziation in Natural Grasslands of Kuyulu Village of Adıyaman Province

Tahir POLAT[1], Ömer Faruk YILDIRIM[2], Gökhan AKKAYA[3*]

[1]Harran University, Faculty of Agriculture, Department of Field Crops, ŞANLIURFA
[2]Viranşehir Agriculture and Livestock District Directorate, ŞANLIURFA
[3]Harran University, Graduate School of Natural and Applied Sciences, Field Crops Department, ŞANLIURFA
*Corresponding author: gokhanakkaya63@gmail.com

Abstract

This research was conducted in Kuyulu village of Adıyaman province between 2006-2009 years for determinate the effects of different doses of farm manure and phosphorus fertilization in natural grasslands, according to Split Parcels in Random Parcels research design as 3 replicate. Five different doses of farm manure (0, 1, 2, 3 and 4 tons da^{-1}) and five different doses of phosphorus (0, 3, 6, 9 and 12 kg da^{-1}) combinations was applied in fertilization studies. According to the results of three yearly studies; increasing doses of farm manure and phosphorus increased the yield of hay, grains and legumes to the efficiency of the participation rate of the vegetation, the crude protein content and grazing capacity. While the highest hay yield (240.91 kg da^{-1}) was obtained from 3 tons of farm manure and 12 kg da^{-1} phosphorus application, the lowest value (98.68 kg da^{-1}) was obtained from no applied (control) plots. According to the results of three-yearly averages, the most profitable income was obtained from 1 ton da^{-1} farm manure and 12 kg da^{-1} phosphorus combinations with 58.16 TRY.

Key Words: Farm Manure, Phosphorus, Fertilization, Grassland, Hay Yield

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Seed Yield and Yield Components at Some Sesame (*Sesamum indicum* L.) Genotypes in Sanliurfa Province

Hakan Ünal AĞAÇ[1*], Osman ÇOPUR[2]

[1]Harran University, Graduate School of Natural and Applied Sciences, Field Crops Department, ŞANLIURFA
[2]Harran University, Faculty of Agriculture, Department of Field Crops, ŞANLIURFA
*Corresponding author: hakanunala@gmail.com

Abstract

This study was carried out in the field of experimental field crops department, Faculty of Agriculture, Eyyübiye Campus, Harran University in 2016 in order to determine the effect of yield and yield components at some sesame (*Sesame indicum* L.) genotypes in Sanliurfa conditions. Trials a total of 20 diverse sesame accessions (13 local and 7 cultivars as check) were sown on 21 June 2016. Trial randomized complete block design as three replications. Plots length were 5 m, each plot consist of 4 rows, row spacing was 70 cm and intrarow was 15 cm. Results of experiment revealed that plant height, number of branches, number of capsules per plant, number of capsule per main stem, first capsule height, 1000 seed yield, harvest index, oil ratio, oil yield, protein ratio, seed yield and dry matter weight per plant significant differences were found between genotypes. According to research results; plant height 65.7-102.7 cm, number of branches 3.1-6.3 number plant^{-1}, number of capsules per plant 41.1-104.8 number plant^{-1}, 1000 seed 2.5-3.6 g, first capsule height 17.9-26.4 cm, number of mainstream capsules 15.6-33.4 number plant^{-1}, harvest index 27.8-16.6%(w/v), protein ratio 15.6-18.0%(w/v), oil yield 16.5-35.8 kg da^{-1}, oil ratio 49.5-55.7%(w/v), seed yield 30.0-71.4 kg da^{-1}. While the lowest seed yield was obtained from variety of Cumhuriyet-99 with 30.0 kg da^{-1}, the highest seed yield from genotype of Mardin/Derik with 71.4 kg da^{-1}.

Key Words: Şanlıurfa, sesame, selection, variety, seed yield

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Humic Acid Applications on Yield and Yield Components of Cotton (*Gossypium hirsutum* L.)

Selçuk ACEMOĞLU[1], Hasan HALİLOĞLU[2*]

[1]Harran University, Graduate School of Natural and Applied Sciences, Field Crops Department, ŞANLIURFA
[2]Harran University, Faculty of Agriculture, Department of Field Crops, ŞANLIURFA
*Corresponding author: koza67@gmail.com

Abstract

The aim of this study was to determine the effect of humic acid applications on yield and yield components of cotton. The study was carried out employing split plots experimental design with three replications in Dogrular village of Hilvan province, Sanliurfa, Turkey. Each plot consisted of four rows with 70 cm apart and intra-row spacing of 15 cm. The cultivar Stoneville-468 was used in the experiment and field trial was planted on May 6, 2014. The result showed that, seed cotton yield varied from 364.7 kg/da to 533.4 kg/da. The highest seed cotton yield, plant height, seed cotton weight per boll, ginning out-turn and the lint index were obtained from the combination of 200 g soil application + 25 g of foliar humic acid application. The highest number of sympodia was obtained from the interactions of 100 g of soil application + 12.5 g of foliar application. The highest seed index was obtained from the combination of 200 g of soil application + 37,5 g foliar application and the highest fiber strength was obtained from the combination of 100 g of soil application + 25 g of foliar humic acid applications. The highest number of boll per plant was obtained from 100 g soil application and the thinnest fiber (micronaire) was obtained from 100 g of foliar application. It was concluded that humic acid application had no effect on earliness and fiber length. Contrary it had negative effect on the number of monopodia.

Key Words: Cotton, humic acid, soil applications, foliar applications, yield

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Improved Barley Lines and Varieties Suitable for the Coastal Areas Conditions of Aegean Region

Aydın İMAMOĞLU[1*], Seda PELİT[1], Teyfik TAYLAN[1], Ceylan BÜYÜKKİLECİ[1], Özge YILDIZ[1]

[1]Aegean Agricultural Research Institute, Menemen-İzmir
*Corresponding author: aydin.imamoglu@tarim.gov.tr

Abstract

This study was conducted to in 2015-16 growing too seasons find out improved barley lines suitable for Aegean Agricultural Research Instutue and Karacabey agricultural enterprises field. Experimental design was completely randomized blocks desingns with four replications for the field trials. Following characters were assessed for 20 lines and five registered varieties (Akhisar98, Vamıkhoca98, Kaya7794, Bornova92, Hilal): grain yield (kg/da), 1000 grain weight (g), hektoliter weight (kg/hl) and big grain rate (≥ 2,5 mm), and protein days to spikeling.

Key Words: Barley, *Hordeum vulgare* L., grain yield, guality, line

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Oat (*Avena sativa* L.) Genotypes Suitable for Human Nutrition in Aegean Region

Aydın İMAMOĞLU[1*], Seda PELİT[1], Özge YILDIZ[1], Ceylan BÜYÜKKİLECİ[1], Teyfik TAYLAN[1], Asiye SEİS SUBAŞI[2], Tülin ÖZDEREN[2], Turgay SANAL[2]

[1]Aegean Agricultural Research Institute, Izmir
[2]Field Crops Central Research Institute, Ankara
*Corresponding author: aydin.imamoglu@tarim.gov.tr

Abstract

This study was carried out in 2014–2015 cropping year in Menemen and Karacabey locations with 49 oat lines and 4 commercial varieties (Sarı, Fetih, Kahraman and Chekota). The experiment was established in an alpha lattice experimental design technique (7 x 7= 49) with three replications. In the research, it was aimed to determine genotypes of the region suitable for human nutrition by examining yield and some quality parameter performances of oat genotypes developed by Aegion Agricultural Research Institute. The traits such as grain yield (GY), thousand kernel weight (TKW), test weight (TW), plumpness (P, sieved 2.2 mm slotted), full grain oat protein (FGOP), starch (S), and β-glucan (β-G) content of genotypes were investigated. The variations among oat lines for grain yield was significant and differences for TKW, TW, P, HR, FGOP, S, and β-G were also determined. The GY, TKW, TW, P, HR, FGOP, S, and β-G of oat lines ranged between 82–345 (216) kg/da, 19–33,6 (25,3) g, 37,9–48,8 (43,,2) kg/hl, 14–88 % (54), 12,6–17,2% (14,7), 48,1 – 59,3 % (52,4) and 3.4–6,8% (4.,9) in Menemen location; and 77–317 (200) kg/da, 22.1–43,5 (32,5) g, 35,8–50,7 (43,5) kg/hl, 12,1–14,64% (13,3), 49,4–59,8% (54,0), and 3.7–5.5% (4.6) in Karacabey location, respectively.
The promising oat lines in the experiment were 31, 36, 41, 45, 46 and CV Sarı and Kahraman in Menemen ; and 11, 35, 36, 16, 38, and CV Kahraman in Karacabey location regarding their grain yield and other quality parameters. The oat lines 11, 35, 36, 41, 45 and CV Sarı and Kahraman were suitable in terms of human nutrition in Aegean region.

Key Words: Oat (*Avena sativa* L.), grain yield, human nutrition, quality traits

The Importance of Tobacco and, Medicinal and Aromatic Plants will be an Alternative to Tobacco

Abdulhabip ÖZEL[1*], Aliye Rümeysa ŞAHİN[2]

[1]Harran University, Faculty of Agriculture, Department of Field Crops, ŞANLIURFA
[2]Harran University, Graduate School of Natural and Applied Sciences, Field Crops Department, ŞANLIURFA
*Corresponding author: hozel@harran.edu.tr

Abstract

Tobacco production, which was around 250 thousand tons per year in our country in the 1990s, has declined to 70 thousand tons now. With recent legislative arrangements recently, tobacco has been on the agenda again. This situation has brought the plants, which was be a real alternative to tobacco, into the agenda again. In this paper, the information is given about the importance of tobacco to Turkey and our region, the characteristics of plants that will be an alternative to tobacco and some medicinal and aromatic plants (saffron, sahlep, sage, thyme, lavender and so on) with potential to be an alternative to tobacco.

Key Words: Importance of tobacco, Characteristics of tobacco agriculture, Medical plants

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Examination of Performance of Some Durum Wheat Genotypes Against to Heat Stress

Sertaç TEKDAL[1*], Mehmet KARAMAN[1]

[1]GAP International Agricultural Research and Training Center, Diyarbakır-TURKEY
*Corresponding author: sertac79@hotmail.com

Abstract

In this study, which was executed 2012-2013 planting season, it were investigated alteration of some durum wheat genotypes exposed to heat stress with late sowing in terms of yield and quality traits in Diyarbakır conditions in which it is usually experienced high temperature during grain filling. It was used 20 advanced stage lines and 5 registered varieties in the research. Experiment was established in irrigated conditions in order to eliminate drought stres according to randomized complete block design with four replications and two-time. Genotypes' grain yield, thousand kernel weight, test weight, protein content, grain color and SDS value were examined. According to the genotypes averages in the normal sowing conditions; grain yield 61.2 kg ha^{-1}, test wight 85.5 kg hl^{-1}, thousand kernel weight 45.9 g, protein content 13.4%, grain color 21.8, and SDS value 16.8 ml has been. In the late sowing done in order to expose heat stres grain yield 35.5 kg ha^{-1}, test weight 84.9 kg hl^{-1}, thousand kernel weight 39.8 g, protein content 13.7%, grain color 21.6 and SDS value 19.8 ml has been. It has been understood that from averages yield, grain yield, test weight and thousand grain weight decreases while SDS values and protein content increase, but there is not a significant change in grain color in stress conditions. Also, according to high temperature sensitivity index, 10 genotypes showed medium tolerant reactions as having a value of 0.5-1. But, 15 genotypes showed susceptible reactions as having a value of 1-1.5.

Key Word: Heat Stress, Durum Wheat, Yield, Quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Some Advanced Durum Wheat Genotypes in terms of Yield and Quality

Sertaç TEKDAL[1*], Mehmet KARAMAN[1], Enver KENDAL[2], Hüsnü AKTAŞ[2], Hasan DOĞAN[1], Sinan BAYRAM[1], Mehmet DÜZGÜN[1], Ahmet EFE[1]

[1]GAP International Agricultural Research and Training Center, Diyarbakır-TURKEY
[2]Artuklu University Kızıltepe Vocational School, Mardin-TURKEY
*Corresponding author: sertac79@hotmail.com

Abstract

This study was carried out to identify with superior properties durum wheat lines in 2013-2014 and 2014-2015 growing season in Diyarbakir rainfed conditions. In the study, 5 standard varieties and 20 lines were uesd as material. The experiment established as a randomized complete block design experiment with four replications and grain yield, thousand grain weight, hectoliter weight, protein content, grain color and SDS value were evaluated. According to the analyses of compound variance was observed significant differences between genotypes, years and genotype x year interaction in point of whole parameters. In the Biplot graphics displaying stability position of genotypes, along high yield the most stable variety had been Sarıçanak, the most stable line had been line 7. According to the two-year averages, promising genotypes in connection with both grain yield and quality characteristics were taken the region yield trials to be evaluated in the registration phase.

Key Words: Durum wheat, Quality, Yield, Biplot

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigate the Effect of Wood Vinegar Obtained from Hazelnut Shells on Some Yield Parameters of Wheat Plant

İbrahim KOÇ[1*], Mehmet MENDEŞ[2], Ayten NAMLI[3], Fatih ÇIĞ[4], Erdal Necip YARDIM[5]

[1]Bitlis Eren Univ., Faculty of Engineering and Architecture, Department of Environmental Engineering, Bitlis
[2]Çanakkale Onsekiz Mart University, Faculty of Agriculture, 17000, Çanakkale
[3]Ankara University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, 06030, Ankara
[4]Siirt University, Faculty of Agriculture, Field Crops Department, 56000, Siirt
[5]Bitlis Eren University Rectorship, 13000, Bitlis
*Corresponding author: ibrahimkoc47@gmail.com

Abstract

This study was conducted to investigate the effect of different levels of wood vinegar obtained from the hazelnut shells on some yield parameters of wheat plant in agroecosystem. This study was carried out in 2015 and 2016 as four replications in random block design in Muş province. Analysis of Means (ANOM) Technique was used to Early heading, Plant height, Harvest index, Numbers of seed per spike, Grain yield per spike and Thousand kernel weight. For plant height, interaction effect was not statistically significant (P=0.152) while the main effect of the treatments (P=0.021) and years were significant (P=0.014). Results of the ANOM showed that the mean of the plant height in 2015 was significantly higher than that of the 2016. For the treatment effect, the most effective treatment was %4 mL while the least effective one was the Control group. On the other hand, the effect of the treatments on Harvest Index (%), Numbers of seed per spike, Grain yield per spike and Thousand kernel weight was not found to be significant (P>0.078). Based on the results of this study, although it is possible to conclude that the wood vinegar may affect some yield parameters, more comprehensive studies are needed in order to figure out the effect of wood vinegar.

Key Words: Agroecosystem, wheat, wood vinegar

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Covering Ratio and Green Yield Performances of Turf Grass Species

İbrahim HOSAFLIOĞLU[1*], Hakkı AKDENİZ[2], Bilal KESKİN[2]

[1]University of Igdir, Faculty of Agriculture, Department of Landscape Architecture, Igdir-TURKEY
[2]University of Igdir, Faculty of Agriculture, Department of Field Crop, Igdir-TURKEY
*Corresponding author: hosafli@hotmail.com

Abstract

The purpose of this trial was to investigate the performances of cool climate turfgrass species from the standpoint of covering ratio and green yield according to seasons (spring, summer and fall) under the Igdir ecological conditions. The experiment was set up at the completely randomized block according to the factorial design with three replications in 2015 and conducted to 2016. The results provided from the experiment concluded that *Festuca arundinacea* was the first range among species a covering ratio of 83% and 96%, respectively, in 2015 and 2016, and the green herbage yield of *Festuca rubra rubra* was 707 g in the second year. When the based-on seasons, interactions between turf grass species and seasons; the highest covering ratio (88%) was in 2015 and the highest green herbage yield (690 g) were found in the fall of the *Lolium perenne* species. In the second year, *Festuca arundinacea* species were completely covered on the plots of experiment in the summer and the fall seasons, and the highest yield of green herbage (743 g) and *Festuca rubra rubra* were found in the fall season of the second year as expected.

Key Words: Grasses, covering ratio, green yield

Horticulture Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Different Shading Levels on Yield and Quality of Some Table Grape Varieties

Birgül DİKMETAŞ[1], M. İlhan ODABAŞIOĞLU[2*], A. Cenap CEVHERİ[3], Sadettin GÜRSÖZ[2]

[1]Harran Univ., Graduate School of Natural and Applied Sciences, Department of Biology, Şanlıurfa-TURKEY
[2]Harran University, Agriculture Faculty, Department of Horticulture, Şanlıurfa-TURKEY
[3]Harran University, Faculty of Arts and Sciences, Department of Biology, Şanlıurfa-TURKEY
*Corresponding author: milhanodabasioglu@gmail.com , milhanodabasioglu@harran.edu.tr

Abstract

This study was carried out in 2017 in order to determine of different shading levels (Control-40%-75%) effects on yield and quality characteristics of different table grape varieties (Red Globe, Trakya İlkeren, Hatun Parmağı) at Harran University R&D vineyard. It has been determined that harvest day delayed by the way of shading level rise. In addition, 40% shading level delayed the harvest 2-7 days and 75% delayed 7-14 days. It has been concluded that the shading levels have no effect on the quality of the grape must, but partly effects bunch and berry characteristics. In the examined varieties, the greatest grains were obtained from 40% shading applications. It has been determined that best values in terms of grape quality are obtained from plants which subjected to 40% shading in the study. The control group (exposed) was found to be more fruitful than the shaded ones.

Key Words: Shading level; table grapes; grape quality

Acknowledgements: This study was supported by research grants from Harran University Scientific Research Coordinatorship (HUBAK) (Project No: 17040).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Salt (NaCl) Stress on Cabernet Sauvignon Grape Variety

M. İlhan ODABAŞIOĞLU[1*], Gülbahar DEMİRTAŞ[2], Sadettin GÜRSÖZ[1]

[1]Harran University, Agriculture Faculty, Department of Horticulture, Şanlıurfa-TURKEY
[2]Harran Univ., Graduate School of Natural and Applied Sci., Department of Horticulture, Şanlıurfa-TURKEY
*Corresponding author: milhanodabasioglu@gmail.com ; milhanodabasioglu@harran.edu.tr

Abstract

Salinity; affects 20% of the areas where plants are being cultivated and limits future cultivation in these areas. As in other cultivated plants, grape is a plant that is negatively affected by salt stress. NaCl from the salts in the soil; draws attention because grape varieties can easily damaged from low concentrations of NaCl. For this reason, tolerance to NaCl salinity is one of the aim when working towards breeding vine rootstock. Research on the determination of NaCl tolerances of *Vitis vinifera* L. varieties, which have parental potential for use in breeding studies, has increased in recent years. In this study; NaCl (K-50 mM-100 mM-150 mM) was applied to rooted cuttings for 20 days (in 4 times) to determine the tolerance level of the Cabernet Sauvignon grape variety against NaCl stress. According to findings; the number of surviving plants decreased (28.57-81.72%) depending on the salt stress, while the relative water content of leaf reduced (6.47-14.82%) and the number of leaf stoma diminish between 14.90-18.56%. Also the total amount of chlorophyll reduced between 9.9-13.80%. In addition, it was determined that the total leaf number, biomass (fresh-dried), shoot length, root dry weight decreased significantly by the increase of salinity but the shoot diameter did not change. It has been determined in the study that the NaCl tolerance limit of the Cabernet Sauvignon variety may be between 100 and 150 mM.

Key Words: Salinity, Cabernet Sauvignon, Stomata, Stress

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Selection of Walnut (*Juglans regia* L.) Genotypes in Hekimhan Region

Resul GERÇEKCİOĞLU[1], Nedim GÜLTEKİN[2], Yusuf BAYINDIR[2], Öznur ÖZ ATASEVER[1]

[1]Gaziosmanpaşa Uni. Agricultural Faculty, Horticulture Departmant- Tokat /Turkey
[2]Fruit Research Institute–Malatya/Turkey
*Corresponding author: resul.gercekcioglu@gop.edu.tr

Abstract

In this study carried out in the Malatya-Hekimhan region between the years 2015-2016; It is aimed to determine the types that are superior to the walnut trees grown from the seed. In this study fruit samples were collected individually from 297 trees, then these types were evaluated for fruit, tree and chemical properties. As a result of the research, 11 walnut types were selected as promising. Weights of the selected types of fruit;10.43 g with the 17.46 g; internal weights 5.88 g and 8.58 g; internal rate of 48.22% and 58.09% were found. Shell thickness, 0.97 mm and 1.47 mm ranged between the side branches of fruit retention rates varied between 43-79%. Five types with an internal rate of over 55% were identified. In the visual analysis fruit, seven types were light yellow, 4 types were dark yellow; In the outer color analysis, 7 types were open, 3 types were medium and 1 type was dark.

Key Words: Walnut, Selection, Malatya province

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Banana (*Musa* spp. AAA.) Breeding Efforts in Turkey

Mehmet YAMAN[1], Hasan PINAR[1*], Mustafa BİRCAN[2], Mustafa UNLU[2], Aydın UZUN[1], Merve Arefe YIGIT[1]

[1]Department of Horticulture, Faculty of Agriculture, University of Erciyes, Kayseri, Turkey
[2]Alata Horticulture research Institute, Mersin, Turkey
*Corresponding author: hpinarka@yahoo.com

Abstract

Some banana types can be cultivated in subtropical regions between 20° and 30° north and south of the equator. Several regions with subtropical climate such as Mediterranean costline are also suitable for banana culture. In example, edible cultivars were grown on Mediterranean coast lines of Turkey with local microclimate areas for banana production. In this region, although banana production at open fields goes back to 1930's, protected cultivation was initiated in 1980's in Anamur and Bozyazi towns of Mersin Province and gained significant popularity in 1990's. Turkey's banana production mainly for local consumption rather than export since the production accounts for only the half of total consumption. Amount of production increased year by year and reached approximately 300.000 tons. Breeding efforts were started at beginig of 2000's using clonal selection. And it have continied as same researchers. Until now, 5 and 3 superior banana clones selected and and applied for registration to Turkey Plant Registration Office. Also, breeding programs have continued for high yield and quality.

Key Words: Banana, breeding

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Hackberry Tree, Fruits and Its Benefits on Human Health

Ali İKİNCİ[1*], İbrahim BOLAT[1], Sezai ERCİŞLİ[2]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Sanliurfa - TURKEY
[2]Ataturk University, Faculty of Agriculture, Department of Horticulture, Erzurum - TURKEY
*Corresponding author: aliikinci@harran.edu.tr

Abstract

It is a plant that grows in almost every area of our country, in bare areas, on rocky slopes, river and river sides, often individually. European Hackberry, Mediterranean Hackberry and Nettle-tree are used for afforestation of poor and arid areas due to their high adaptability to drought, disease-resistance and having pile roots. There are four species of Celtis variety that grow naturally in our country. Some of these species reach 20-30 meters in length, while some are 2-3 meters in length. The trees and fruits of these kinds of hackberry that grow naturally in different regions of our country are called çıtlık, çitlembik, dadağan, dağdağan, dağdığan, davum, doğdoğan, gıngıres, ılıç, melengiç and wild cherry. Hackberry tree; opens flowers between march and may and shed leaves in winter. Fruits are green at first, then bright orange yellow, dirty yellow and brown - dark black when it matures. The average diameter of the fruits are 9-12 mm. Fruits, leaves, seeds and gums are used in folk medicine and in medicine for the relief of various health problems, as well as for the benefit of people in the field of cosmetics because of the increasing interest in the fragrances in recent years.

Key Words: European Hackberry, Mediterranean Hackberry; Nettle-tree; Celtis australis, Celtis tournefortii, Medical plant

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Phenological, Pomological and Morphological Features of 'Ichinose' Mulberry

Erdoğan ÇÖÇEN[1*], Hasan PINAR[2], Yüksel SARITEPE[1], Adnan CANBAY[1], Remzi KOKARGÜL[1]

[1]Apricot Research Institute - Malatya / Turkey
[2]Seyrani Faculty of Agriculture - Erciyes University Kayseri / Turkey
*Corresponding author: erdogan.cocen@gmail.com

Abstract

There are more than 400 years of mulberry culture history in Anatolia. The mulberry genotypes collected from different region of the Turkey and many other countries are kept in Malatya Apricot Research Institute mulberry genetic resources parcels. In this study carried out in 2015-2016, it was aimed to determine the phenological, pomological and morphological characteristics of "Ichinose" mulberry originated from Japan. In the study, 12 years old trees were used as material. Phenological observations revealed that the full flowering was on April 25, the fruit color turning period was on May 14, the beginning of harvest was on May 17, and the end of harvest was on June 20 and the cultivar produced fruit for 34 days. The average fruit weight was found to be 1.67 g, fruit width was found to be 11.77 mm, fruit length was 22.58 mm and fruit stalk length was 8.03 mm. In the chemical measurements performed in fruit juice, TSS was 17.60 %, the pH was 5.74 and the TA was 0.23%. In the study, the must yield was found to be 45.80% and the drying efficiency was found to be 19.83%. In the morphological examination and measurements, it was observed that the tree habitus was semi-upright, tree vigor was strong and branching was medium. Leaf morphology was determined to be elliptical in leaf-like shape and edge teeth were irregular blunt, leaf-leaf stem was slightly indented and tip shape was pointed. In terms of leaf morphology; leaf blade was elliptic shape, leaf blade edge notch was irregular bump shape, leaf blade petiolar sinus shape was slightly indent, and leaf blade tip was pointed shape. At the end of the study, the phenological, pomological and morphological characteristics of the Ichinose variety started to be registered on behalf of the Directorate of Malatya Apricot Research Institute are described in detail.

Key Words: Mulberry, Phenology, Pomology, Morphology, Characterization

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Enzyme Activities, Chloropyll Contents and Leaf Color in Melon Genotypes (*Cucumis melo* L.) in Protected Cultivation under Salinity Conditions

Selma KIPÇAK[1*], Aytekin EKİNCİALP[1], Çeknas ERDİNÇ[2]

[1]Van Yuzuncu Yil University, Baskale Vocational School, Van, Turkey
[2]Van Yuzuncu Yil University, Faculty of Agriculture, Department of Agricultural Biotechnology, Van/Turkey
*Corresponding author: selmakipcak@gmail.com

Abstract

This study was carried out to investigate some plant growth characteristics under salt stress in some melon genotypes that were collected from the Van Lake Basin and their tolerance levels to salt stress were pre-determined. Considering the first screening study results, YYU4 and YYU10 were selected as sensitive genotypes and YYU1 and YYU18 were as tolerant ones. Additionally, a sensitive (Ananas) cultivar and a tolerant (CU196) genotype were chosen as control genotypes. Approximately 6 week-old-seedlings were planted to 12 liters pots in a completely randomized plot design with three replications. Salt concentrations of 0, 50 and 75 mM NaCl were applied to melon seedlings under a protected cultivation. Amount of chlorophyll in the leaves, superoxide dismutase (SOD), catalase (CAT) and ascorbate peroxidase (APX) enzyme activities, malondialdehyde (MDA) content were determined and the L*a*b values were measured with a Minolta colorimeter accordingly to determinate the effect of salt stress on melon genotypes. While the chlorophyll content of the genotypes generally increased especially at 50 mM NaCl according to 0 mM, the difference between the genotypes at the 75 mM NaCl was statistically significant ($p<0.05$). It was determined that the maximum increase in MDA contents YYU18 genotype both50 mM and 75 mM (as 52.23% and 82.28% respectively). The lowest MDA contents according to the control were found as -0.39% in the YYU4 genotype at 50 mM NaCl and it was in YYU1 genotype at 75 mM NaCl (as-27.87%).

Key Words: *Cucumis melo* L., Genotype, Lake Van Basin, Salt stress

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Problems and Solutions of Cherry Cultivation in Mardin Province

Ali İKİNCİ[1*], Şükran ALDANMAZ[2], İbrahimBOLAT[1]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Sanliurfa - Turkey
[2]Directorate of Food, Agriculture and Livestock, Artuklu/Mardin - Turkey
*Corresponding author: aliikinci@harran.edu.tr

Abstract

Turkey is the largest producer and exporter of cherries (*Prunus avium* L.) in the world. Cherry is grown in Aegean, Marmara, Mediterranean and the Black Sea regions in Turkey. Cherry, which is one of the species resistant to winter cold, has been found to increase the ratio of double female organ formation in the case of increasing the air temperature above 35 oC during the period of flower bud differentiation. There are 291 138 cherry trees in Mardin province located in the Southeastern Anatolia Region. The majority of cherry trees in Mardin province present are the '0900 Ziraat' cherry varieties grafted on Prunus mahaleb L. rootstock, while in recent years Stella varieties have been grown. 'Stark gold' sweet cherry cultivar is widely used as a pollinator in cherry orchards. In Mardin province, a more intensive cherry cultivation is being done in Yeşilli districts with an altitude of 850 m and Ömerli with 1100 m. In cherry cultivation made using traditional cultivation techniques in the province; there are many problems in the region such as selection of suitable cultivars, diseases and pests control, fertilization of cherry orchards, watering of orchards, pruning and training systems, cold storage and marketing. In this study, the main problems of cherry cultivation in Mardin province were determined and suggestions were made for solving these problems.

Key Words: Sweet cherry; *Prunus avium*; Cherry rootstocks; Ömerli, Yeşilli; 0900 Ziraat

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Pomological Characteristics of Malatya Region Winter Pear Varieties

Yusuf BAYINDIR[1*], Erdoğan ÇÖÇEN[1], Tahir MACİT[2], Nedim GÜLTEKİN[1], Ebru TOPRAK ÖZCAN[3], Ahmet ASLAN[1], Rafet ASLANTAŞ[4]

[1]Apricot Research Institute Malatya /Turkey
[2]Malatya Provincial Directorate of Food, Agriculture and Livestock Malatya /Turkey
[3]Manisa Viticulture Research Institute Manisa /Turkey
[4]Faculty of Agriculture, Eskişehir Osmangazi University Eskişehir / Turkey
*Corresponding author: ybayindir802@hotmail.com

Abstract

In our country which is at the forefront of pear production in the world, it is seen that many kinds of local varieties are used as well as standard varieties. These local varieties are an important genetic resource in breeding studies as well as offering a different taste. Identification of the pomological characteristics of these genetic resources is important for determining the possibilities of use in breeding studies. In this study, it was aimed to determine the pomological characteristics of the local winter pear varieties in Malatya province, which is one of the important fruit growing centers. The study was carried out between 2014-2017 and 29 different types were determined within the scope of the study. Pomological analyzes were carried out on ten fruit in every year for two years in the determined types and the mean values of the obtained findings were given. The mean fruit weight of fruits were 57.70-209.73 g, fruit width 47.17-75.75 mm, fruit length 48.65-86.89 mm, fruit height 45.72-75.49 mm, fruit stem length 18.77-58.57 mm, fruit stem diameter 1.74-3.67 mm and fruit firmness varied between 3.70-9.92 kg/cm². In chemical analyzes performed in fruit juice, the value of TSS varied from 11.30 to 19.40%, the TEA value ranged from 0.11 to 1.02% and the pH value ranged from 3.08 to 5.19. At the end of the study, it was determined that winter local varieties can be used in breeding programs.

Key Words: Pear, Pomology, Malatya

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Mycorrhiza (*G. mossea*) and Different Doses of Phosphorus on Root Infections and Spores of Pepper (*Capsicum annuum* L.) in Harran Plain Conditions

Nesibe Devrim ALMACA[1*], Murat ŞİMŞEK[2], Ahmet ALMACA[3], İbrahim ORTAÇ[4]

[1]GAP Agricultural Research Institute, Şanliurfa,
[2]BATEM Agricultural Research Institute, Antalya,
[3]Harran University Faculty of Agriculture, Şanliurfa
[4]Cukurova University Faculty of Agriculture, Adana
*Corresponding author: almacand2@gmail.com

Abstract

This study was carried out with the objective of determining the effects of mycorrhizal (*G. mossea*) inoculation and phosphorus application on the yield, yield components and root infections and spores numbers of the pepper plants at Koruklu Talat Demirören Research Station in the conditions of Harran Plain, between 2013 and 2015
In the study, G. mossea mycorrhiza species and inan-3363 pepper variety were used.
In the experiment, each plots were applied with nitrogen fertilizer equal to 21 kg N/da, benefiting fromn %42-44 Triple super phosphate fertilizer as phosphorus source. The trial design was set up in the random blocks to be three pieces, according to the factorial design. Six different phosphorus doses, one mycorrhiza species were used. Mycorrhiza application F: Mycorrhiza application in seedling period FT: Mycorrhiza application in transplantation of seedlings and shoots in the field and K: Phosphorus applications 0, 2,5, 5, 10, 15, 20 kg P_2O_5 / da while K: Mycorrhiza application the realized.
When root infection data were evaluated, it was found that mycorrhizal applications affected %1 significance level in 2013 statistical analysis and phosphorus applications were not significant. It has been determined that in 2014 and 2015 mycorrhizal applications are important at %1 level in root infection, but in 2015 it was determined that the interaction between mycorrhizal applications and phosphorus doses is %5 significant. As a result, according to 3-year evaluation, root infection was found to be important with mycorrhizal applications.
In the evaluation of spore's numbers data, there was no statistical difference between them in 2013. In 2014, interaction between mycorrhizal applications and phosphorus doses was found to be important at %1 level. In 2015, it is determined that mycorrhiza applications are at %1 significance level, and that interactions between mycorrhiza applications and phosphorus doses are at %5 significance level.
In terms of sustainable agriculture, it is possible to reduce the amount of fertilizer used with mycorrhiza inoculations. With this study, the recommended phosphorus fertilizer ratio for pepper cultivation decreased from 10 kg/da to 7.1 kg/da

Key Words: Harran Plain, Mycorrhiza (*G. mossea*), Phosphorus, Pepper

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Chilling Periods of GAP (Southeastern Anatolia Project) Region for Fruit Growth

İbrahim BOLAT[1*], İbrahim Halil YİĞİT[1], Ali İKİNCİ[1], Tahsin TONKAZ[2]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Sanliurfa - Turkey
[2]Ordu University, Faculty of Agriculture, Department of Biosystem Engineering, Ordu - Turkey
*Corresponding author: ibolat@harran.edu.tr

Abstract

In this study, which was carried out in GAP Region, chilling periods were examined in terms of fruit growth based on many years of meteorological records of climate stations. The average, maximum and minimum daily temperature data for each hours of many years from 15 stations in the region was used in the study. Classical Method, Chill Unit Method and Aron Method were used for the calculation of time chilling in the stations. The day's hourly temperatures were used for Classical and Cold Unit Methods, and Daily average temperatures used for Aron Method to calculations. According to obtained results; the lowest chilling period was determined as 414 hours from Nusaybin Station as to the Classical Method in 1999, while the highest chilling period was found as 2880 hours in Ergani Station in 1993. According to Cold Unit Method, the lowest value was obtained from Cizre Station as 880 chill units in 1999, and the highest value was 2733 chilling units in Mardin Station in 1979. According to calculation in respect of Aron Method, the lowest value was determined in 1982 in Mardin Station as 1006 hours, and the highest value were 12 213 hours in 2011 in Mardin Station.

Key Words: Chilling requirement, GAP region, climate stationsi fruit growth

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Deficit Irrigation on Development of Different Organs of Stone Fruits

İbrahim BOLAT[1*], Kübra KORKMAZ[1], Ali İKİNCİ[1], Meral DOĞAN[1]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Sanliurfa - Turkey
*Corresponding author: ibolat@harran.edu.tr

Abstract

The worldwide decrease of the amount of water suitable for agricultural usage, forces farmers to use the available water resources, effectively. In order to use the water recourses more effectively, application of the irrigation programs in orchards has become a necessity. To achieve the effective irrigation in stone fruits, regulated deficit irrigation program has been suggested.
In stone fruits, several different processes are observed to be sensitive to water stress, and the duration of these processes might affect the deficit irrigation sensitivity of the fruit growth stages. These stages include reproductive cell division, fruit drop, canopy growth, and, flower bud differentiation and development. Occurrence of water stress during these periods, has different level of adverse effects on cell, bud, fruit and root development. These effects can be minimized by developing effective irrigation programs together with the use of suitable orchard management technics and drought resistant genotypes.

Key Words: Deficit irrigation, Stone fruit, fruit growth, bud differentiation, root development

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Relations Between the Water Stress and Irrigation Period, Climate, Soil and Plant Properties in Temperate Fruit Crops

İbrahim BOLAT[1*], Meral DOĞAN[1], Ali İKİNCİ[1], Kübra KORKMAZ[1]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Sanliurfa - Turkey
*Corresponding author: ibolat@harran.edu.tr

Abstract

For the temperate fruit crops, the irrigation scheduling in orchards is closely correlated to the environmental factors, such as, the area where the trees are located, the rootstock, the age of the tree, yield status and soil characteristics. In fruit trees, the stress occurs when the amount of water lost via transpiration is more than the amount of the water taken by the tree. Water stress has an adverse effect on yield. Due to this reason, to have the maximum product biomass in fruit crops, water stress is not desired. In orchards, the water stress can be controlled via regulated irrigation scheduling, which in turn controls the fruit growth. This is achieved by resupplying the water lost from the trees and soil via evapotranspiration back to the soil by using the required irrigation program. Irrigation program consists of the amount of evapotranspiration, meteorological data, water stress indicators, irrigation coefficient, and the stages of fruit growth. Use of the water stress indicators in irrigation programs can provide the farmer with the ability to adjust the irrigation level.

Key Words: Temperate fruit crops, Water stress; Irrigation period, Climate, Plant and soil

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Use of Fruit Rootstocks for Lime-Induced Chlorosis Tolerance

İbrahim BOLAT[1*], Ali İKİNCİ[1], Murat DİKİLİTAŞ[2], Sema KARAKAŞ DİKİLİTAŞ[3]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Sanliurfa - Turkey
[2]Harran University, Faculty of Agriculture, Department of Plant Protection, Sanliurfa - Turkey
[3]Harran University, Faculty of Agriculture, Dept. of Soil Science and Plant Nutrition, Sanliurfa - Turkey
*Corresponding author: ibolat@harran.edu.tr

Abstract

Increase in the population, uncontrolled use of the areas, and the problems originated from the industrialization, result in a decrease of the lands, which are suitable for agriculture. This, in turn, forces the farmers to use the more dry lands with high level of underground water, which have high amount of salt, and high intensity of lime, for agricultural production. Usage of such areas comes with several problems having abiotic and/or biotic stresses. As a solution to these problems, orchard management modifications has been offered. However, this is an expensive method, and the results are not always satisfactory. The most effective solution, on the other hand, forces the use of the genotypes which are tolerant to abiotic and biotic stress conditions.
High intensity of lime is an important problem which reduces soil fertility. In case of fruit crops, lime induced chlorosis has limiting effects on fruit growth, yield and fruit quality. Supplement of extra iron to the trees via foliar sprays or soil applications can provide a first order solution to this problem. However, these measures are costly and their effects are not permanent. Here, we suggest that the most suitable method to prevent iron chlorosis permanently, is to use lime induced chlorosis resistant genotypes as rootstocks.

Key Words: Lime-induced chlorosis, Iron deficiency, Tolerance, Fruit crops, Rootstock

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Importance of Determination of Phenological Development Stages in Fruit Trees

İbrahim BOLAT[1*], Ali İKİNCİ[1]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Sanliurfa - Turkey
*Corresponding author: ibolat@harran.edu.tr

Abstract

Annual calendar of plant biological events including flowering, shoot and trunk growth, root development, as well as reproductive growth like flower initiation, fruit setting, and fruit maturing is referred to phenology. As it allows the farmers to plan the orchard cultural applications, phenology is essential for good crop management. In addition, to further improve the orchard management, description of the growth stages for each agricultural crop is needed. This necessity has led to the introduction of a general scale, named as Biologische Bundesantalt, Bundessortenamt und Chemische Industrie (BBCH), which describes the phenological stages of both herbaceous and woody plants. BBCH is a decimal system classifying different development stages by giving each of them a separate two-digit code. This scale has been used on different fruit trees, including pomegranate loquat, quince, apricot, guava, strawberry, peach and olive. In addition, in fruit culture, a knowledge of the growth factors for each crop is essential. A study of the phenological stages of growth in trees is crucial to predict the accurate timing of hormone application and the possible appearance of disease, to know the sensitivity to water deficit at each stage of development, and to adjust the fertilization programs to the nutritional needs of the plants. Moreover, phenological development stages of fruit trees are also used in several other areas such as, grometeorology, agricultural insurance, and the applied botanical and physiological sciences.

Key Words: Phenological stages, Fruit trees, BBCH; Orchard management

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Ethanol Vapour Application in the Cold Storage of "Köhnü" Table Grape

Yılmaz UĞUR[1], Nihat ÖZKAN[1], Hatice ŞAHİNER[1], Sibel KILIÇARSLAN[1], Oktay Turgay ALTUN[1], Rukiye YAMAN[1], Hasan KOÇ[1], Sultan NALÇACI[1], Okan ÖZKAYA[2]

[1]Apricot Research Institute, Malatya, Turkey
[2]Çukurova University, Faculty of Agriculture, Department of Horticulture, Adana, Turkey
*Corresponding author: yilmaz.ugur@tarim.gov.tr

Abstract

Decay, caused by Botrytis cinerea Pers., is the major problem of table grapes during cold storage. Preharvest and postharvest applications are compulsory to avoid significant losses. Therefore, in this study, the efficacy of applying ethanol gas generators to prevent storage decay was tested on cultivar of table grape, 'Köhnü'. Ethanol release pads were placed above the grapes in the modified atmosphere package. The grapes were stored for 60 days at 0±1 °C and determined after an additional 3 days at 20°C to shelf life. Samples were taken periodically and investigated physical [soluble solid content (SSC), pH, weight loss, berry colour, stem dry (%), separated rate, skeleton of cluster dry and decay rate (%)], chemical [titratable acidity, maturity index, phenolic compounds] changes, sensory analysis and microorganism population. Results showed that ethanol release pads treatments significantly decreased weight losses. Changes of the decay, skeleton of cluster dry and stem dry of the grapes with ethanol release pads were delayed.

Key Words: Cold storage, Shelf life, Ethanol, Modified atmosphere packaging

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Collection, Conservation and Characterization of Oleaster (*Elaeagnus angustifolia* L.) Genetik Resources Grown in Malatya

Makbule YANAR[1], Yılmaz UĞUR[1], Tahir MACİT[2], Remzi KOKARGÜL[1], Yusuf BAYINDIR[1], Cemil ERNİM[1]

[1]Apricot Research Institute, Malatya, Turkey
[2]Directorate of Provincial Food Agriculture and Livestock, Malatya, Turkey
*Corresponding author: makbuleynr@hotmail.com

Abstract

One of the species that has a natural distribution in our country, rich in nutrient and with wide utilization possibilities is oleaster. In Greek, elace is olive and in Latin, angustofilo means narrow leaf. In this study, the survey programs were organized in Malatya provinces and its districts (Akçadağ, Arguvan, Battalgazi, Hekimhan, Yazıhan and Yeşilyurt), and 15 genotypes were identified. In this genotypes, it was made studies such as recording habitat information, morphological observation and physical/chemical analyzes. Morphological observations have revealed that this taxon have been represented by individuals in the form of bushes and trees, and that the state of thorny have changed as dense, medium, rare and thornless. It has been determined that the shape of the fruit is cylindrical, oval, conical and the fruit color is brown, light brown, yellow and red. The weight of fruits were between 0,30 - 5,53 g, kernel weight were 0.2 - 1.0 g, leaf length were 34,02 - 77,64 mm, leaf width were 10,39 - 20,28 mm. The pH were between 4.60 - 5.34, the amount of fructose were 0.71 - 2.30 g/10 mL, glucose were 1.07 - 2.86 g/10 mL, gallic acid were 18.99 - 302,50 ppm, catechin were 801,58 - 3769,10 ppm, and epigallocatechingallate were 18,10 - 255,48 ppm, routine were 13,53 - 135,45 ppm.

Key Words: Oleaster, genotype, fructose, catechin

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Map and Aloe Vera Gel Treatments on Fruit Quality Attributes of Medlar Fruits (*Mespilus germanica* L.) Throughout Cold Storage

Burhan OZTURK[1*], Ahmet OZTURK[2], Orhan KARAKAYA[1], Sefa GUN[1], Umut ATES[1], Muttalip GUNDOGDU[3]

[1]Ordu University, Faculty of Agriculture, Department of Horticulture, Ordu-Turkey
[2]Ondokuz Mayıs University, Faculty of Agriculture, Department of Horticulture, Samsun-Turkey
[3]Abant İzzet Baysal Univ., Faculty of Agri. and Natural Sciences, Department of Horticulture, Bolu-Turkey
*Corresponding author: burhanozturk55@gmail.com

Abstract

This study was carried out to determine the effects of post-harvest MAP and Aloe vera treatments on weight loss, respiration rate, firmness, color characteristics (L*, chroma and hue angle), soluble solids content (SSC), titratable acidity, vitamin C, total phenolics compounds, total flavonoids content and total antioxidant capacity of medlar fruits during cold storage. The lowest weight loss was determined in MAP-treated fruits during cold storage. Fruit firmness was significantly maintained in MAP-treated fruits during cold storage. At the end of cold storage, the lowest respiration rate was determined in Aloe vera-treated fruits. Chroma, hue angle, titratable acidity and vitamin C values of Aloe vera-treated fruits were higher than control. But both MAP and Aloe vera gel treatments had higher SSC values than control. Bioactive compounds as total phenolics, total flavonoids and antioxidant activities were decreased in all treatments during cold storage. But the highest total phenolics, total flavonoids and antioxidant activities (DPPH and FRAP) were obtained from MAP-treated fruits. It was concluded that combining postharvest Aloe vera gel and MAP treatments could be used as an efficient tool in maintaining flesh firmness and bioactive compounds of medlar fruits significantly influencing consumer preferences.

Key Words: Antioxidant, color, flavonoids, phenolics, respiration rate, weight loss.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Maturity Stages and Modified Atmosphere Packaging on Fruit Quality and Bioactive Compounds of Jujube Fruits

Sefa GUN[1], Burhan OZTURK[1*]

[1]Ordu University, Faculty of Agriculture, Department of Horticulture, 52200, Ordu-Turkey
*Corresponding author: burhanozturk55@gmail.com

Abstract

This study was carried out to determine the effect of different maturity stages and modified atmosphere packaging on fruit quality and bioactive compounds of jujube during cold storage. Fruits are harvested at unripe, semi and full ripe maturity stages. The fruits were stored at 0±0.5 °C and %90±5 RH for 42 days. Weight loss was significantly delayed with MAP treatment during storage. The highest weight loss was observed at M-1 treatment. Compared to MAP-treated fruits, the lowest respiration rate was measured in non-MAP-treated fruits during cold storage. While MAP-treated fruits had higher chroma value than non-MAP, it had lower L* and hue angle values. MAP treatment delayed significantly softening of fruits and softening in M-3 maturity stage was higher compared to fruits in other maturity stage. As compared to MAP treated fruit, the SSC value of non-MAP treated fruit was higher, in additional the highest value of SSC was obtained from M-3 maturity stage. Fruits in M-1 maturity stage yielded lower value of titratable acidity. The MAP treated fruits had higher vitamin C, total phenolics, and antioxidant activity (both DPPH and FRAP) than the non-MAP treated fruits. It was concluded that MAP treatment was effective in reducing the quality loss of fruit and the best maturity stages to maintain the quality of fruit for a longer period were M-2 and M-3.

Key Words: Antioxidant, firmness, vitamin C, weight loss, Ziziyphus jujuba M.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Boron Fertilization on Sweet Cherry (cv. '0900 Ziraat') Tree Yield and Fruit Quality

Resul GERÇEKCİOĞLU[1], Ufuk ASARKAYA[2], Öznur ÖZ ATASEVER[1]

[1]Gaziosmanpaşa Uni., Agricultural Faculty, Horticulture Departmant- Tokat /Turkey
[2]Tokat Directorate of Provincial Food Agriculture And Livestock / Turkey
*Corresponding author: resul.gercekcioglu@gop.edu.tr

Abstract

This research was carried out on '0900 Ziraat' cherry cultivar in the years 2016-1017. Lambert sweet cherry is pollinator. Boron applications are reviewed for reasons a disorder resulting in inadequate fruit set and quality of sweet cherry orchards in recent years. 5 different boron application was made. Applications were control, soil application and at different doses of 3 application on trees. Research findings, especially to increase the yield in addition, significant improvements were observed as the increase in fruit weight of fruit quality characteristics. Total soluble solid, the rate of cracking, flesh firmness and acidity changes were found in years and according to practices.

Key Words: '0900 Ziraat' sweet cherry cultivar, boron, yield, fruit quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Effects of Biochar on Eggplant Growth and Chemical Parameters of Non-Saline and Saline Soils

Murat ÖZYAVUZ[1], Salih AYDEMİR[2*], Osman SÖNMEZ[3], Cengiz KAYA[2], Osman ALTUN[4], İbrahim AKPİRİNÇ[4], Hamza YALÇIN[5]

[1]Şanlıurfa Directorate of Provincial Food, Agriculture and Livestock
[2]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
[3]Erciyes University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
[4]Polen Seed Company, Şanlıurfa
[5]Harran University, Agriculture Faculty, Department of Animal Science
*Corresponding author: salihaydemir@harran.edu.tr

Abstract

It was aimed to determine the effect of two different biochar materials (tobacco stalk (TS), cotton stalk (PS)) on eggplant growth and some parameters of saline and non-saline soils. In this context, a greenhouse experiment was established by growing eggplant plants under controlled conditions using three different doses (0% - 0.3% - 0.6%) of PS and TS materials in the soil taken from the saline and non-saline regions of Harran Plain.
In the study, some chemical characteristics of soils (organic matter, cation exchange capacity (CEC), pH, EC (electrical conductivity) were determined. In addition, eggplant's plant height, fruit quantity, fruit length, fruit diameter, pericarp thickness, fruit weight, pH, EC, leaf quantity, chlorophyll content, plant fresh biomass weight, plant dried biomass weight, plant fresh root weight, plant root dried root weight and total element analysis in plant parameters were investigated. Results indicated that increasing amounts of PS doses compared to control (0%) gave more effective results in terms of the parameters examined in the non-saline soils. In terms of the effect of doses, it was generally determined that 0.3% dose was more effective. In saline soils, PS was found to be more effective than the control in applications. It has been observed that there is an effective increase with increasing dose rates as well. Overall, it was concluded that biochar effects were not statistically significant ($P < 0.05$) but doses of biochars showed statistically significant ($P < 0.05$) effects on both biochar applications in different soils (saline and non-saline soils). Application of biochars decreased the stress effects of salt on plants comparing the control results on saline soils.

Key Words: Salinity, biochar, tobacco stalk, cotton stalk, eggplant

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Physico-Chemical Characteristics and Mineral Contents of Some Pomegranate Cultivars

Gokhan AKKUS[1*], Ferhad MURADOGLU[2], Sibel AKKUS BİNİCİ[1], Ersin GULSOY[3]

[1]GAP Agricultural Research Institute, Sanlıurfa
[2]Abant İzzet Baysal University Faculty of Agriculture and Natural Sciences, Department of Horticulture, Bolu
[3]Igdır University Faculty of Agriculture, Department of Horticulture, Igdır
*Corresponding author: gokhanakkus2@hotmail.com

Abstract

This study was conducted to determine physico-chemical characteristics (fruit weight, fruit with, fruit length, calyx length, calyx diameter) of fruits and mineral (K, Mg, Ca, Cu, Zn, Fe and Mn) concentration of fresh juice belong to seven pomegranate cultivars grown in Talat Demirören location Sanlıurfa Province. In investigated, Hicaz cultivars had the largest fruits length 109.56 mm, while 33 N 49 cultivars had the highest fruit weight (491.8g) and fruit with (100.3 mm). Calyx length and diameter in all cultivars were in the range 11.33 to 23.21 mm and 13.91 to 25.88 mm. Among the major mineral elements investigated, K had the highest content were detect at all cultivars, ranged from 149.0 to 247.9 mg/100gr, followed by P (3.27-11.93 mg/100g and Mg (3.74-5.98 mg/100g). According to the results of the analysis was determined significant statically different among fruit properties and mineral content of all pomegranate cultivars. The results presented in this work show that consuming pomegranate is a good source of mineral elements in human diet.

Key Words: Pomegranate, mineral element, fruit properties

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Organic Microbial Fertilizer Used in Curly Lettuce Production on Yield and Some Quality Properties

Selçuk SÖYLEMEZ[1*]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa-TURKEY
*Corresponding author: ssoylemez@harran.edu.tr

Abstract

Using of organic microbial fertilizers in agricultural production has increased in recent years. This study was conducted to investigate the effect of organic microbial fertilizer on yield and some quality characteristics in curly lettuce, during 2016 winter production period. The research was carried out an unheated plastic greenhouse in the soilless culture according to randomized plot design. In the study, Caipira curry lettuce type was used as plant material and 1:1 mixture of perlite and peat as the medium. A commercial organic microbial fertilizer which was named Allgrow was applied to roots and leaves at doses of 0, 0.5, 1.0 and 1.5 kg da^{-1}. Some parameters such as head weight, head diameter, head height, number of leaves and root length were examined in the experiment. According to the results of the experiment, organic microbial fertilizer application from leaves increased the yield by about 10% and it could be used in the production of curly lettuce.

Key Words: Allgrow, Salad, Bioplasma, Algae

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Pecan Cultivation Growth Opportunities in the Southeastern Anatolian Region

Sibel AKKUS BİNİCİ[1*], Bekir Erol AK[2], Gokhan AKKUS[1]

[1]GAP Agricultural Research Institute, Sanlıurfa
[2]Harran University Faculty of Agriculture, Department of Horticulture, Sanlıurfa
*Corresponding author: sblbinici@yahoo.com

Abstract

The Pecan is a hard shelled nuts which is belong to Carya variety of Juglandales type in (Carya illinoensis familia. It has many advantages such as high efficiency, les production cost and high nutrient composition comparing to local walnuts. It gives fruit 4-8 years from planting date. Average yield of per tree reaches 40-80 kg depending on pecan variety and cultivation techniques. There is no reported statistical data about annual pecan production in Turkey. Former research results shows that Mediterranean and a part of South East Anatolian region of Turkey has suitable climate conditions for production of pecan. It can be alternative nut to pistachio in South East Anatolian region of Turkey. It is main fruit options which gives high income for heavy clay and salt deficient soil where is not suitable for other fruits.
Pawnee, Mahan, Western, Whichita and Comanche varieties is well suited for Mediterranean region. However, Mahan, Western, Whichita and Ideal varieties is suitable for South East Anatolian region (Sanlıurfa) of Turkey. However, those varieties are not well known in Turkish market. Pecan can be consumed different ways such as sole, salted or sugar added.

Key Words: Pecan, GAP region

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Heterologous Microbial Biosynthesis of Herbal Antioxidant Resveratrol

Venhar CELİK OZGEN[1*], Irmak ICEN[2], Ting LU[3]

[1]Department of Bioengineering, Faculty of Engineering, Firat University, 23119 Elazıg, Turkey
[2]Department of Biology, Faculty of Science, Firat University, 23119 Elazıg, Turkey
[3]Dept. of Bioengineering, College of Engineering, University of Illinois at Urbana-Champaign, IL 61801, USA
*Corresponding author: venharcelik@gmail.com

Abstract

Resveratrol (3,5,4′-trihydroxy-trans-stilbene) belongs to a class of polyphenolic compounds called stilbenes, a type of natural phenol, and it is naturally produced by plants as a defense system against infection and oxidative stress due to external attacks. Thus, it is a naturally occurring polyphenolic phytoalexin. Foods known to contain resveratrol are limited to wine, grape juice, cranberries, cranberry juice, blueberries and some other berries, Japanese knotweed (Polygonum cuspidatum), peanuts, and peanut products, although a large amount of resveratrol is produced in the skin of red grapes to protect the plant against fungal diseases and sun damage. Dozens of reports have shown that resveratrol can prevent or slow the progression of a wide variety of illnesses such as cancer, cardiovascular disease, obesity and diabetes, ischaemic injuries. There are two reasons that natural resveratrol formation hampered its application as a widespread nutraceutical. Firstly, even though plants such as peanuts and grapes possessing the most abundant levels of resveratrol, this compound is produced in only trace amounts. Other reason is that the biologically active form of resveratrol is the trans isomer, although isolation from plants yields a mixture of multiple isomers, cis, trans, and various less-active glycosylated forms. However, some other stilbenes could be produced at low levels in transgenic plants. Therefore, the heterologous biosynthesis of resveratrol for microbial fermentation is an ideal target. In this work, we aimed heterologous microbial biosynthesis of resveratrol in lactic acid bacteria by starting with p-coumaric acid as a precursor. For doing that, we have obtained genetically engineered lactic acid bacteria that has two metabolic pathways genes, 4-coumarate-CoA ligase (4CL) from Arabidopsis thaliana and stilbene synthase (STS) from Arachis hypogaea, involved in resveratrol production.

Key Words: Resveratrol, antioxidant, biosynthesis, herbal

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Use of Brassinolids Against Stress Factors

Selçuk SÖYLEMEZ[1*]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa-TURKEY
*Corresponding author: ssoylemez@harran.edu.tr

Abstract

Various applications can be made to increase the tolerance of plants to abiotic stress conditions. One of these is brassinolides, a new class of plant hormone that has been used in recent years and plays a key role in plant growth and development. Brassinolids occur at low levels in the plant kingdom and regulate the division, growth and differentiation of the cells in growing young tissues. More than 40 brassinostreroids have been identified and characterized in various plant tissues, including pollen, seed and vegetative shoots. Brassinosteroids are more effective in plants grown under stress than plants grown under optimal conditions. Brassinolides play critical roles during various plant development processes, including cell proliferation and cell elongation. Brassinolides also affect other developmental processes such as seed germination, rhizogenesis, flowering, aging, leaf and fruit abscission and ripening. Additionally brassinolids can alleviate the toxicity caused by heavy metals. In this study, how Brossinolides it react to the against stress will be discussed.

Key Words: Hormone, Brassinosteroids, Abiotic Stress, Epibrassinolide, Homobrassinolide

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Different Sowing Times on the Flowering and Grain Growth Period of *Pisum* Genetic Resources

Fatih HANCI[1*], Esra CEBECİ[2], Mehmet ŞİMŞEK[3]

[1]Erciyes University, Faculty of Agriculture, Department of Horticulture, Kayseri
[2]Bati Akdeniz Agricultural Research Institute, Antalya
[3]Atatürk Central Horticultural Research Institute, Yalova
*Corresponding author: tanerfatih@gmail.com

Abstract

Despite many reports about effects of sowing time on growth, yield, quality etc., only a few study has been published about on developmental periods in Pea. Whereas the understanding the change of development periods can lead to works on cold and drought stress tolerance. This study was conducted to investigate the effects of sowing time on flowering and seed development progress of different Pisum germplasm during 2016-2017. 14 P. sativum var arvense, 14 wrinkled genotypes and 14 smooth genotypes of P. sativum var sativum L., in total 42 acces¬sions were evaluated for the number of days to 50% flowering, flowering to pod formation, pod formation to milk stage seed and milk stage to seed harvest. The study was designed with the split plot in randomized complete blocks design with 3 replications. The four sowing times (11 and 22 November, 06 and 17 March) were allocated to main plots and genotype groups to subplots. Delay in sowing caused significant reduction in length of flowering and other periods. According to the results of variance analyses for the observed characters time flowering to pod formation, and milk stage to seed harvest were the significant for three factors (date, genotype group, and interaction). The time sowing to flowering, and flowering to pod formation, were significant for date and genotype group. Wrinkled seed peas have flowered earlier in all planting periods. However, in March sowings, the time between flowering and milk stage seed period was longer in the wrinkled group.

Key Words: Pea, Sowing Time, Flowering, Variance

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of Different Methods to Determination of Bulb Dry Skin Color in Onion

Fatih HANCI[1]*, Ali Fuat GÖKÇE[2]

[1]Erciyes University, Faculty of Agriculture, Department of Horticulture, Kayseri
[2]Faculty of Agricultural Sciences and Technologies, Niğde Ömer Halisdemir University, Niğde
*Corresponding author: tanerfatih@gmail.com

Abstract

The dry skin color is one of the most important factors, which influence consumer preferences in Onion (*Allium cepa* L.). Visual assessments using color charts scales are the most common method for evaluating color in onion breeding and production programs. Although these assessments are fast and easy to implement, they have some disadvantages such as perception differences among evaluators. This study was conducted to compare the results of different measurement methods: a) visual color assessments using color chart b) readings of Chroma-Meter c) measurements on digital images. 83 locally grown populations, which were collected from different regions of Turkey, 3 breeding lines, and 10 commercial varieties, a total of 96 accessions, were used as plant material. Cluster analysis carried out on the matrix of Euclidean distances generates a dendrogram using Ward method based on the variations associated with four data set (L, a, b; L, c, h; R, G, B; and Wilson color classes) obtained from three methods. At the end of the study, differences were found among clusters for different measurements. The "L, a, b" data set appears to be the most useful parameter to detailed a classification of onion dry skin color.

Key Words: Onion, Breeding, Skin Color, Clustering

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Different Sowing Dates and Gibberellic Acid on Some Emergence Characteristics of *C. glomerata* L. Subsp. Hispida (Witasek) Hayek Seeds

Fatih GÜLBAĞ[1*], Mustafa Ercan ÖZZAMBAK[2]

[1]Atatürk Central Horticultural Research Institute, 17 Yali str., 77102 Yalova, Turkey
[2]Ege University, Faculty of Agriculture, Department of Horticulture, Bornova, İzmir, Turkey
*Corresponding author: fatihgulbag@hotmail.com

Abstract

The genus Campanula L. belongs to the Campanulacea family and is represented with 125 native species (135 taxa) in Turkey. This study was conducted in *C. glomerata* L. subsp. hispida (Witasek) Hayek. taxa which having ornamental plant potential. Freshly-matured seeds of *C. glomerata* subsp. hispida were collected from wild populations growing on Ilgaz Mountain (Turkey) at an altitude of 1780 m. The effects of different sowing times and 1000 mg l^{-1} gibberellic acid (GA_3) pre-treatment on emergence were investigated in seeds collected from nature. Seeds treated with 1000 mg l^{-1} GA_3 and untreated were sowed under unheated greenhouse conditions in 5 different periods (October, November, December, February and March) and emergence rates and times were determined. Emergence percentage (EP) was between %22,50 and to %77,50 while emergence time (ET) changed between 3,96 and 12,99 weeks. Statistical interaction was found between the pre-treatment and sowing time periods for both emergence percentage and time. Successful results in terms of emergence criterias (EP and ET) were obtained when GA_3 applied seeds were sowed in March (EP:%75,50; ET:3,96 weeks) and October (EP:%75,50; ET:4,29 weeks).

Key Words: Campanula, dormancy, GA3, pre-treatment, seed emergence

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Projections for Productions Some Nuts Fruit Commonly Grown in Turkey

Mehmet YAMAN[1], Aydın UZUN[1], Hasan PINAR[1], Ahmet SAY[2], Necati ÇETİN[3*], Merve Arefe YİĞİT[1]

[1]Erciyes University Faculty of Agriculture Department of Horticulture
[2]Erciyes University Faculty of Agriculture Department of Agricultural Biotechnology
[3]Erciyes University, Faculty of Agriculture, Department of Biosystems Engineering
*Corresponding author: necaticetin@erciyes.edu.tr

Abstract

Turkey is the homeland of many fruit species including especially the nut fruits. Because of available climate conditions, several nut fruit species can easily and reliably be grown all over the country. They are commercially grown in almost all regions of Turkey, thus constitute an important income source for growers. Wild species of nut fruits are encountered in various parts of the country. There is an increasing demand for nuts of nut fruits just because of their nutritional characteristics and uses for various purposes. In this study, projections were made for the production of nut fruits by using the production data of the last ten years provided in Turkish Statistics Institute (TSI). Analyses also revealed that the projection coefficient was 6.54% for almond, 4.66% for hazelnut and 2.55% for walnut. Present analyses indicated that all projection coefficients were positive. It was concluded based analyses made on previous production data that nuts fruit productions will increase during the next decay.

Key Words: Nuts; Production; Projection coefficient

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Two Different Dose Fertilizer Application on the Sorrel (*Rumex acetosella* L.) in Floating Culture

Esra OKUDUR[1*], Nurgül ERCAN[2]

[1]Batman University, Sason Vocational School, Batman-TURKEY
[2]Akdeniz University, Faculty of Agriculture, Department of Horticulture, Antalya-TURKEY
*Corresponding author: esra.okudur@batman.edu.tr

Abstract

In this study it was investigated that the yield and yield components of the sorrel (*Rumex acetosella* L.) (Şahika variety) which were applied twice harvesting method in the greenhouse floating culture. The experiment was carried out in six polyester tanks (200cmx50cmx20cm) by random blocks were placed and triplicated with 36 seedling in each run. Four seeds were planted in one plastic seedling pods to growth sorrel seedlings. Twice harvest application was considered as longer growth period therefore two different doses of Hoagland fertilizer were tested. The first dose was the Full Hoagland Nutrient Solution (FHNS) and second dose was Doubled Hoagland Nutrient Solution (DHNS). The first harvest was followed by a second harvest without any addition of fertilizers and water replace.

Plant rootless length, plant rootless weight, stalk diameter, stalk weight, stalk length, leaf blade width, leaf blade length , leaf blade weight, plots yield, plant root weight, plant root length, leaf colour analysis (L,a,b, hue and chroma values) and leaf dry weight were measured. Statistical analysis performed by using SPSS software. The results showed that the yield of first harvest was 1930 gm^{-2} and the second harvest was 1583 gm^{-2}. The yield of DHNS application at second harvest was found 1450 gm^{-2} and 1120 gm^{-2} at first and second harvest period, respectively.

Key Words: *Rumex acetosella* L.; hydroponics; floating culture; Hoagland fertilizer

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Influence of the Use of Plant Activators on the Mineral Elements Content of Leaves in the Organic Pepper Production

Halime ÖZDAMAR ÜNLÜ[1*], Hüsnü ÜNLÜ[1]

[1]Süleyman Demirel Univ., Faculty of Agriculture, Horticultural Sci. Department, 32260, Isparta, Turkey
*Corresponding author: husnuunlu@sdu.edu.tr

Abstract

The study was conducted to produce organic peppers in 2013-2014 years under open land conditions suitable for organic agriculture in Yalvaç province (Isparta, Turkey). 'Delta 07' hybrid pepper cultivar was used as plant material in the study. In the experiment, organic peppers were produced using three different plant activators including Crop-Set, Manda 31 and Soil-Set. Moreover, for the comparison, peppers were also grown using conventional production system and in control parcels which received no treatments. The nutritional status of the plants obtained were determined by the analyses of macro (N, P, K, Ca and Mg) and micro (Zn, Mn, Fe, Cu and B) nutritional elements in the leaves of plants.
The results obtained showed that the N, P, K, Ca, Mg, Zn, Mn, Fe, Cu and B contents varied between 3.50-4.20%, 0.45-0.77%, 3.70-4.31%, 3.50-4.30%, 0.77-0.96%, 19.8-22.3 ppm, 26.15-34.50 ppm, 12.15-15.50 ppm, 11.85-12.80 ppm and 35.00-51.35 ppm. Moreover, in the study, while the highest N, P, K and Ca concentrations in pepper leaves were obtained from conventional treatment, the lowest values were observed in the control treatment. On the other hand, in the organic production, the N, P, K and Ca concentrations in the pepper leaves were increased in all plant activator treatments as compared to the control treatment.

Key Words: Pepper, organic production, plant activators, plant nutrition status

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Microbial Fertilizer and Sugar Beet Melon Application on the Yield and Plant Growth of Watermelon in Çukurova Region

Seyyid IRMAK[1*], Pakize GÖK[2], Mahmut YEGÜL[2], Murat SİMSEK[3]

[1]Şırnak University, Agriculture Faculty, Department of Horticulture, Şırnak
[2]Biological Control Research Institute, Adana
[3]Eastern Mediterranean Agricultural Research Institute, Adana
*Corresponding author: seyyidirmak@hotmail.com

Abstract

In this study, was investigated advantageous of microbial fertilizer than chemical fertilizers (N and P) on watermelon in Çukurova Region in Turkey. The experimental design was randomized block with four replications. There were five different methods: 1) Zero doze control application, 2) traditional fertilizing application (16 kgda^{-1} N, 8 kgda^{-1} P_2O_5). The other application were done with three different forms of microbial fertilizer; 3) 300 cc da^{-1} Microbial fertilizer + 5 kgda^{-1} sugar beet molasses, 4) 300 ccda^{-1} Microbial fertilizer + 5 kgda^{-1} sugar beet molasses + high fertilizer 150 ccda^{-1} Microbial fertilizer + 2 kg da^{-1} sugar beet molasses and 5) 300 ccda^{-1} Microbial fertilizer + % 25 traditional fertilizing application. The highest yield was 3638.89 kgda^{-1} in 300 ccda^{-1} Microbial fertilizer + 5 kgda^{-1} sugar beet molasses application and the least yield was determined as 3138.89 kgda^{-1} in traditional fertilizer (16 kgda^{-1} N + 8 kgda-1 P_2O_5) application. The yield was 3597.22 kgda^{-1} in 300 ccda^{-1} Microbial fertilizer + 5 kg/ha sugar beet molasses + high fertilizer 150 ccda^{-1} Microbial fertilizer + 2 kgda^{-1} sugar beet molasses. Also yield was 3486.11 kgda^{-1} in 300 ccda^{-1} Microbial fertilizer + % 25 traditional fertilizing application. There was no significant difference between chemical fertilizer application and microbial fertilizer application. According to these results, it is advisable to use microbial fertilizer which does not pollute the environment.

Key Words: Watermelon, microbial fertilizer, chemical fertilizer, yields

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Outdoor Ornamental Plants in Landscape Planning and Design Studies in Şanlıurfa

İbrahim Halil HATİPOĞLU[1*], Bekir Erol AK[2], Meral DOĞAN[1]

[1]Harran University, Graduate School of Natural and Applied Sciences, Department of Horticulture
[2]Harran University, Agriculture Faculty, Department of Horticulture
*Corresponding author: ibrahimhhatipoglu@gmail.com

Abstract

City planning studies great importance have gained in parallel migration phenomenon to cities and city expansion in our country. At the head of factor affecting positive aspect people living in cities have became urban open green areas. Areas must be created which will support biodiversity in city and meet recreational activities of urban person, provide bioclimatic comfort. In this context; besides features of plant as well as their functional features have great importance to property of urban landscape and local ecology. Şanlıurfa thanks to its georafical location and natural cultural resources, it is one of the most developing city of our country. The speed urbanization of city central and on the other side it is located on the historical 'Silk Road' and the urban landscape planning activities can be developed as an important sector in terms of seeing a bridge between the cities. Because of the geographic features of this city and socio-economic structure appear the importance of ornamental plant cultivation. This information is in the light; the aesthetic and functional properties of outdoor ornamental plants suitable for urban identity, which can be used in Şanlıurfa ecology, have been examined and it's use diferent areas has been discussed with landscape arregement studies of the plant. In this context, the importance of cultivation ornamental plants has been assessed, by examinin the economic values of plants in the city of Şanlıurfa.

Key Words: Ornamental plants, Landscape Planning, Urban Landscape, Şanlıurfa

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Disabled Accessibility Examinatıon in Landscape Planning in the Light of Concept ''Horticultural Therapy'' in Harran University on Osmanbey Campus

İbrahim Halil HATİPOĞLU[1*], Meral DOĞAN[1], Sadettin GÜRSÖZ[2]

[1]Harran University, Graduate School of Natural and Applied Sciences, Department of Horticulture
[2]Harran University, Agriculture Faculty, Department of Horticulture
*Corresponding author: ibrahimhhatipoglu@gmail.com

Abstract

Building areas that have grown in parallel with the population increase in the cities, climate is changing besides being a source for environmental pollution. In city converting to concrete forest, noise monotony of color, lack of aesthetic cause negative effect on human psychology ,people who is gradually moving away from nature getting bored the life of city's tired and stress and so human is again searching nature to rest ,to find peace and to renew. Sustainable approaches should be met with urban landscape planning principles, In the university campuses, which are planned as 'cities' in our country. The accessibility and accessibility of disabled people is often ignored in this area like most are in the area. Urban green areas come at the forefront of the public spaces where disabilities need access. However, mostly disabled people are planned in these areas without consideration. It is thought that knowing the cognitive and motor skills of individuals with disabilities and these types will contribute to the planning of areas that all individuals can use equally. The concept of 'horticultural therapy' has been examined by taking into account the aesthetic, functional, ecological and educational characteristics of plants as well as the availability of structural materials used in landscape design to all individuals. Horticultural therapy is a combination of therapeutic, educational and promotional activities based on elements such as plant and soil, which support the well being of children and adults with physical or mental disabilities and any age group treated at the hospital for any reason. In this study, examples from both the world and our country were investigated and the integration of all individuals into the urban landscape according to the types of obstacles, accessibility and inclusion and the concept of horticultural therapy and planning for the rehabilitation and socialization of disabled groups in urban areas were researched at Harran University Osmanbey Campus the scale. In this context, it is planned to make a sample landscape design by suggesting solution for the disabled-friendly planning of the general structure of the campus.

Key Words: Horticultural therapy, Landscape planning, Disabled-Friendly

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Increased Tolerance to Chilling Stress in Eggplant at Flowering Stage by Exogenous Melatonin Application

Gökçen YAKUPOĞLU[1*], Şebnem KÖKLÜ[2], Ahmet KORKMAZ[2], Asima KLICIC[2]

[1]Bozok Univ., Agriculture Faculty, Dept. of Horticulture, Yozgat, Turkey
[2]Kahramanmaraş Sütçü İmam Univ., Agriculture Faculty, Dept. of Horticulture, Kahramanmaraş, Turkey
*Corresponding author: gokcen.yakupoglu@bozok.edu.tr

Abstract

Melatonin (MEL; N-acetyl-5-methoxytryptamine) plays an important role in plant abiotic and biotic stress tolerance. To take the advantage of antioxidant properties of melatonin, the effectiveness of MEL application (0 and 5 µM) as soil drench in enhancing chilling stress tolerance of eggplant plants was investigated. One day after the melatonin applications, plants were subjected to chilling stress at (5 ºC/10 ºC, night/day) for 3 days. Treatment of plants with 5 µM MEL at the flowering stage indicated that MEL treatments alleviated the detrimental effects of chilling stress and caused significant improvement in early yield and slight increase in the final yield. The results also indicated that MEL application resulted in decreased visual damage, H2O2 and MDA contents while increasing the photosynthetic parameters. Early yields following stress were doubled by MEL treatment and MEL application before chilling stress caused 31% increase in total yield. Number of fruits was also increased 20% by MEL application. Thus, it was deduced from the result of this research that application of 5 µM MEL through soil drench could be used to improve eggplant plant growth and yield potential under chilling stress conditions.

Key Words: Chilling stress, eggplant, melatonin, stress tolerance, yield

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Brassinosteroid Applications on Some Vegetative Growth of Strawberry Seedling under Salt Stress Conditions

Gülden BALCI[1*], Hakan KELES[1], Servet ARAS[1]

[1]Bozok Univ., Agriculture Faculty, Dept. of Horticulture
*Corresponding author: gulden.balci@bozok.edu.tr

Abstract

Salinity is one of the major environmental abiotic stresses that deleteriously influences fruit yield and quality. Brassinosteroid (BR) treatment effectively counteracts the effects of many abiotic stress factors such as drought, cold, iron deficiency. The study was conducted in the greenhouse of Gedikhasanlı Research Field in Bozok University with a strawberry plant (Fragaria x ananassa.) cv. Sweet Ann in pots. The plants were imposed to salinity stress for 2 months with 35 mM NaCl, 2 months after planting. BR with different three doses (1, 2 and 4 mM) was applied to the leaves of the salt-stressed strawberry plants except control (only salt treated plants), 1 day before salt treatment. End of the study, fresh and dry weights of roots and leaves, root mass ratio, shoot mass ratio and dry root:shoot ratio were determined. 4 mM BR had the highest values in plant growth properties.

Keys Words: Strawberry, Brassinosteroid, salt stress, vegetative growth

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Sapling Performance of Early Grape Varieties on Different Rootstocks

Seda SUCU[1], Adem YAĞCI[1]

[1]Gaziosmanpaşa University, Agriculture Faculty, Department Of Horticulture
*Corresponding author: Not identified

Abstract

Although there are many theoretically many methods, viniculture reproduction is common and practically done with grafting. Differences in rootstock and variety from grafting materials lead to differences in yield and quality of sampling. This study was carried out in 2017. İn the study, were used 5 BB, Rupestris du Lot, 1103 Paulsen 41 B, 110 R rootstock and Yalova İncisi, Çavuş, Prima, Trakya İlkeren ve Narince varieties. In grafted plants were examined sapling yield and quality features. Narince / 1103 Pa, Narince / 41 B, Prima / 1103 Paulsen combinations were the main results in terms of total sapling yield. Yalova İncisi / 5 BB in terms of shoot length, Çavuş / 110 R in terms of root length, Trakya İlkeren / 1103 Paulsen in terms of dry shoot weight has come to the forefront. In terms of wet shoot weight, age and dry root weight, interactions between rootstocks and varieties were not statistically significant.

Key Words: grafting sapling, quality, sapling yield

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Grape Seed Oil Components and Different Usage Areas

Aysel YEŞİLYURT ER[1], Çiğdem ELGİN KARABACAK[1*]

[1]Pamukkale University, Çal Vocational School
*Corresponding author: cekarabacak@pau.edu.tr

Abstract

Grape seeds are by-products of molasses, fruit juice and wine industry. About 38-52% of the marc, which is rich in bio-active components, is the seed. Evaluation of grape seeds and oils is both important in terms of waste management and economics. The amount of oil it contains varies from about 7% to 20%, depending on the species, variety, ripening and harvesting time, climate, soil and growing conditions and processing technology. It has a fairly high value (about 90%) in unsaturated fatty acids and the main component is linoleic acid (72-76%). This oil contains significant amounts of free fatty acids, linoleic acid (C18: 2), oleic acid (C18: 1), linolenic acid (C18: 3), palmitoleic acid (C16: 1), mono and diglycerides. In addition, about 10% of the composition forms palmitic (16: 0) and stearic (18: 0) acids, which are saturated fatty acids. The information on usage areas in medicine, cosmetics, food and livestock sector of the grape seed oil which is beneficial in terms of health during the studies carried out especially in recent years has been compiled.

Key Words: Grape Seeds, Grape Seed Oil, Linoleic Acid

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Nutrition, Chlorophyll and Leaf Area Levels of Different Vineyard Varieties in Marginal Land

Muzaffer KIRPIK[1], Gökhan BÜYÜK[1*], Armağan KAYA[2], Ceren A. BAYRAM[1], Ahmet ÇELİK[1], Erhan AKÇA[3]

[1]Adıyaman University, Kahta Vocational School
[2]Alanya Alaaddin Keykubat University, Alanya Engineering Faculty
[3]Adıyaman University, Technical Sciences Vocational School
*Corresponding author: gbuyuk@adiyaman.edu.tr

Abstract

This study was carried out in order to determine the chlorophyll density (SPAD values), leaf area values and plant nutritional status of different American vine species and to approach grape growing in the region. The trial was carried out between 2014 and 2015 at the Agricultural Research and Land Application Management Center of Adiyaman University, which represents the soil and land conditions of the region.
SPAD values measured in 13 different variants have varied between 30.8-39.1. When the average SPAD values were examined, it was measured as 38.1 in Bogazkere as the second highest, lowest in Yalova İncisi and 30.8 in Royal type, respectively, in the highest group with 39.1 in Buffalo Eye type.
Leaf area measurements have ranged from 126.6 to 198 cm^2. As the ripening period has lengthened, the leaf area also has increased. At a significance level of 0.01, significant correlations were found between chlorophyll and nitrogen; between leaf area and Mg; and between K / Mg and K. In addition, significant correlations between Fe and P were found at a significance level of 0.05. While the amount of K in the soil was sufficient, the plant have been inadequately measured. Despite lack of Fe and Zn in soil, only Zn deficiency has been detected in plants. In order to solve these problems without using chemical fertilizers, Perlette, Trakya İlkeren and Yalova İncisi, which have higher and earlier concentrations in the plant, should be used.

Key Words: Leaf area, organic farming, SPAD, vineyard, plant nutrient element

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Current Situation, Problems and Suggested Solutions of Viticulture in Malatya Province

Ayşe ÖZER[1*], Gültunay EREN[1], Onur GÖKÇEK[1], Orhan GÜNDÜZ[1]

[1]Inonu University Battalgazi Vocational School, Malatya, TURKEY
*Corresponding author: ayse.ozer@inonu.edu.tr

Abstract

Malatya province, where located in Middle East Anatolian, one of the important viticulture centers of Turkey. Vineyards have been cultivated in thirteen district of Malatya that have got different climate characteristics. Growing of seeded raisin grapes, seeded table grapes and wine grapes in the region is widely rate. In 2017, a total of 13.978 tons of grapes were produced in 40.825 decares of the province. Arapgir district leads the region in terms of total vineyard area and grape production. Arapgir Köhnü Grape has been moved one step ahead in region with its registered geographical indications certificate. However, there are many problems in the region such that molecular characterization studies of grape varieties, cultural treatments, forms of evaluation, storage, marketing, co-operatization, advertising, protection of genetic resources, certified and true to named nursery supply. All the factors mentioned constitute an obstacle to the region's grape growers. In this study, it was aimed to reach the real potential of the region vineyards by presenting the causes and solutions of the problems to the relevant stakeholders.

Key Words: Arapgir Köhnü Grape, geographical indication, viticulture, Malatya

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Climate Change on Organic Vegetable Farming and the Environment

Funda YOLDAŞ[1*]

[1]Ege University Ödemiş Vocational School , Ödemiş-İzmir
*Corresponding author: funda.yoldas@ege.edu.tr

Abstract

The adverse effects of global climate change, brought about by global warming and global warming, are only experienced all over the world. The term "global warming" refers to the systematic production of warmth all over the world and thus a climate change. In short, Global warming; the art of heat and its emergence in the atmosphere and in the oceans are all of the climate changes.
In order to prevent global warming, renewable energy sources such as coal, oil, natural gas, fossil fuels, water, wind and solar energy have to be used. This is a risk for sectors that are directly or indirectly affected by climatic events. Agriculture (vegetable and animal production, organic agriculture), agricultural activities, forestry and tourism are at the forefront of these sectors.

Key Words: Global warming, global climate change, organic farming, agricultural activities

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Growing Aronia Berry (*Aronia melanocarpa* (Michx.) Elliot)

Sevgi POYRAZ ENGİN[1], Yılmaz BOZ[1], Cevriye MERT[2], Ayşe FİDANCI[1], Ali İKİNCİ[3*]

[1]Atatürk Horticultural Central Research Institute, Yalova
[2]Uludağ University, Faculty of Agriculture, Department of Horticulture, Bursa
[3]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa
*Corresponding author: aliikinci@harran.edu.tr

Abstract

Aronia (*Aronia melanocarpa*), commonly called "black chokeberry" or "aronia berry", is a type of berries which is a deciduous shrub belonging to the *Rosaceae* family. This plant, native to the Northeast of the United States and the East of Canada, naturally grows in the areas with full sun and the edges of forests. Aronia is not drought-resistant. On the other hand, it can withstand temperatures lower than -30 °C. Aronia bushes can grow up to 2-4 m in their natural habitat and their width can reach 1-2 m. Its fruit is a pome in terms of botany. The diameter of its fruits varies between 6-13 mm and the weight of those varies between 0.5-2 g. The berries mature between August and September and can be harvested by hand or with a mechanical harvester. Mature plants yield 10-15 kg per decare. When fully matured, its black colored fruits are consumed freshly. Also, they can be utilized as frozen or dried, in making cake, pie, pancake, jam, wine, tea, sauce, juice. Aronia fruits have rich content in terms of vitamins, minerals, and folic acid. Also; it is one of the richest plant sources of phenolic compounds, mainly proanthocyanins and anthocyanins.

Key Words: Aronia; *Rosaceae*; Berry; Phenolic compound; Anthocyanin

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Phenological Traits of Some Domestic and Foreign Pistachio Cultivars at Akçakale Province in Şanlıurfa

Mehmet Fatih BASARICI[1], Yusuf NİKPEYMA[2], Bekir Erol AK[3*]

[1]Harran Univ., Graduate School of Natural and Applied Sci., Department of Horticulture, Şanlıurfa-TURKEY
[2]Kahramanmaraş Sütçü İmam Univ., Agriculture Faculty, Dept. of Horticulture, Kahramanmaraş-TURKEY
[3]Harran University, Agriculture Faculty, Department of Horticulture, Şanlıurfa-TURKEY
*Corresponding author: beak@harran.edu.tr

Abstract

Turkey is one of the native country of pistachios. Pistachio nut has been cultivated thousand years ago. In fact Anatolia is one of location where pistachio has been originated. Pistachio is generally grown at Southeast Anatolian Region of Turkey. Sanliurfa is very important producer city. This study was performed in 2013 for observation of phenological observations of 15 domestic and foreign cultivars which are grown under irrigated conditions in Pistachios orchard in GAP Agricultural Research Institute in Akcakale province which is border of Syria. In this study, 3 trees have been selected among each varieties. Date of bud bursting, beginning of flowering, full flowering, end of flowering and small fruit set were determinated due to field observation for each variety. In general, when observed findings in this study are evaluated, the early varieties are Siirt Keten Gomlegi and Beyazben, the latest varieties are Mumtaz and Cakmak in terms of phenological developments.

Key Words: Pistachios, cultivars, phenology, flowering.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

International Pomegranate Trade and Pomegranate Standard

Ali İKİNCİ[1*], İbrahimBOLAT[1], Mikdat ŞİMŞEK[2]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa - Turkey
[2]Dicle University, Faculty of Agriculture, Department of Horticulture, Diyarbakır - Turkey
*Corresponding author: aliikinci@harran.edu.tr

Abstract

Today, after verifying that pomegranate fruits, flowers, bark and leaves have superior pharmacological and therapeutic properties, worldwide demand for this fruit is increasing. India is the world's largest producer of pomegranate, with a production value of 1 789 310 tonnes in 2015. In contrast, India performs only 7% of total world pomegranate exports. Turkey is an important and growing player in the world's pomegranate market. In Turkey, pomegranate cultivation is increasing in different regions suitable for pomegranate ecology. Among the most grown pomegranate cultivars in Turkey are Hicaz, Wonderful and Caner. Hicaz is the most produced and most consumed cultivar in Turkey. This cultivar is available in markets from September to March. Turkey pomegranate production is 445 750 tons in 2016 according to agricultural statistics. In 2017, Turkey generated $ 97 million of revenue from 164 000 tons of pomegranate exports. Turkey exports a significant portion of pomegranate to Russia, Iraq, Ukraine, Germany, Belarus, Moldova, Bulgaria, Sweden, England and the Netherlands. Turkey exported 53 368 tons pomegranate to Russia according to 2013 data. The average unit price of exported pomegranate amounted to $ 1610/ton. Turkey has increased pomegranate market share in the Russian market to 27.9% while it was ranked second place, it has increased market share in Germany to 5.5% while it was ranked third. In this study, important pomegranate exporters and importers countries in the world, the most important pomegranate cultivars exported, the problems of pomegranate export and the International pomegranate standard for exports are given information.

Key Words: *Punica granatum*; Pomegranate export; Hicaz cultivar; Wonderful

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Importance of Pollination and Fertilization in Olives

Bekir Erol AK[1*], Ebru SAKAR[1], Şehnaz KORKMAZ[2], Sibel SÖYLEMEZ[2]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa – TURKEY
[2]GAP Agricultural Research Institute, Şanliurfa-TURKEY
*Corresponding author: beak@harran.edu.tr

Abstract

Pollination and fertilization is very important in fruit trees. Some fruit species can be set fruit asuch as apple, pear, persimmon etc. without pollination because of their pomological situation of parthenocarpy. Flowers are borne on panicles arising in the axils of leaves in olive tree. Flowers are two types; first is perfect flower which have both pistils and stamens and second type fowers have only staminate floers with obortive or unfunctional pistils. Pollen transfer to pistil by wind. Olive needs pollination either self pollen or another cultivar's pollen. Compatibility between cultivars could reduce the problems of self-sterility that have been observed in olives. Emission of pollen at differing times could lead to lower reproductive success, since self-sterile cultivars may not be receptive when pollen is either released from other cultivars or pistils have passed their optimum receptivity, Differences between various olive cultivars were observed regarding the onset and the start and length of flowering period. These differences are strictly correlated to differences in micro and mega gametogenesis and are cultivar specific characteristics.

Key Words: Olive, pollination, fertilization, fruit set

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fig Production at Southeast Anatolia Region of Turkey and Its Importance

Bekir Erol AK[1*], Sibel AKKUŞ BİNİCİ[2], Miktad SİMSEK[3], Halil İbrahim OĞUZ[4]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa – TURKEY
[2]GAP Agricultural Research Institute, Şanliurfa-TURKEY
[3]Dicle University, Agriculture Faculty, Department of Horticulture, Diyarbakır – TURKEY
[4]Nevşehir Hacı Bektaş Veli Univ., Engineering - Architecture Faculty, Nevşehir – TURKEY
*Corresponding author: beak@harran.edu.tr

Abstract

Fig (*Ficus carica* L.) is one of the most important fruit species grown in the Mediterranean countries and Anatolia is an important gene source for horticultural crops with varieties which have multiplied numerously during the centuries. Some temperate fruit species as well as figs are also originated in Turkey. Fig is widely grown and extends to the Southeast Anatolia part of Turkey. On the way of the extension of fig to the neighbouring countries such as Iraq, Syria, Caspian Sea and Caucasia, a rich genotype population occurs in Anatolia.Therefore, Southeast Anatolia Region has a special place of containing rich fig germplasm. Some selection researches were done. But especially Adiyaman, Gaziantep and other cities also have different fig types to be selected. In Turkey's famous cultivar is Bursa Siyahı. In export take place a great demand from Turkey. Recently there has been a big demand for fresh figs in the European markets. So, fresh figs from Turkey should have a big market in the very near future

Key Words: Fig, GAP Region, production, germplasm.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Importance of *in vitro* Micropropagation of Fruit Crops

Bekir Erol AK[1*]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa - TURKEY
*Corresponding author: beak@harran.edu.tr

Abstract

Propagation of fruit trees geneally were done by seed org rafting. Seed may use to produce for breeding and seedling to make budding on them. That means to produce budded plants. The rootstooks are very important to modern fruit growing system. These rootstocks should be propagated by vegetative methods. Nowadays these are producing by tissue culture.

Plant tissue culture is the production of new plant tissue. The reasons to use tissue culture methods in fruit growing are mass propagation, breeding pathogen free-plant production and germplasm preservation etc. Main problem of this method, efficient rooting of in vitro–grown shoots is a prerequisite for the success of micropropagation. The success of acclimatization of a plantlet greatly depends on root system production. Rooting of trees and woody species is difficult as compared to herbaceous species in vitro. There are some advantages of microprogation in fruit growing. These are; to produce lots of new plants in short time, to require smaller space for production, to produce pathogen free plants, to continue year-round production, to decrease risk in germplasm preservation.

Because of all the reasons mentioned above, tissue culture studies has been done in fruit growing for different purposes. Tissue culture will be very important part of modern fruit growing in future.

Key Words: Fruit, Biotechnology, Tissue Culture, Propagation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Some Morphological Characteristics of Different Olive Types Grown in Osmanbey Campus, Şanlıurfa

Hatice KAYMAK[1], Bekir Erol AK[2*], Ebru SAKAR[2]

[1]Harran Univ., Graduate School of Natural and Applied Sci., Department of Horticulture, Şanlıurfa-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa - Turkey
*Corresponding author: beak@harran.edu.tr

Abstract

The origin land of olive is Mediterranean region and it spreads to the northern and eastern coastal countries of Mediterranean by way of Anatolia. Later on, it is known that olive trees have been taken from these regions to America. Olive growing regions spreads between 30 and 450 latitudes and over 900 million olive trees are growing on over 10 million hectars land in the world. This study was carried out using different olive types being grown at agricultural research area of Harran University, Osmanbey Campus, Şanlıurfa, between 2009 and 2011 years. Leaf samples were taken from each tree between 1st October and 15th October. As determining morphological traits per tree at harvest period, adequate amount of samples of leaf and flower was taken from each tree to investigate morphological and phenologic characteristics as well as general tree features. Measuring and analysis of leaf and flower were done at these taken samples. According to results, it was determined differences between olive types in point of morphologic characteristics of leaves and flowers.

Key Words: Olive, phenology, morphology, leaves, flowers

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Irrigation of Pistachio Trees in Turkey and Its Importance

Bekir Erol AK[1*], İzzet AÇAR[1]

[1]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa - Turkey
*Corresponding author: beak@harran.edu.tr

Abstract

Pistachio is grown most intensively in Iran, Syria, Turkey and U.S.A. The other pistachio producing countries are in the Near East, North Africa and the Southern Europe. The pistachio trees are irrigated in Iran and U.S.A.. As it is well known that irrigation is a very important factor in obtaining high yields on good quality. In the very near future new and irrigated pistachio nut orchards in the Southeast Anatolia Project (GAP) region will expand Turkey's pistachio nut areas. It is expected that when the project is completed the Turkish pistachio nut production will be at least doubled. The irrigation experiments with different rootstocks have already been started in Sanliurfa where pistachio grown main province.
The expected changes by irrigation, leaf size, number of current year's shoot and length of shoot will be increased. The result with irrigation increasing the yield, bigger nut size, high splitting percentage, low blank nut rate and lesser alternate bearing will be obtained. Some problems also occure becasue of unsuitable irrigation system.

Key Words: Pistachio, irrigation, yield, Turkey

Plant Protection Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Herbicidies on Inbred Maize Lines

Recep YAVUZ[1*], Mesut ESMERAY[1], Vesile URİN[1]

[1]Maize Research Institute, Sakarya-TURKEY
*Corresponding author: recep.yavuz@tarim.gov.tr

Abstract

This study was conducted to investigate the effects of maize licensed herbicide with isoxaflutole + thiencarbazone-methyl + cyprosulfamide active ingredient for maize plants on maize lines. The investigate were carried out four repetitive with the randomized blocks factorial design at the Kirazca Field of the Sakarya Maize Research Institute in 2017. The field is at a distance of 12 km to the center of Sakarya, 40° 42 ' north latitude, 30° 22' east longitude and 31 m high from the sea. ADK 310, ADK 912, ADK 451, ADK 926, ADK 722, ADK 931, ADK 732, ADK 1026, ADK 866, DH 166, ADK 875, DH 332 inbred maize lines were developed by the Sakarya Maize Research Institute Directorate were used as the material. Xanthium strumarium L., Echinochola crus-galli (L.) P.B. and Portulaca oleracea were identified as dominant weeds in the experimental area.The excess yield obtained in the ADK 866 (7230 kg ha-1) inbred maize line, where the highest yield was obtained, is statistically significant. DH 332 (212.5 cm), in which the highest plant height was obtained, was found to be statistically significant in terms of the height difference obtained in the mazie line. According to the results of this study, maize licensed herbicide has been evaluated to cause different effects on the maize lines. It is considered that knowledge of the tolerance properties to herbicides of maize lines is important for studies to obtain tolerant varieties to herbicides.

Key Words: Herbicidies, Inbred Maize Lines, Tolerance, Yield

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparing the Effects of Natural Events such as Frost and the Effects of Several Diseases and Pests

Aysel YEŞİLYURT ER[1*]

[1]Pamukkale University, Çal Voc. School, Denizli-TURKEY
*Corresponding author: ayer@pau.edu.tr

Abstract

Viticulture is a branch of agriculture, which has an important place in our economy and in which the crops can be utilized in different ways. It is cultivated in all the regions in Turkey, except for the Eastern Black Sea region. It might not be possible to manage the effects of disease/pests and climatic risks in open-area farming. In order to take measures against these risks more easily, it is necessary to have knowledge about the effect mechanism and symptoms of risks, and to distinguish them. There are many farmers reporting to the insurance companies that he/she suffered losses due to hail squall although he/she actually suffered losses due to mildew.
In this study enriched with land observations, the symptoms of diseases/pests, which are observed in grapevines but might be confused with the effects of natural events, were discussed, and it was aimed to draw the attention on this subject. The climate changes due to global warming directly affect all the actors in this industry. TARSIM, the operator company of state-funded agricultural insurance system, takes the product under protection against all these risks; it receives hundreds of notifications during the season and a significant portion of them are incorrect. When the damage on the product insured by farmer was accurately determined and the notification was made accurately, the workload of TARSIM reduced and also the farmer do not lost his/her trust. Thus, it is important to discuss and examine the subjects that might lead to failures in agricultural production.

Key Words: Viticulture, disease/pests, climatic effects, comparison

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Container Size and Population Density on the Preadult Developmental Duration and Mortality in the Mass-Rearing of the Predatory Lady Bird *Oenopia conglobata* (L.) (Coleoptera: Coccinellidae) for Biological Control

Mehmet MAMAY[1*], Çetin MUTLU[1], Sultan ÇOBAN[1], Ceyhan SÖNMEZ[2], Emine KAPLAN[3]

[1]Harran University Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
[2]Harran Univ., Graduate School of Natural and Applied Sciences, Dept. of Plant Protection, Şanlıurfa-TURKEY
[3]Sütçü Imam Univ., Graduate School of Natural and App. Sci., Dept. of Plant Prot., Kahramanmaraş-TURKEY
*Corresponding Author: mehmetmamay@hotmail.com

Abstract

Oenopia conglobata (Linnaeus) (Coleoptera: Coccinellidae) is one of the major macrobial agents used in Biological Control against agricultural pests. In this study, it is aimed to determine the most suitable cage size and optimum population density in order to produce mass rearing of *O. conglobata* economically, quickly and efficiently. The main materials of the work are eggs of *Ephestia kuehniella* Zeller (Lepidoptera: Pyralidae) as prey and predatory *O. conglobata*. Three different containers (called A, B, C) and four different larva population density (1, 5, 10, 20 larva) were tested in the study.

The highest overall survival rate was determined in C1 combination (90%). When 20 individuals were grown 5.35, 10.55 and 12.3 individuals reached the adulthood per container called A, B, C and the overall viability rates were 26.75%, 52.75% and 61.50% respectively. The survival number was lower in the population density of 10 compared to the 20 population density with 1.65, 6.1 and 7.15 individuals respectively. The shortest larva development duration was obtained in A20 combination and the shortest pupa development time was obtained in B20 combination. It is concluded that the lesser population the higher survival rate. But, in this case we need many containers. Thus, the most efficient combination should be preferred at high population densities.

As a result, when the survival and mortality rates and developmental durations are taken into account, it was suggested that *O. conglobata* should be mass reared in jars called C with 20 larva density because of more economically under laboratory conditions.

Key Words: Biological Control, *Oenopia conglobata*, Mass Rearing, Population, *Ephestia kuehniella*

Acknowledgements: This study was funded by the Scientific Research Projects Committee of Harran University (HÜBAK project no: 17005).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation the Resistance of Watermelon Genotypes to the Root Knot Nematode (*Meloidogyne incognita* (Kofoid & White, 1919) Chitwood, 1949))

Adem ÖZARSLANDAN[1,3*], Veysel ARAS[2], Refik BOZBUGA[1]

[1]Biological Control Research Institute, Adana-TURKEY
[2]Alata Hortıcultural Research Instıtute, Erdemli, Mersin-TURKEY
[3]Applied Technology and Management School of Silifke, Mersin University, Mersin-TURKEY
*Corresponding author: ozarslandan2001@yahoo.com

Abstract

Root-knot nematodes have a very broad host range and cause significant crop losses in many plant species in the world. It causes yield losses in watermelon areas in the Mediterranean region of Turkey. Determination of resistant and tolerant genotypes is of high importance in controlling the root nematode. However, no studies have been found determining the resistance of watermelon genotypes in our country. This study was also conducted at the Alata Horticultural Research Institute in order to determine the resistance of genotypes. Watermelon varieties and lines used for breeding purposes were in infected soil with root knot nematode and the number of the second stage juveniles in the soil was determined during the harvesting period. The galling index is based on 0-5 scale values. As a result, it was determined that all of the 23 watermelon varieties and lines were sensitive to root-knot nematode. However, it was determined that the lowest rate of galling at 126 and 132 watermelon lines was 3 gall index while the rate of galling at 12 watermelon line at which galling index rate was highest. It has been determined that the least number of second stage juveniles was at 12 watermelon lines and the highest number was at 132 line. All watermelon lines were found to be sensitive to root knot nematode. It is important that the area to be planted should be clean because of the sensitivity of the watermelon varieties to the root knot nematodes and the investigation of resistance genes in the watermelon against nematodes are important.

Key Words: Root knot nematode, Watermelon, Resistance

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Ecological Niche Models as a Tool to Minimize Biodiversity Crises in Turkey

Feyzanur YILDIRIMTEPE ÇALDIRAN[1*], Shahid FAROOQ[2]

[1]Department of Molecular Biology and Genetics, Gaziosmanpaşa University, Tokat-TURKEY
[2]Department of Plant Protection, Gaziosmanpaşa University, Tokat-TURKEY
*Corresponding author: fyznr.yldrmtp@gmail.com

Abstract

Global climate changes, increasing trade and tourism are giving rise to severe biodiversity crises all around the world. However, these crises have not been regarded seriously in several geographic regions of the world like Turkey. We argue that the introduction and spread of nonnative species is suppressing native biodiversity, while ecological niche models can be used to minimize these crises. Climate change is resulting in biodiversity shifts, declines and redistribution all around the world; however, limited studies have been conducted in to assess the impacts of climate change on country's biodiversity through ecological niche modelling. We hereby review the major challenges to the biodiversity of the country, and possible options to cope with these challenges. The introduction and subsequent invasion of nonnative species is one of the biggest challenge, whose risk should be assessed by ecological niche modelling studies. Identifying the potential hotspots of biological invasions and devising rapid response system (i.e., quarantine measures) could potentially help to reduce these crises. Climate change induced biodiversity redistribution, range shifts and range expansions is the next challenge completely ignored in the country. Thus, assessing the climate change impacts on biodiversity (regardless of taxa) is the field of study needs to be addressed in the country. Presently, no database exists for the distribution records of native and exotic species. Therefore we argue that a concentrated effort by the scientists, stakeholders, government agencies, and public and private sector is needed to address the hidden challenges to biodiversity in the country. The creation of a database, prioritization of the species for conservation and management decisions through risk assessment exercises and predicting the impacts of climate change on all taxa through ecological niche models is the dire need of the time. The possible ways to use ecological niche models and risk assessment tools for different species will be addressed in the talk.

Key Words: Biodiversity crises, Turkey, Challenges, Opportunities

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Survey for Grapevine Leaf Roll Viruses (GLRaVs) in Malatya

Hatice Diğdem OKSAL[1*], Songül AYDIN[1], Hikmet Murat SİPAHOĞLU[1]

[1]İnönü University, Faculty of Agriculture, Department of Plant Protection, Malatya-TURKEY
*Corresponding author: hatice.oksal@inonu.edu.tr

Abstract

Grapevine (*Vitis vinifera* L.) is one of the most important fruit crops in Turkey and viral diseases, are one of the main problems of grapevine production. They decrease yield quantity and quality of crops as well as cause death of the plants in an interaction with other agents. Leaf roll disease of grapevine, caused by a complex of viruses, is considered a serious threat to production across many grapevine growing regions in Turkey. This study was conducted to determine the current status of Grapevine leaf roll associated viruses (GLRaVs) in Malatya province. Grapevine plantations in Malatya province were surveyed for the presence of Grapevine leaf roll associated viruses (GLRaVs) 1, 2, 3, 4 and 6. Purposive sampling was done in vineyards of Arapgir, Darende and Battalgazi districts, which are the primary grape producing areas of Malatya during 2016-2017 growing seasons. A total of 241 samples were collected and tested by DAS-ELISA method. Samples giving two fold of absorbance values (405 nm) of negative control were evaluated as positive. According to the results, 131 samples were found to be infected with GLRaV 1, whereas 48 samples with GLRaV3 and 4 samples with GLRaV 4. None of the samples were reacted as positive against GLRaV 2 and GLRaV 6. Forty five samples were found to be infected with mix infection of GLRaV 1 and 3, and 3 samples were found to be infected with mix infection of GLRaV 1 and 4.

Key Words: Survey, grapevine, Grapevine leaf roll associated viruses, Malatya

Acknowledgements: This study was supported by research grants from İnonu University (Project no 2016-168).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Chalky Spot Damage on Germination and Emergence of Lentil Seeds

Çetin MUTLU[1*], Vahdettin ÇİFTÇİ[2], M. Zahit YEKEN[2], Mehmet MAMAY[1]

[1]Harran University Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
[2]Abant Izzet Baysal Univ., Faculty of Agriculture and Natural Science, Dept. of Field Crops, Bolu-TURKEY
*Corresponding author: cetinmutlu21@hotmail.com

Abstract

Chalky spot damage caused by stink bugs, *Dolycoris baccarum* (L.) and *Piezodorus lituratus* (F.) (Hemiptera: Pentatomidae) is a serious problem on lentil seeds in Southeast Anatolia Region of Turkey. This study was conducted to investigate on germination and seedling growth for tolerance of lentil seeds having different rates chalky spot damage at the laboratory and field conditions. Experimental materials, (Altıntoprak, Çağıl, Fırat 87, Seyran and Tigris lentil varieties) were categorized by separating the stink bugs damaged lentil seeds into four categories as 1/4, 2/4, 3/4, and 4/4 according to their sucking degree and control (without damage). Four replicates of 100 seeds from each variety were germinated between double layered rolled germination papers in the lab conditions. The germination seeds were counted after 4 and 7. days. Two varieties (Çağıl and Tigris) were planted with four replicates in a randomized complete block design in the field condition.

It was determined that sucking degree in lentil seeds had a strong effect on germination power, seedling growth, number of plants and grain numbers. The germination rates were changed according to sucking degrees. The germination powers were between 96.7-100%, 30.0-53.3%, 11.7-28.3%, 1.7-10.0% and 0.0-3.3% respectively on days 7. for control, 1/4, 2/4, 3/4, and 4/4 sucking degrees in the lab. This rate was 82.0-88.7%, 15.3-18.7%, 7.3-12.0%, 0.7-2.7% and 0.0-0.0% respectively in the fields. It was concluded that the germination power of damaged seeds rate is lower than 50% compared to undamaged seeds (control). Therefore, lentil producers should use certified and undamaged lentil seeds for lentil production.

Key Words: Lentil seed, Chalky spot damage, Germination, *Dolycoris baccarum*, *Piezodorus lituratus*

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Insecticidal Efficacy of Native Diatomaceous Earths Against *Sitophilus granarius* (Linnaeus 1758) (Coleoptera: Curculionidae) of Stored Wheat

Çetin MUTLU[1*], Ayhan ÖĞRETEN[2], Sedat EREN[2], Mehmet MAMAY[1]

[1]Harran University Agricultural Faculty, Department of Plant Protection, Şanlıurfa/TURKEY
[2]Diyarbakır Plant Protection Research Institute, Diyarbakır/TURKEY
*Corresponding author: cetinmutlu21@hotmail.com

Abstract

Diatomaceus earth is potentially useful grain protectant because it is safe to use and long term protection on stored wheat. Laboratory experiments were conducted in order to assess the insecticidal effect of native diatomaceous earths (Aydın, Ankara provinces) and a trade mark named SilicoSec® (Biofa GmbH, Germany) against to granary weevil, *Sitophilus granarius* (Linnaeus 1758) (Coleoptera: Curculionidae) on stored wheat in Diyarbakır. Adults of the granary weevils were exposed on wheat and wheat treated with four dose rates of diatomaceous earth: 250, 500, 750 and 1000 ppm. For each dose rate, the treated wheat was placed at 25°C and 30°C temperatures and 40-60% RH conditions. Dead adults were counted after 7, 14 and 21 d of exposure. After 21 d mortality counts, all adults were removed and samples retained under the same conditions for a further 60 days to assess progeny production.

It was found that all of the diatomaceous used in the experiment were effected the pest and dose rate, temperature and exposure interval significantly affected mortality ($P<0.001$) of *S. granarius*. Mortality was higher at longer exposure intervals (21 d). Besides it was observed that rising moisture conditions were reduced, while rising temperature conditions increased effectiveness. The highest mortality rate for *S. granarius* was 100% at 30 °C temperature and 40% RH with 750 ppm dose of Aydın and SilicoSec® diatomite within 21th day in the experiment, while the lowest mortality was 44% at 25 °C temperature and 60% moisture conditions with 250 ppm dose of Ankara diatomaceous. No progeny was produced over 500 ppm dose rate at 25°C and 30°C temperatures. Aydın diatomaceous earth can be used as a potentially grain protectant to control infestations of *S. granarius.*

Key Words: Diatomaceous earth, Stored wheat, *Sitophilus granarius*, Natural insecticide, SilicoSec

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Different Plant and Plant Parts on the Yield of Sunn Pest (*Eurygaster maura* L., Het.: Scutelleridae) Eggs under Laboratory Conditions

Nihan SOYLUTÜRK[1], Levent ÜNLÜ[2*]

[1]Provincial Directorate of Food, Agriculture and Animal Husbandry, Konya-TURKEY
[2]Selçuk University, Faculty of Agriculture, Department of Plant Protection, Konya-TURKEY
*Corresponding author: ulevent@selcuk.edu.tr

Abstract

Eggs parasitoids *Trissolcus* species are successfully used in biological control of Sunn pest (*Eurygaster maura* Het.: Scutelleridae). Under laboratory conditions, these species are produced on Sunn pest eggs, which are living hosts for mass rearing. In order to find out the factors affecting the production of Sunn pest eggs, adults were collected at three different times (10, 20 and 30 April) in winter, on three different host plants (wheat, barley and rye) in laboratory conditions and in two different parts of these plants (stem and leaf). As a result of the study, it was found out that in the eggs production in the laboratory, the first collection time in the winter, the rye plant as the host plant and the stem parts of this plant are important in the Sunn pest egg yield.

Key Words: Biology, *Eurygaster maura*, Sunn pest, *Trissolcus* spp.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Changes of Weed Flora in Cotton Fields since Beginning of the Irrigation in Şanlıurfa Province and Southeastern Region of Turkey

Zübeyde Filiz ARSLAN[1*]

[1]Düzce University, Faculty of Agriculture and Nature Science, Department of Plant Protection, Düzce-TURKEY
*Corresponding author: filizarslan@duzce.edu.tr

Abstract

Şanlıurfa province dominates the cotton production of Southeastern region and provide half of national production. Major changes have occurred in agricultural production, problems and their management in the region after 1995, the beginning year of irrigation. All these agricultural changes affect weeds which restrict the cotton production significantly, and its management. Aim to determine the current weed problems, 60 cotton fields in the Şanlıurfa province, have been examined in 2015 and the changes in weed flora have been identified by comparison with the results of similar studies conducted in the region in the last 25 years.
Based on the survey results; 54 weed species, belonging to 20 families and 39 genus, were determined. The most widespread species in the fields were ranked: *Sorghum halepense* (L.). Pers. (johnsongrass, %73), *Xanthium strumarium* L. (common cocklebur, %67), *Solanum nigrum* L. (black nightshade, %60), *Physalis philadelphica* Lam. (tomatillo, %53) and *Portulaca oleracea* L. (common purslane, %48). Also, some species were recorded at the first time in the region: *Cucumis melo* subsp. *agrestis* (wild melon), *Dinebra retroflexa* (Vahl) Panzer (viper grass) and *Ipomea purpurea* (L.) Roth (common morning-glory). As a result, the weed species, their frequency and density have been changed, significantly. It is predicted that further changes will occur in the future due to the increased irrigation, changes in the cropping patterns and weed control strategies, and also global warming. Therefore, some measures must be taken urgently to deal with the weed problems threatening the cotton production.

Key Words: Weed, flora, cotton, Şanlıurfa, Southeastern Region

Acknowledgements: This study was supported by TAGEM (General Directorate of Agricultural Research and Politics of TURKEY) with the number TAGEM-BS-13 /12-01 /04-01.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Weed Problems in Corn Production in Şanlıurfa Province and Comments to the GAP Region for Management

Zübeyde Filiz ARSLAN[1*]

[1]Düzce University, Faculty of Agriculture and Nature Science, Department of Plant Protection, Düzce-TURKEY
*Corresponding author: filizarslan@duzce.edu.tr

Abstract

Corn sown areas are increasing gradually in Şanlıurfa province and the GAP region. In the last decade, the total sown area has increased by 4 times in the region and 7 times in the province. Approximately, 10% of the total sown area in Turkey and half of the sowing area in the region are located in Şanlıurfa. Weeds restrict the corn production, causing an average of 20-30% yield losses in Turkey. This is the first study on weed flora conducted in the corn fields of the region. With an aim to bring out the weed problems, 61 corn fields in Şanlıurfa were surveyed in 2015, and the frequency and density of weeds were determined.
As a result, 49 weed species, belonging to 19 families and 37 genus, were determined. The most widespread and dense species in the fields were *Portulaca oleracea* L. (common purslane), *Echinochloa crus-galli* (L.) P.B. (common barnyardgrass), *Solanum nigrum* L. (black nightshade), *Xanthium strumarium* L. (common cocklebur), *Sorghum halepense* (L.). Pers. (johnsongrass), *Physalis philadelphica* Lam. (wild tomatillo), *Echinochloa colonum* (L.) Link (awnles barnyardgrass) and *Digitaria sanguinalis* (L.) Scop. (hairy finger grass). In addition, *Cucumis melo* subsp. *agrestis* (wild melon) has been identified for the first time in the corn fields in the region. It is predicted that weed flora will change in the future due to some factors, especially increased irrigation and herbicide applications. For this reason, all measures must be taken to reduce the weed problem. "Integrated Weed Management" based on crop and herbicide rotation should be considered.

Key Words: Weed, flora, corn, Şanlıurfa, Southeast Anatolia Region

Acknowledgements: This study was supported by TAGEM (General Directorate of Agricultural Research and Politics of TURKEY) with the number TAGEM-BS-13 /12-01 /04-01.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Growers' Problems Regarding Weeds and Weed Control Issues in Main Field Crops in Şanlıurfa Province

Zübeyde Filiz ARSLAN[1*], Ayşin BİLGİLİ[2], Ayçin AKSU ALTUN[2], Şeyda İPEKÇİOĞLU[3]

[1]Düzce University, Faculty of Agriculture and Nature Science, Dept. of Plant Protection, Düzce-TURKEY
[2]GAP Agricultural Research Institute, Department of Plant Health, Şanlıurfa-TURKEY
[3]GAP Agricultural Research Institute, Department of Agricultural Economics, Şanlıurfa-TURKEY
*Corresponding author: filizarslan@duzce.edu.tr

Abstract

Weeds cause significant yield losses and the loss usually much more annual plants than perennials. The main field crops in Şanlıurfa are cotton, wheat, lentil and corn, according to the last statistical data about their sown area and production quantity. On a national scale, Şanlıurfa is an important place, especially for cotton and lentil production having more than 1/3rd of the national sown areas and production, alone.
This questionnaire study was conducted in Şanlıurfa between 2014-2016 with wheat, corn, cotton and lentil growers, to determine weed problems in their fields and their strategies for solving the problems. The study was carried out in all regions where the crops are cultivated. Totally 24 questions were asked to 58 wheat, 37 lentil, 53 cotton and 38 corn growers. After the interview, all answers were controlled and the results were analysed statistically in SPSS program.
Some basic information was taken in terms of the weeds such as the troublesome species, control methods preferred and the most used herbicides in the fields. One of the most important results is their need for effective and economic herbicides can control the broadleaved weeds in cotton and lentil fields. It is concluded that suitable strategies should be considered and growers should be educated urgently to deal with the weed problems in these crucial productions.

Key Words: Weeds, field crops, questionnaire, Şanlıurfa

Acknowledgements: This study was supported by TAGEM (General Directorate of Agricultural Research and Politics of TURKEY) with the number TAGEM-BS-13 /12-01 /04-01.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Importance of Cannibalistic Behaviors of Entomophagy Insects in Biological Control

Mehmet MAMAY[1], Hüsna DUSAK[2*], Çetin MUTLU[1], Ceyhan SÖNMEZ[2]

[1]Harran Univ., Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
[2]Harran Univ., Graduate School of Natural and Applied Sciences, Dept. of Plant Protection, Şanlıurfa-TURKEY
*Corresponding author: husnadusak63@gmail.com

Abstract

Chemical management of agricultural pests is not only affects the environment but also human health. Therefore sustainable alternative methods and permanent solutions are imperative in agricultural production. Undoubtedly, the most important of these methods is the Biological Control, which is environmentally friendly approach and based on the use of beneficial insects against the harmful organisms in agriculture. One of the important issues of biological control is the mass rearing of biological control agents. Many factors, as well as cannibalistic behaviors, must be taken into account during mass production of beneficial insects.

Cannibalism is also known as intraspecific predation and frequently seen in insects. It is the process of killing and consuming an individual of the same species. Cannibalism is more prevalent, especially when food insufficiency and population density are high. In some insect species such as praying mantis is also observed in order to accelerate mating. Cannibalism is more common in mass rearing of insect species under laboratory conditions.

Studies have shown that cannibalism occurs in predators, especially when the prey is limited in natural conditions, whereas cannibalistic behaviors are rarely seen when the prey is abundant. As population density increases in parallel with food insufficiency, competition among individuals increases in terms of egg laying, overwintering, living place and nutrition. Cannibalistic behaviors are prevalent among young larvae and nymphs as they need more consumption to grow.

Cannibalistic behaviors differ according to insect species. In cannibalism, inactive periods such as eggs and pupae are more vulnerable to most insect species. These kind behaviors are very common especially in the young larvae of Lepidoptera order. It is also known that eggs and small larvae are eaten by both adults and advanced instar larvae in some insects as well as Coccinellidae family.

The well-known of the cannibalistic behavior of insects is significant to increase the success of mass rearing. In order to prevent cannibalism, it is necessary to avoid starving insects, to provide plenty of prey and to isolate insects in high populations. The hunger duration of mass-reared species should be determined and different biological periods of predators shouldn't be coexisting in isolated production.

Key Words: Cannibalism, Biological Control, Mass Rearing, Entomophag, Carnivor

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Significance of Intraguild Predation in Biological Control

Mehmet MAMAY[1], Havva KARAKUŞ[2*], Çetin MUTLU[1], Ceyhan SÖNMEZ[2]

[1]Harran University, Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
[2]Harran Univ., Graduate School of Natural and Applied Sciences, Dept. of Plant Protection, Şanlıurfa-TURKEY
*Corresponding author: havva-krks-64@hotmail.com

Abstract

One of the environmentally friendly pest management strategies is Biocontrol of arthropods, nematodes, plant pathogens and weeds. It involves the use of natural enemies, including insects and mites, such as parasitoids, predators or pathogens to control pest populations. In biological control application when more than one natural enemy is used together, against the same pest, this combination can come out as an unwanted situation. For this reason, Intraguild Predation (IGP) should well-known in biological management. IGP is described as a natural enemy feeding on another natural enemy when both natural enemies share another resource as food.

In nature, if different species eat or kill limited same or similar source, they are the possible opponent of each other. IGP occurs among the different species that are members of the same unity, and it significantly affects the distribution, quantity, and evolution of many species.

IGP relationships in insects are divided into three. These are Predator-Predator, Parasitoid-Parasitoid, and Predator-Parasitoid interactions. Generally larger predators than other natural enemies cause IGP in biological control. IGP increases in two ways such as either actively with behavioral changes or passively with a reduction of prey. In addition, sometimes IGP maybe increased by the population density of other biological agents. Briefly, body size, predator and prey's biological period, age and the mobility of the individual are the factors determining the hunter in IGP. Inactive and less active phases are captured more easily and are more vulnerable in IGP.

As a result, IGP is common among natural enemies in insects. While some native natural enemies are very successful in the laboratory, they cannot show the same success in nature. It is thought that one of the reasons of this situation is IGP. If natural enemy mixes are used in biological management programs, the relationship between natural enemies should be determined very well. It must be absolutely determined that the together use or the uses of one alone of enemies are more beneficial and economical. In addition, when a natural enemy import to a region, the relations of this insect with native natural enemies must be strictly controlled.

Key Words: Biological Control, Mass Rearing, Intraguild Predation, Inoculative and Inundative Release

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Efficacy of Wood Vinegar and Pesticides on Soil Nematodes in Wheat Agroecosystems

İbrahim, KOÇ[1*], Erdal Necip YARDIM[2], Şenol YILDIZ[3]

[1]Bitlis Eren Univ., Faculty of Engineering and Architecture, Department of Env. Engineering, Bitlis-TURKEY
[2]Bitlis Eren University Rectorship, Bitlis-TURKEY
[3]Abant İzzet Baysal Univ., Faculty of Agriculture and Natural Sci., Wildlife Ecology and Mang, Bolu-TURKEY
*Corresponding author: ibrahimkoc47@gmail.com

Abstract

The study was conducted to investigate the effects of pesticides and wood vinegar on soil nematodes trophic groups which are abundant in soil, in a comparative manner in wheat agroecosystem. Field experiments were set up in 2014-2015 and 2015-2016 growing seasons in Muş province's ecological conditions in winter wheat field in a Randomized Block Design in 4 replications. The treatments; It was conducted as a pesticide / wood vinegar dosage of 0.5% - 1% - 2% - 3% - 4% with 5% mL and control (tap water) application. From 5 nematode trophic groups, 16 genera and 1 order of nematodes were found. In the years 2015 and 2016, the least predatory nematodes (25/136) and the most common plant parasitic nematodes (3012/3657) were identified, respectively. Compared to 2015, the number of omnivorous nematodes decreased in 2016, whereas there was an increase in other nematode groups. According to the result of Simple Correspondence Analysis Method, it was determined that generally there were significant connections between the applications in question and the considered properties and nematode trophic groups.

Key Words: Agroecosystem, Nematodes, Wood vinegar, Pesticides, Soil

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Effects of Wood Vinegar and Pesticides on Weeds in Wheat Agroecosystems

İbrahim, KOÇ[1*], Erdal Necip YARDIM[2]

[1]Bitlis Eren Univ., Faculty of Engineering and Architecture, Dept. of Env. Engineering, Bitlis-TURKEY
[2]Bitlis Eren University Rectorship, Bitlis-TURKEY
*Corresponding author: ibrahimkoc47@gmail.com

Abstract

This study was conducted to determine effects of pesticides and wood vinegar on weeds in a comparative manner in wheat agroecosystem. The research was constituted of field experiments in 2014-2015 and 2015-2016 production seasons in Muş province's ecological conditions. The field experiment was done in wheat field according to Randomized Block Design in 4 repetition. The treatments; It was conducted as a pesticide / wood vinegar dosage of 0.5% - 1% - 2% - 3% - 4% with 5% mL and control (tap water) application. In the study area were found a total 16 at the level family weeds, in wich including 4 genus and 32 species. As a result of the Repeated Measures Analysis, it was found that the effect of the applications on the weed dry weight was changed according to years (P = 0.002). On average, at least in pesticide (33.85 g) and the most 3% mL WV (139.66 g) was found. According to the result of Simple Correspondence Analysis Method, it was determined that generally there were significant connections between the applications in with weed types. As a result; It has been found that the pesticides used are more effective according to the wood vinegar (derived from Broyler chicken manure).

Key Words: Agroecosystem, Pesticides, Weeds, Wheat, Wood vinegar

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Research of Effects of Wood Vinegar and Pesticides on Some Parameters in Wheat Agroecosystems

İbrahim KOÇ[1*], Erdal Necip YARDIM[2]

[1]Bitlis Eren Univ., Faculty of Engineering and Architecture, Dept. of Env. Engineering, Bitlis-TURKEY
[2]Bitlis Eren University Rectorship, Bitlis-TURKEY
*Corresponding author: ibrahimkoc47@gmail.com

Abstract

The purpose of this study, to determine of the effects of pesticides and wood vinegar in a comparative manner on microorganisms like fungi and bacteria, soil pH and EC values in wheat agroecosystem. The study was constituted of field experiments in 2014-2015 and 2015-2016 production seasons in Muş province's ecological conditions. The field study was done in wheat field according to Randomized Block Design in 4 repetition. The treatments; It was conducted as a pesticide application / wood vinegar application dosage of 0.5% - 1% - 2% - 3% - 4% with 5% mL and control application (tap water). It was seen in the result of Repeated Measures Analysis of Variance which was done to study the effects of used pesticides and wood vinegar on bacteria and microfungi numbers in soil and on soil pH and EC parameters that different applications did not affect those properties in statistically significant levels ($P>0.436$). As a result; in order to better understand the effects of the wood vinegar used in this study, it is recommended to experiment with stable conditions and different doses and frequency.

Key Words: Agroecosystem, Microorganisms, pH, Wood vinegar, Pesticides

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Molecular Characterzation of Coat Protein Gene of Two *Watermelon mosaic potyvirus* Isolates Infecting Muskmelon at Van Province (Turkey)

Mustafa USTA[1*], Abdullah GÜLLER[1], H. Murat SİPAHİOĞLU[2]

[1]The University of Yuzuncu Yil, Faculty of Agriculture, Department of Plant Protection, Van-TURKEY
[2]The University of Inonu, Faculty of Agriculture, Department of Plant Protection, Malatya-TURKEY
*Corresponding author: mustafausta@yyu.edu.tr

Abstract

Watermelon mosaic virus (WMV) is a Potyvirus with a worldwide distribution. WMV causes serious economic losses in many cucurbits in Turkey. To study relative incidence and molecular variability of WMV, a total of 100 leaf samples of muskmelon exhibiting typical viral symptom and without symptom were collected from different muskmelon fields of Van province in August 2016 and were screened by RT-PCR. Two WMV isolates (WMV-Alakoy-1 and 2 (WMV-A1 and WMV-A2)) were isolated from a naturally infected muskmelon (Cucumis melo L.) plants by mechanical inoculation.

Out of 100 tested samples, 5 were reacted positive resulting an expected 822 bp DNA fragments of partial coat protein gene of WMV. WMV-A1 and WMV-A2 were further cloned into a TA cloning vector and their complete nucleotide sequences and deduced amino acids were determined. The partial CP gene of WMV-1 and 2 isolates contained 279 amino acid residues. The sequences of WMV-A1 (Acces no. MG952634) and WMV-A2 (Acces no. MG952635) were aligned with other 22 world isolates retrieved from GenBank.

Based on the nucleotide sequences, a high degree of homology (99%) was detected between two Turkish WMV isolates. However, the nucleotide sequences of WMV-A1 and A2 isolates were exhibited a high degree of variance when comparing with 22 world isolates ranging from 87 to 91%. Based on the phylogenetic tree created by using the nucleotide sequences of 22 world isolates, the both Turkish WMV isolates were best clustered with the isolates of Pakistan (AB218280 and AB127934). By this study, WMV has been reported for the first time in muskmelon in Van province (Turkey).

Key Words: Watermelon mosaic virus, molecular characterization, Van, survey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

An Evaluation on the Chrysididae Fauna of Diyarbakır Province

Emin KAPLAN[1*], Abdullah MART[2], Yunus ESEN[3], Erol YILDIRIM[4]

[1]Bingol University Faculty of Agriculture Department of Plant Protection, Bingol-TURKEY
[2]Osmaniye Korkut Ata University Faculty of Arts and Sciences Department of Biology, Osmaniye-TURKEY
[3]Bingol University Solhan Health Services Vocational School Department, Bingol-TURKEY
[4]Atatürk University Faculty of Agriculture Department of Plant Protection, Erzurum-TURKEY
*Corresponding author: eminkaplan021@gmail.com

Abstract

There are harmful insects with a limiting effect on yield and quality in agricultural production. Because of the chemical fighting with these harmful insects in our country, we are known to use a lot of chemical pesticides all over the world. In recent years, however, the use of chemical pesticides in agricultural areas has become debatable due to problems with human and environmental health due to chemical pesticides and the desire of people to obtain reliable food. For this reason, the biological fighting which beneficial organisms used has gained importance in agricultural areas instead of chemical pesticides used against harmful insects. Because according to the feeding style biological control agents are called predators, parasites, parasitoids. As a matter of fact, species such as *Cryptolaemus montrouzieri* and *Chrysoperla carnea* have been used as biological fighting agents for many years due to their predator properties. However, recent studies suggest that individuals belonging to the family Chrysididae may be used as biological control agents due to their parasitoid or kleptoparasitic properties. But, biodiversity and availability of beneficial organisms are of great importance in terms of biological fighting. In this research, it is purposed to determine that presence densities and biodiversity of the specimens belonging to of Chrysididae family in Diyarbakır. Thus, in this research carried out in 2016-2017, it were identified to 10 genus in 3 tribes belonging to 3 subfamilies. It was designated Chrysis the highest population density and Hedhemrum with the least population density.

Key Words: Chrysididae, fauna, pesticide, Diyarbakır

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Studies on the Species of Coccinellidae (Coleoptera: Insecta) Family Determined in Cities of Bingol and Mus

Emin KAPLAN[1*], Abdullah MART[2], Derya ŞENAL[3]

[1]Bingöl University, Faculty of Agriculture, Department of Plant Protection, Bingol-TURKEY
[2]Osmani Korkut Ata University, Faculty of Arts and Sciences Department of Biology, Osmaniye-TURKEY
[3]Bilecik Seyh Edebali Univ., Faculty of Agricult. and Natural Sci., Dept .of Plant Protection, Bilecik-TURKEY
*Corresponding author: eminkaplan021@gmail.com

Abstract

In this research carried out in 2016-2017 with the aim of determining Coccinellidae fauna in provinces of Bingöl and Mus, it were identified 6 tribes, 10 genera and 11 species belonging to 3 subfamilies. In the research, it were detected species of *Hippodamia (Adonia) variegata*, *Exochomus nigromaculatus*, *Oenopia (Synharmonia) conglobata*, *Psyllobora vigintidopunctata*, *Coccinella septempunctata*, *Chiloccorus bipustulatus*, *Platynaspis luteorubra*, *Propylaea quatuordecimpunctata*, *Scymnus mimulus Hyperaspis reppensis and Coccinula quatuordecimpustulata*. It are understood *H. variegata* with 45.00%, *C. quatuordecimpunctata* with 13.33%, *P. vigintiduopunctata* with 10.00% had the highest population density determined among species in Bingol and Mus Province.

Key Words: Coccinellidae, Fauna, Bingol, Mus

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Distribution and Population Development of *Syringopais temperatella* (Lepidoptera: Scythrididae) in Southeast of Anatolia, Turkey

Çetin MUTLU[1*], Mehmet DUMAN[2]

[1]Harran University Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
[2]Diyarbakır Plant Protection Research Institute, Diyarbakır-TURKEY
*Corresponding author: cetinmutlu21@hotmail.com

Abstract

Wheat is the first plant in terms of cultivation and production among cultivated plants used in human nutrition. One of the most important pests limiting wheat production is the cereal leaf miner. This study was carried out in 2016-2017 with the aim of determining the areas of distribution and the population development in cereals fields of Diyarbakır and Mardin. Starting from early spring in the wheat field selected in both provinces, one leaf per week samples and population development were followed.

As a result of the surveys carried out in the field, Diyarbakir Hazro county Sarıçanak and Agarti villages, Silvan Yayıklı village; Mardin Derik Hisaraltı, Artuklu Karademir, Nusaybin county Tepeüstü, Topaçlı and Eskihisar villages that it has been determined that it has spread to the grain areas of the villagers. In Diyarbakir Hazro county Sarıçanak village have been on 28.4.2017 with an average of 0.92 larvae / leaf density on the wheat field and It was determined that the density of populations reached to the highest level on 21.4.2017 with an average of 0.95 larvae / leaf in the wheat field of the Karademir Village of Mardin Artuklu Village. As a result, the population of the cereal leaf miner has increased in the wheat areas of the region; it has been determined that the cereal leaf miner's larvae usually start to appear on wheat leaves from the first week of March due to climate conditions. it has been determined that the region has distribution in wheat fields and that it has to be cautious.

Key Words: Cereal leaf miner, *Syringopais temperatella*, wheat, population, distribution area

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Species of Chrysomelidae and Curculionidae at the Paddy Cultivated Areas in Karacadağ Zone in Southeast Anatolia Region, Turkey

Çetin MUTLU[1*], Mehmet DUMAN[2]

[1]Harran University Agricultural Faculty, Department of Plant Protection, Şanlıurfa/TURKEY
[2]Diyarbakır Plant Protection Research Institute, Diyarbakır/TURKEY
*Corresponding author: cetinmutlu21@hotmail.com

Abstract

Paddy is the main food source of more than half of the people in the world and the Karacadağ's paddy is an important product for the region. This study was carried out to determine the species of Chrysomelidae and Curculionidae found in paddy cultivated areas in Diyarbakir (Ergani, Cermik and Hazro), Şanlıurfa (Siverek) in the borders of Karacadağ. The samples were started in May and continued until the end of October when the paddy harvest was made. Samples were made with atrap and D-vac instruments, 3-minute with D-vac instrument and 20 times with atrap were collected insects in the paddy field.
As a result of field studies carried out in 2010-2012, 8 species of Chrysomelidae family; *Neocrepidodera subferruginea*, *Chaetocnema conducta* (Motschulsky, 1838), *Chaetocnema coyei* (Allard, 1863), *Epitrix hirtipennis* (Melsheimer, 1847), *Longitarsus* sp., *Chaetocnema tibialis* Illiger, 1807, *Chaetocnema arenacea* (Allard 1860) ve *Chaetocnema schefferi* and 7 species from the Curculionidae family; *Lixus bardanae* F., *Lixus albomarginatus* Boheman, *Sitona macularius* Marsham, *Ceratapion basicorne* Illiger, *Nanophyes marmoratus* Goeze, *Nanophyes brevis* Boheman ve *Tychius picirostris* F. were identified. *Chaetocnema arenacea* was the most common species in the Chrysomelidae family, whereas *Lixus* spp., *Nanophyes brevis* was the family of Curculionidae.

Key Words: Rice, Pest, Chrysomelidae, Curculionidae (Coleoptera), Karacadağ

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Cold Storage Effect on Mass Rearing of Natural Enemies for Biological Control

Mehmet MAMAY[1], İlyas RAT[2*], Çetin MUTLU[1], Sultan ÇOBAN[1]

[1]Harran University Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
[2]Provincial Directorate of Food, Agriculture and Livestock, Şanlıurfa-TURKEY
*Corresponding author: ilyasrat@hotmail.com

Abstract

Cold storage in the biological control of the agricultural pests is the keeping of beneficial insects or their hosts in certain biological periods at certain temperatures and for a certain time. It is a method applied to keep the biological control agent at the desired amount at the desired time or to transport it appropriately where it is to be released. In general, cold storage is to facilitate the transportation of beneficial insects to the consumer, to plan the release work at an appropriate time, to provide efficiency and flexibility in mass production and to prepare standard progeny suitable for long-term ecological, physiological and genetic studies.

When a beneficial insect species is not used in biological control programs in mass production applications, production can be stopped and storage can be carried out at low temperatures to reduce costs. In addition, cold storage of produced beneficial insects during transport to the areas to be released is effective in reducing the probable losses. Cold storage also provides a variety of benefits in mass rearing not only for beneficial insects but also for their laboratory hosts. It is possible to use more than necessary of the laboratory hosts produced via cold storage later when needed. Another area where cold storage is highlighted is sterile insect-release programs as an alternative pest management method. Thanks to the cold storage, it is easy to accumulate and store the sterile insects and the efficiency of the pest

There is long and short-term cold storage according to species and period of insects to be stored in cold, storage temperature and storage duration. Also, storage in and out of the host nourished and unfed is variable depending on the species. Cold storage of insects varies between -20 and +15 ºC depending on insect species.

In order to achieve success in cold storage, the characteristics of insects such as emerging larvae and adult, egg production, fertility, breeding, distribution and flight ability should not be affected negatively. As a result, storage at low temperatures is a method bringing success and achieving economic recovery in biological control applications.

Key Words: Cold storage, IPM, Diapause, Quiescence, Dormancy

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Biological Parameters of *Aphis gossypii* Glover (Hemiptera: Aphididae) on Five Different Melon Cultivars

Serdal BOZKURT[1*], Evin POLAT AKKÖPRÜ[1]

[1]University of Yüzüncü Yıl, Faculty of Agriculture, Department of Plant Protection, Van-TURKEY
*Corresponding author: evinpolat@yyu.edu.tr

Abstract

In this study, some biological parameters of *Aphis gossypii* Glover (Hemiptera: Aphididae) on five different melon (*Cucumis melo* L.) cultivars (Balin, Çıtırex, 221 F1, Gediz, Yusufbey), which are commonly grown in Turkey, was investigated in laboratory experiments at 25± 1 0C, 65±5% RH, and a photoperiod of 16:8 (L:D) h (5.000 lux). Life table parameters were estimated according to age-stage, two-sex life table method. Variances and standart errors of population parameters were obtained according to Bootstrap method by using TWOSEX-MS Chart software. In conclusion; some biological parameters of *A. gossypii* were determined in relation to melon cultivars, and it was found that cv. Gediz was the most convenient Melon cultivar in terms of the life cycle of *A. gossypii*. Results acquired might be used in pest management program that will be prepared for this aphid.

Key Words: Life table, Melon aphid, Population parameters, *Cucumis melo*

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A New Predator of *Xanthogaleruca luteola* (Müller) (Coleoptera: Chrysomelidae): *Oenopia conglobata* (Linnaeus, 1758) (Coleoptera: Coccinellidae)

Celalettin GÖZÜAÇIK[1*], Pınar SOYCAN[2], Levent GÜLTEKİN[3]

[1]Igdir University, Faculty of Agriculture, Department of Plant Protection, Igdir, Turkey
[2]Republic of Turkey Ministry of Food, Agriculture and Livestock, Kocaeli, Turkey
[3]Atatürk University, Faculty of Agriculture, Department of Plant Protection, Erzurum, Turkey
*Corresponding author: cgozuacik46@gmail.com

Abstract

The elm (*Ulmus* spp.) is grown both as natural and ornamental plant in our country and in many parts of the world. This tree has many pests and one of the most important pests is the elm leaf beetle, *Xanthogaleruca luteola* (Müller, 1766) (Coleoptera, Chrysomelidae). This study was carried out under the conditions of nature and laboratory in 2014 and 2015. During nature studies were detected that adults of *Oenopia conglobata* (Linnaeus, 1758) (Coleoptera: Coccinellidae) feed on egg clusters of *X. luteola*. Laboratory experiments were carried out in a incubator at 25±1 °C, 65±5 % RH and 16:8 (L:D) h photoperiod. Daily consumption of prey of *O. conglobata* adult were determined as 14.7 fresh eggs. Up to now, *O. conglobata*'s preys has been known to be afit, psillid, diaspid, coccid and lepidoptera. With this study, it was the first time that the *O. conglobata* adult was recorded as predator on eggs of *X. luteola*.

Key Words: The elm, *Xanthogaleruca luteola*, *Oenopia conglobata*, predator, new record

Acknowledgements: This study is a part of the graduate thesis which is accepted by Igdir University Institute of Science and Technology.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Late Fall Harvest and Winter Grazing on Egg Populations of *Hypera postica* (Coleoptera: Curculionidae)

Celalettin GÖZÜAÇIK[1*], Yüksel SUBAŞI[1]

[1]Department of Plant Protection, Faculty of Agriculture, Iğdır University, Iğdır-TURKEY
*Corresponding author: cgozuacik46@gmail.com

Abstract

The alfalafa weewil, *Hypera postica* (Gyllenhal, 1813) (Coleoptera: Curculionidae) is one of the most important pests of alfalfa (*Medicago sativa* L.) plant. The bug lays eggs within the stem of alfalfa plant during fall and spring. The hatching larvaes in the spring feed with alfalfa and cause damage. The damage fortifies with the larvaes emerging during the spring. This study aims to determine what rate of harvesting or mowing height in fall decrease egg populations of *H. postica*. The studies were conducted on alfalfa fields and laboratory during November, 2017 in Iğdır province. Hundred pieces were cut as a single branch from the bottom side of the plants from ten alfalfa fields and were brought to the laboratory. The height of laying eggs and the number of eggs were determined according to the height of the plant. For this aim, measurement scales of 0-10, 11-20, 21-30, 31-40, 41-50 and 50cm> were constituted and evaluations were made based on this scale. As a result, distribution percent of eggs within the stem of the plants were defined as 5.9% (n=394), 16.1% (n=1082), 12.4% (n=831), 18.2% (n=1215), 19.8% (n=1320) and 27.6% (n=1824). Egg numbers increased from the plant bottom towards the neb. The producers should consider this situation during harvest or grazing performed in the fall.

Key Words: *Hypera postica*, Alfalfa, Egg population, mowing height, Iğdır

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Resistance to Fusarium Root-Rot with Tomato Yellow Leaf Curl Virus and Some Fruit Quality Characteristics in Tomato Lines

Ayşegül ÇOLAK ATEŞ[1*], Hakan FİDAN[2], Mehmet KARACAOĞLU[3], H. Yıldız DAŞGAN[4]

[1]Biological Control Research Institute, Department of Phytopatholoy, Adana-TURKEY
[2]Akdeniz University Agricultural Faculty, Department of Plant Protection, Antalya-TURKEY
[3]İnönü University Agricultural Faculty, Department of Plant Protection, Malatya-TURKEY
[4]Çukurova Univesity Agricultural Faculty, Department of Horticulture, Adana-TURKEY
*Corresponding author: aysegulcolak@hotmail.com

Abstract

*Fusarium oxyspo*rum f. sp. *radicis-lycopersici* (FORL) causes Fusarim root-rot diseases, is the most important diseases of tomato grown under protected conditions. The FORL and *Tomato yellow leaf curling virus* (TYLCV) result low yield and poor quality fruits, cause important economic losses in the region. In this study, previously developed molecular markers for FORL and TYLCV were used to resistance disease in 418 tomato lines and 7 tomato line (B-26, B-40, B-178, A-31, A-41, A-48, A-66) were identified as the result of molecular studies in both disease targeted resistance gene sources.

As a result of molecular and classical tests, the yield and weight of fruit, fruit width, fruit length, pH, vitamin C, titratable acidity, soluble solids content, EC criterias of 7 tomato line of candidates confirmed to be resistant to both diseases were determined in greenhouse. The greenhouse studies, the highest yield was obtained from 7304.7 kg/da with the B-26 and the lowest yield was obtained from 2754.4 kg/da with the A-48 line. The amount of soluble solids content, which is an important quality criterion in tomato juice, was obtained from the highest B-178 (5,4%), and this followed by B-40 (5,17%), B-26 (5,06%),A-48 (4,7%), A-31 (4,4%), A-66 (4,1%) ve A-41 (3,4%), respectively. According the study pH ranged between 5,2 and 4,5; titratable acidity 0,46 and 0,24%; EC 4,6 and 3,9 ms/cm; vitamin C 27,83 and 22,54 mg/100mg.

Their agronomic analyses results with resistance to fungal and viral diseases will be greatly contributed to the rapid commercialization and marketing introduction by the line owner organizations. The determinations of the new kind of resistant lines which are resistant to both diseases have high market value for future.

Key Words: Tomato, *Fusarium oxysporum* f. sp. *radicis-lycopersici*, *Tomato Yellows Leaf Curl Virus*, Marker Assisted Selection, yield

Acknowledgements: In this study, the financial support of The Scientific and Technological Research Council of Turkey (TUBITAK), project no: 213 O 103, is gratefully acknowledged.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Current Situation of Allelopathy in Integrated Weed Management

Reyyan YERGİN ÖZKAN[1*]

[1]Van Yuzuncu Yil University, Faculty of Agriculture, Plant Protection Dept, Van-TURKEY
*Corresponding author: reyyanyergin@yyu.edu.tr

Abstract

It is known that there is a loss of 35-40% if plant protection measures are not taken in product cultivation in the world. The losses caused by weeds constitutes 1/3 (~10%) of this ratio. Today, weeds are often controlled by chemical management. Increasing use of synthetic chemicals has caused serious human and environmental health and damaged the natural balance. These problems have led to the development of alternative methods of management for sustainable agriculture. Allelopathy refers to chemical effect of a plant direct or indirect on germination, growth or development of neighboring plants. Allelopathy can be considered as a component of biological control that reduces the development of other plants. Accordingly, allelopathy can be used to solve many important problems such as environmental pollution and herbicide resistance development. Many studies have been done to investigate the importance of allelopathy in weed management. Those studies especially include rice, wheat, rye, barley, and oat species. As well as the number of studies on using as bio-herbicides of essential oils is increasing day by day. The aim of this review is recent update regarding the practical application of allelopathy for weed control in agricultural systems.

Key Words: Allelopathy, Weed, Management

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation on Mass-Trapping of *Archips rosanus* L. (Lepidoptera: Tortricidae), Pest of Cherry Trees in Mardin And Elaziğ Provinces

Mehmet KAPLAN[1*], Murat GÜLMEZ[1], Tarkan AYAZ[2], İnanç ÖZGEN[3]

[1] Plant Protection Institute, Diyarbakır/TURKEY
[2]Directorate of Agricultural Quarantine, Şırnak/TURKEY
[3]Fırat University, Bioengineering Department, Elazığ/TURKEY
*Corresponding author: mehmetkaplan1971@hotmail.com

Abstract

Archips rosanus L (Lepidoptera: Tortricidae), which is found on cherry trees has became the main pest in cherry orchards in Mardin and Elazığ province lately. Larvae of *A. rosanus* damages the cherry trees by feeding on buds, flowers, leaves and fruits. The study was carried out to investigate the effectiveness of mass trapping on the control of the pest in cherry orchards in 2017 year. For this purpose, trap effects, trap parametres and mass trapping studies were performed by using different doses of wine wine bait traps.
According to the results, the effects of 10% dozen of wine bait traps were found to be more effecttive than %1, %3, anda %5 wine bait traps with by means of adult individulas catched. With the trap parameter studies, it is shown that must bait traps for five trees could be used in mass trapping. The difference between damaged bouquet and fruit and the control was found to be important ($p<0.01$) in the trials performed by mass trapping with must bait traps when tested with the chi square test. It is shown that this mass trapping method can be used in the control of the pest succesfully and according to the study results.

Key Words: Mardin, Elazıg, Cherry, *Archips rosanus*, Mass trapping

Acknowledgements: This study was funded by General Directorate of Agricultural Research and Policies (TAGEM project no: BS-14/08-01/01-09)

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Parasitic Microfungi on Cultivated Plants of Aladağlar and Bolkar Mountains

Şanlı KABAKTEPE[1*], Onur GÖKÇEK[1]

[1]Inonu University, Battalgazi Vocat Sch, TR-44210 Battalgazi, Malatya-TURKEY
*Corresponding author: sanli.kabaktepe@inonu.edu.tr

Abstract

Many researchs have been carried out on vascular plants, algae and macrofungi from Turkey. However, research on microfungi is very limited in our country. The studies on microfungi are usually made in psychopathological Institutes and especially parasites causing diseases on crops plants. But studies on microfungi grown on natural plants of Turkey were neglected by micologist until recent years. So our country's microfungi flora has not been worked out yet. Whereas most European countries were uncovered mikrofungus flora. Therefore, it is an obligation to do the researches about identifying the species of microfungi and spreading areas. Aladağlar and Bolkar mountains (Mersin, Adana, Niğde, Kayseri, Konya, Karaman) are rich in vegetation, vascular plants flora and number of endemic species. The number of microfungi species increases in proportion to the number of vasculer plant species. In this research, microfungi species grown on cultivated plants in Aladağlar and Bolkar mountain provinces were studied. Field studies were made periodically between in 2013-2016 years. In this period, 553 vascular plant specimens were collected from the study area. After the naming of the specimens, 19 genera and 30 host species belonging to 11 families were determined. With the naming the microfungi grown on the host specimens, 30 genera and 45 microfungi species were established. Distribution of the microfungi species to the divisions are as follows: Ascomycota 24, Basidiomycota 21. With respect to number of species they contain, the larger families in Aladağlar and Bolkar mountains were Pucciniaceae (8 species), Erysiphaceae (6 species). The remaining 31 species is belonging to other families. By this research, is made contribution to the mycobita of Turkey.

Key Words: Ascomycota, Basidiomycota, Host, Parasitic microfungi

Acknowledgements: We are indebted to TUBİTAK (Project no. 113Z093) for its financial support.

Two New Rust Fungi Record for Turkey

Şanlı KABAKTEPE[1*], Onur GÖKÇEK[1]

[1]Inonu University, Battalgazi Vocat Sch, TR-44210 Battalgazi, Malatya-TURKEY
*Corresponding author: sanli.kabaktepe@inonu.edu.tr

Abstract

In this study, *Puccinia istriaca* Syd. & P. Syd. (*Pucciniaceae*, Basidiomycota) on *Teucrium polium* L. (*Lamiaceae*) and *Puccinia leveillei* Mont. (Pucciniaceae, Basidiomycota) on *Geranium tuberosum* L. (*Geraniaceae*) is reported for the first time from Turkey. A short description, host, distribution and photographs related to macro and micromorphologies of the species are provided and discussed briefly.

Key Words: New record, Pucciniales, Basidiomycota, Turkey.

Acknowledgements: We are indebted to TUBİTAK (Project no. 113Z093) for its financial support.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Harmful Species of Tortricidae Family in the Cherry Orchards of Mardin and Elazığ Provinces

Mehmet KAPLAN[1*], M. Sabri MECİN[1], Mustafa ÖZDEMİR[2], Selime ÖLMEZ BAYHAN[3]

[1]Plant Protection Institute, Diyarbakır-TURKEY
[2]Directorate of Plant Protection Central Research Institute, Ankara-TURKEY
[3]Dicle University Agricultural Faculty, Department of Plant Protection, Diyarbakır-TURKEY
*Corresponding author: mehmetkaplan1971@hotmail.com

Abstract

This study was carried out to determine the harmful species of the Tortricidae family in the cherry orchards in Mardin and Elazig provinces in 2014-2017. Species in cherry orchards were identified using pheromone traps weekly throughout the vegetative period.
As a result of the surveys, *Archips ros*anus L. *Hedya nubiferana*, *Haworth* and *Aleimma loeflingianum* L. which are belonging to Tortricidae family were determined on *Prunus avium* L. In these species, *A. rosanus* was found to be significant in terms of prevalence, density, and harmfulness in cherry gardens compared to other species, and adult population development of this species was followed by using the pheromone traps. It was determined that adult individuals have been seen in nature since the second and third weeks of May with varying years, and the highest populations have been found in the second or third week of June and the species were found lastly at the end of July, in nature in the pheromone traps. It has also been determined that adult flight period of *A. rosana* lasted between 64 and 71 days.

Key Words: Mardin, Elazıg, Cherry, Tortricidae, Pheromon traps

Acknowledgements: This study was funded by General Directorate of Agricultural Research and Policies (TAGEM project no: BS-14/08-01/01-09).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

An Evaluation on the Staphylinidae (Insecta: Coleoptera) Fauna of Şanlıurfa Province in Turkey

İnanç ÖZGEN[1*], Sinan ANLAŞ[2]

[1]Fırat University, Engineering Faculty, Bioengineering Department, Elazığ-TURKEY
[2]Manisa Celal Bayar University, Alaşehir Vocational School, TR-45400, Alaşehir, Manisa-TURKEY
*Corresponding author: inancozgen@gmail.com.

Abstract

The Staphylinidae is the largest family of the Coleoptera order. The family comprising more than 60.000 species belonging to 33 subfamilies from all zoogeographical regions in the world. Almost 1900 species are known from Turkey and about half of them are endemics. Staphylinidae species can be found in almost all habitats, but generally in wet places. Staphylinids occur most often under Stones or bark, in decaying matter, on flowers, in fungi and leaf litter, and in the nests of ants. As most of staphylinid species are predators, they are known to be agriculturally useful. for example; Most Tachyporinae are facultative predators of the small invertebrates in the garden or in agriculture, feeding especially aphids. In additionally; Most Aleocharinae are predators of the some Diptera (*Delia* spp) ordo species.
Compared to other provinces of Turkey, the staphylinid fauna of Şanlıurfa has been poorly studied. After a review of the literature on the Staphylinidae (Insecta: Coleoptera) fauna of Şanlıurfa province in Turkey, it was found that 28 species in 19 genera belonging to seven subfamilies which are connected with Staphylinidae family have been reported. Thus, the current knowledge of the staphylinid fauna of Turkey apparently must be considered rather incomplete. In addition, agricultural importances of known staphylinid species in Şanlıurfa are discussed.

Key Words: Coleoptera, Staphylinidae, fauna, Şanlıurfa, agricultural importance

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The First Record on Predatory Properties of *Denops albofasciatus* (Charpentier, 1875) (Coleoptera: Cleridae) on *Bostrichus capucinus* (Linnaeus, 1758) (Coleoptera: Bostrichidae)

İnanç ÖZGEN[1*], Levent EFİL[2], Celalettin GÖZÜAÇIK[3], Mehmet Zeki EFE[4]

[1]Fırat University, Engineering Faculty, Bioengineering Department, Elazığ-TURKEY
[2]Çanakkale 18 March University, Agricultural Faculty, Plant Protection Department, Çanakkale-TURKEY
[3]Iğdır University, Agricultural Faculty, Plant Protection Department, Iğdır-TURKEY
[4] Republic of Turkey Ministry of Food, Agriculture and Livestock, Eğil-Diyarbakır-TURKEY
*Corresponding author: inancozgen@gmail.com.

Abstract

This study has been carried out of between 2016 to 2017 years in Diyarbakır and Elazığ provinces. This study's field studies was conducted in Diyarbakir (Eğil) province, but; laboratory studies were carried out in Elazığ province. The *Bostrichus capucinus* species was secondary xyllofag pest on fig plants in Eğil province (Diyarbakır) of Turkey. In this study, The *Denops albofasciatus* (Coleoptera: Cleridae) was determined to be predator on pupa and larvae of *Bostrichus capucinus* (Linnaeus, 1758). *D. albofasciatus* is known to feed on many species of Bostichidae as a predator in other countryies. But; This record is the first record of a predator behavior on *D. albofasciatus* on *B. capucinus*. In our country; It was known to be predator on *Phloetribus scarabaeoides* Bern. (Coleoptera: Scolytidae). This record was second record with interest *D. albofasciatus*'s predatory properties in Turkey. In additionally; it was reported to be a predator in the olive orchards in Turkey. *D. albofasciatus* species has exited inside xyllemic galeries between 15.03.2017 to 30.03.2017 dates. But; *B. capucinus* has emerged from these galleries between 15.03.2017 and 28.04.2017. Approximately; The natural enemy and pest are found to be on the same date in nature. Also; The great majority of *D. albofasciatus* individuals have emerged from the gallery years of culture. But; some of the *D. albofasciatus* individuals have emerged from the galleries which cultivated the following year of the years of culture. In other words, the predator could stay in the galleries for another year. This datas were important that biological control and IPM studies on Fig plants.

Key Words: Ficus carica, *Bostrichus capucinus*, *Denops albofasciatus*, Predation, First record

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Beneficial and Pest Insect Fauna in Student Farm of Harran University Agricultural Faculty

Mehmet MAMAY[1], İnanç ÖZGEN[2], Bedriye DEMİRER[1*], Havva GÜMÜŞ[3]

[1]Harran University Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
[2]The University of Fırat, Faculty of Engineering, Department of Biosystem Engineering, Elazığ-TURKEY
[3]Harran Univ., Graduate School of Natural and Applied Sciences, Dept. of Plant Protection, Şanlıurfa-TURKEY
*Corresponding author: mehmetmamay@hotmail.com

Abstract

Agricultural faculty students in Turkey have often complained from inadequate education and training that consists of theoretical and fewer application areas. Harran University Agricultural Faculty allocated 70,000 m2 of land to its students as a student practice farm in 2017 as an example to all other agricultural faculties in Turkey. Students cultivated cucumber, melon, watermelon, sesame, soya bean and corn as polyculture agriculture in this area in 2017.

This study aimed to determine beneficial and harmful insect fauna in cucumber, melon, watermelon and sesame fields in Harran University Faculty of Agriculture Student Practice Farm. For this purpose, sweep net, leaf picking and visual inspection methods were used. In the study, five leaves were taken per plant (in total fifty leaves and ten plants selected) which represent each crop field. Also, all the vegetative parts of ten different plants were visually checked and sweep net was shaken fifty times in each crop.

As a result of the study, Green Lacewing *Chrysopa carnea* Stephens (Neuroptera: Chrysopidae), The Seven-Spot Ladybird *Coccinella septempunctata* Linnaeus 1758, Poplar Ladybird *Oenopia conglobata* (Linnaeus, 1758), Adonis Ladybird or The Variegated Ladybug *Hippodamia variegata* Goeze 1777, *Adalia bipunctata* (Linnaeus, 1758) (Coleoptera: Coccinellidae), *Orius laevigatus* (Fieber, 1860) (Hemiptera: Anthocoridae), *Nabis* spp. (Hemiptera: Nabidae) and *Geocoris* spp. (Hemiptera: Lygaeidae) determined as beneficial insects.

As harmful species in the study; Onion Thrips or Tobacco Thrips *Thrips tabaci* Lindeman 1889, Aphids *Aphis* spp. (Hemiptera: Aphididae), Two-Spotted Spider Mite or Red Spider Mite *Tetranychus urticae* Koch. (Arachnida: Acari: Tetranychidae) and Tobacco Whitefly *Bemisia tabaci* Gennadius (Hemiptera: Aleyrodidae) were determined in student farm of Harran University Agricultural Faculty.

Among the useful species, *C. carnea* and *H. variegata* have been widely found as natural enemies. As agricultural pests, *Aphis* spp. was more common in the melon area while *T. tabaci* had a higher population in cucumber plants. As a result of the study, it was determined that beneficial insect biodiversity in the student farm has resulted in high populations while pest populations weren't exceeded the economic damage level. It was thought that this result was because of lack pesticide application and the natural equilibrium wasn't deteriorated.

Key Words: Beneficial insect, Agricultural Pests, Harran University Agricultural Faculty, Biodiversity

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fruit trees: Certification why it's important?

Mohammad ALHASAN[1*], Eray ŞİMŞEK[1], Havva GÜMÜŞ[1], Mehmet Ertuğrul GÜLDÜR[1]

[1]Harran University, Faculty of Agriculture, Department of Plant Protection, Şanliurfa-TURKEY
*Corresponding author: m-alhasan09@hotmail.com

Abstract

Fruit is source of vitamins and antioxidants which it's important for human health, planting virus free fruit trees important to get health efficient mother trees for the future propagation of rootstocks and scion cultivars. It was shown that virus-free trees showed better compatibility, growth, yield, fruit quality than infected once. Also they proved to be more tolerance towards stress and replant problems. Therefore, it was ensured that mother plants become virus-free. Production of virus-tested materials of vegetative propagated crops through national certification schemes has been implemented in many countries for more than 60 years. The two most important elements of certification schemes are the use of sensitive, reliable and rapid detection techniques to check the health status of the material produced and effective and simple sanitation procedures for the elimination of viruses if present in candidate materials before in enters the scheme.

Key Words: Fruit, certification, virus

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Biochemical Changes in Phytoplasma-Infected Pistachio (*Pistacia vera* L.) Leaves

Havva GÜMÜŞ[1], Murat DİKİLİTAŞ[1*], Eray ŞİMŞEK[1], Sema KARAKAŞ[2], Behçet Kemal ÇAĞLAR[3], Mehmet Ertuğrul GÜLDÜR[1]

[1]Harran University Faculty of Agriculture, Department of Plant Protection,
[2]Harran University Faculty of Agriculture, Department of Soil Science and Plant Nutrition,
[3]Çukurova University Faculty of Agriculture, Department of Plant Protection
*Corresponding author: m.dikilitas@harran.edu.tr

Abstract

Pistachio (*Pistacia vera* L.) is one of the most important crop for Şanlıurfa province. In previous studies, phytoplasma infections resulted in yield loss were detected in pistachio tress in Şanlıurfa. Phytoplasmas are phloem inhabiting bacteria affecting too many plant species including many economically important crops. It is important to understand the biochemical relationships between phytoplasmas and pistachio plants in pathogen management. In this study, biochemical responses of pistachio plants naturally infected with Ca. Phytoplasma solani were evaluated. Leaves of phytoplasma-infected pistachio plants showed significantly increased contents of proline and antioxidant enzyme activities (Peroxidase; POX and Catalase; CAT) while protein contents were decreased when compared to those of healthy ones ($P<0.05$). Also total chlorophyll contents were found significantly decreased in phytoplasma-infected pistachio tress ($P<0.05$). The present study showed for the first time the effect of phytoplasma infection resulted in alteration on antioxidant enzymes, proline, protein and chlorophyll contents in leaves of pistachio plants during vegetation.

Key Words: Phytoplasma, Pistachio, Biochemical Changes, Proline, Protein, Chlorophyll

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Biopesticides in Sustainable Agriculture

Havva GÜMÜŞ[1*], Mehmet Ertuğrul GÜLDÜR[1]

[1]Harran University Faculty of Agriculture, Department of Plant Protection, Şanlıurfa-TURKEY
*Corresponding author: gumush199@gmail.com

Abstract

Sustainable agricultural, production of adequate and high quality food at reasonable costs; aims to protect the environment and natural resources by reducing the share of diseases and harms at the time of not harming the crops. For this purpose various chemical pesticides, artificial fertilizers and chemical additives were started to be used in the 20th century. But excessive use of increasing fertilizers and chemical drugs has caused natural balance and deterioration of human health. Due to this concern, the biological struggle, which is an alternative to the chemical struggle, is a solution to these problems and the works carried out in this direction are increasing nowadays. Biopesticides naturally derived from plants, animals, bacteria and some minerals in alternative methods of control are of great help to sustainable agriculture by reducing dependence on chemical drugs in disease, pest and weed control. In addition, biopesticides remove concerns such as pollution from traditional agrochemicals and are naturally susceptible to environmental pollution and can be produced in a sustainable way. In this article, the concepts of biopesticide, alternative struggle methods and biopesticide applications in sustainable agriculture have been extensively evaluated.

Key Words: Sustainable agriculture, alternative control, biopesticide, biopesticide applications

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Identification and Characterization of *Fusarium oxysporum* f.sp. *radicis-cucumerinum* as Causal Agent of Root and Stem Rot Disease of Cucumbers

Esin BASIM[1*], Hüseyin BASIM[2], Derya BAKİ[2]

[1]Akdeniz Univ., Vocational School of Technical Sciences, Organic Agriculture Programme, Antalya-TURKEY
[2]Akdeniz University, Faculty of Agriculture, Department of Plant Protection, Antalya-TURKEY
*Corresponding author: ebasim@yahoo.com

Abstract

In severely affected cucumber plants grown in greenhouses, the symptoms were severe wilting of the above ground parts showing yellowing and drying of the lower leaves. A yellowish brown discoloration of the vascular tissues and pinkish-orange masses of macroconidia and microconidia and/or a cottony-like mycelial growth were observed on the stem surfaces. Rotting of the roots was highly severe on affected cucumber plants. The fungal isolates were obtained by isolations on potato dextrose agar (PDA) medium and water agar from the infected root and crown parts of cucumber plants grown in Antalya. The pathogen was pathogenic on the inoculated healthy cucumber seedlings, and was consistently re-isolated from the diseased plants that satisfy the Koch's postulates. The morphological features of hyphae and spore structures of the fungus were examined by light microscopy. Identifications of the fungal isolates were carried out by PCR using the universal primers, ITS1/ITS4, and specific primers, FocF8/FocR2, which produced fragment size of approximately 560 bp and 108 bp, respectively. The amplified products were sequenced and aligned. Based on 100% ITS nucleotide sequence, the fungus was identified as a *Fusarium oxysporum* species in the GenBank. The morphological characterization and PCR results, the *Fusarium oxysporum* isolates were identified as a *Fusarium oxysporum* f.sp. *radicis-cucumerinum*. All the sequences were used for phylogenetic analysis using maximum likelihood.

Key Words: *Fusarium oxysporum* f.sp. *radicis-cucumerinum*, Root and stem rot disease, Cucumber

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Identification and Characterization of *Alternaria alternata* Causing Leaf Spot Disease of Lettuce in Antalya Province

Esin BASIM[1*], Hüseyin BASIM[2], Ali TURGUT[2]

[1]Akdeniz Univ., Vocational School of Technical Sciences, Organic Agriculture Programme, Antalya-TURKEY
[2]Akdeniz Univ., Faculty of Agriculture, Department of Plant Protection, Antalya-TURKEY
*Corresponding author: ebasim@yahoo.com

Abstract

Lettuce (*Lactuca sativa*) is an economically important vegetable crop in Turkey, with a cultivated area of 22.431 ha and a production of 478.442 tonnes/year. Lettuce production in Antalya province corresponds approximately 13% of Turkey's lettuce production with 30 731 tonnes/year. In 2017, a leaf blight disease of lettuce grown in greenhouse was observed in Antalya. Several fungal isolates collected from the diseased lettuce plants in Antalya province were recovered on potato dextrose agar (PDA) medium and water agar. Morphological characteristics of the isolates were examined by light microscopy. Pathogenicity tests of the putative fungal isolates were conducted on lettuce seedlings to fulfill Koch's postulates. Identifications of fungal isolates were carried out by PCR using the universal primers, ITS1/ITS4, and specific primers, AaltFor/AaltRev and AAF2/AAR3, which produced fragment size of approximately 560 bp, 184 bp and 346 kb, respectively. The amplified products were sequenced and aligned. Based on 100% ITS nucleotide sequences, the fungal isolates were identified as *Alternaria* genus in the GenBank. The pathogenic fungal isolates were identified as *Alternaria alternata* using morphological characterization and PCR results. All ITS sequences of the *Alternaria alternata* isolates were used for phylogenetic analysis using maximum likelihood.

Key Words: *Alternaria alternata*, Lettuce, Leaf spot disease, PCR

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Fungal Pathogens of Strawberry in the Anamur District of Mersin

Esin BASIM[1*], Hüseyin BASIM[2], Derya BAKİ[2]

[1]Akdeniz Univ., Vocational School of Technical Sciences, Organic Agriculture Programme, Antalya-TURKEY
[2]Akdeniz Univ., Faculty of Agriculture, Department of Plant Protection, Antalya-TURKEY
*Corresponding author: ebasim@yahoo.com

Abstract

Strawberry (*Fragaria vesca* L.) is an economically important fruit in Turkey, with a production of 415.150 tonnes/year. Strawberry production in Anamur district corresponds approximately 23% of Turkey's strawberry production with 93.000 tonnes/year. During strawberry cultivation in Anamur, there are many threates with different kinds of fungal pathogens. Based on surveys to strawberry-grown areas of Anamur district in 2017, leaf spots, wilting and fruit rot symptoms have been observed on the leaves, roots and fruits of strawberry plants. The different fungal isolates were obtained by isolations on potato dextrose agar (PDA) medium and water agar from different parts of the diseased strawberry plants. The different fungal pathogens were tested on the inoculated healthy strawberry plants, and were consistently re-isolated from the diseased plants that satisfy the Koch's postulates. The morphological features of hyphae and spore structures of the fungal isolates were examined by light microscopy. Identifications of the fungal isolates were carried out by PCR using the universal primers, ITS1/ITS4, which produced fragment size of approximately 560 bp. The amplified products were sequenced and aligned. Based on 100% ITS nucleotide sequence and the morphological characterization, the fungi were identified as *Rhizoctonia fragariae, Botrytis cinerae, Alternaria alternata* and *Fusarium oxysporum* species in the GenBank. The ITS sequences from isolates of the different fungal species were used for phylogenetic analysis using maximum likelihood.

Key Words: Leaf spot, Wilting, Root rot, Strawberry, ITS-PCR

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Genetic Diversity of *Pseudomonas savastanoi* pv. *savastanoi*, the Causal Agent of Olive Knot Disease, in the Western Mediterranean Region of Turkey

Hüseyin BASIM[1*], Esin BASIM[2], Asu ERSOY[3], Derya BAKİ[1]

[1]Akdeniz University, Faculty of Agriculture, Department of Plant Protection, Antalya-TURKEY
[2]Akdeniz Univ., Vocational School of Technical Sci., Organic Agriculture Programme, Antalya-TURKEY
[3]Antalya Directorate of Agricultural Quarantine, Antalya-TURKEY
*Corresponding author: huseyinbasim@yahoo.com

Abstract

The olive tree (*Olea europaea* L.) is one of the most valuable and predominant fruit trees found in the Mediterranean basin, especially in western and central Italy and Spain, southern Morocco and Tunisia, and eastern Turkey and Greece. Olive knot disease caused by *Pseudomonas savastanoi* pv. *savastanoi* (*Psv*) is one of the major diseases affecting olive (*Oleae europaea* L.) production in the western Mediterranean region of Turkey. Samples were collected from olive trees such as Gemlik, Memeli, Ayvalik, Edinciksu, Edremit, Kan and Memecik showing symptoms of suspected knot disease of different olive orchards in the districts of Antalya Center, Serik, Aksu, Kaş and Döşemealtı in the province of Antalya in the western Mediterranean region of Turkey in the years of 2015 and 2016. The identified pathogenic *Psv* isolates by pathogenicity, FAME (Fatty acid methyl ester) analysis, biochemical and molecular tests were clustered the olive strains into 2 separate by Rep-PCR (repetitive element palindromic PCR). Pulsed-Field Gel Electrophoresis (PFGE) using rare-cutting endonuclease, differentiated the olive *Psv* isolates into 3 discrete haplotype groups. The results may be useful for olive breeding programs aimed at the development of an olive cultivar resistant to *Psv*.

Key Words: Olive Knot, PFGE, *Pseudomonas savastanoi* pv. *savastanoi*, Rep-PCR

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Population Fluctitation of Harmfull and Beneficial Insect on Cotton Varieties Planted as Second Crop in Southeast Anatolia Region

Levent EFİL[1*], Ramazan Şadet GÜVERCİN[2], Halil KARAHAN[3]

[1]Çanakkale 18 March University, Agricultural Faculty, Plant Protection Department, Çanakkale-TURKEY
[2]Kahramanmaraş Sütçü İmam University, Turkoglu Vocational High School, Kahramanmaraş-TURKEY
[3]Agricultural Engineer, Kızıltepe/Mardin-TURKEY
*Corresponding author: efil46@hotmail.com

Abstract

This study was carried out at Kızıltepe in 2002 and Akçakale, Kızıltepe in 2003.The present study was aimed to investigate insect pest species in secon crop cotton, result in the following species could reach important population levels. These species are: *Asymmetrasca decedens* ve *Empoasca decipiens* Paoli, *Bemisia tabaci* Genn., *Earias insulana* Boisd., *Pectinophora gossypiella* Saund., *Creontiades pallidus* Rmb. *Aphis gossypi* Glover. Among these species *A. decedens, E. decipiens, B. tabaci, E. insulana, P. Gossypiella* and *C. pallidus* have potential invade and damage to secon crop cotton fields. *Chrysopa* sp., *Orius* spp. *Dereacoris* spp. *Aelothrips* spp. *Campylomma diversicornis* ve *Macrolophus* spp. could produce considerable population levels while *Adonia* spp., *Coccinella* spp., *Scymnus* spp., *Nabis* spp., *Piocoris* spp., *Geocoris* spp. ve *Stetorus* spp. had lower population levels. Argonomic traits such as hairness, glaund levels and nectarlessness of cotton variety have significant impact on population growth of the pest species. But among these traits, may not have impact on population of the predator species.

Key Words: Second crop cotton, Pests, natural Enemies, Cotton Variety

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Impact of Alfalfa as Showing as Strip in Cotton Areas on Some Predators and *Thrips tabaci* Lind. (Thysanoptera : Thripidae) Populations in Southeast Anatolia Region

Levent EFİL[1*], Abdullah ÇİL[2], Ayşe ÇİL[2]

[1]Çanakkale 18 March University, Agricultural Faculty, Plant Protection Department, Çanakkale-TURKEY
[2]Eastern Mediterranean Agricultural Research Institute, Adana-TURKEY
*Corresponding author: efil46@hotmail.com

Abstract

This study was carried out at Akçakale in 2006 and 2007. On the alfalfa planted next to the cotton field, the number of beneficial insects began to constitute population in a very early date. This population migrated to the cotton fields at the beginnig of cotton season with the harvesting of alfalfa and caused 3-8 times decreasing of *Thrips tabaci* Lind. population at early stage. In the middle and towards end of cotton season, at the second and third harvests of alfalfa, predator species on alfalfa migrated to cotton fields and played an important role on increasing predator numbers there. As moving away from the alfalfa field, decreasing appeared in the numbers of predator species. Also, 50 m plot, which is the farthest one occured mostly in the same group with the 5 m plot statistically. It was determined that planting alfalfa in cotton field as 4 m width stripe can decrease *T. tabaci* damage on cotton to the extend 50 m distance at early period and can increase the predators numbers.

Key Words: Southeast Anatolia Region, Cotton, Alfalfa, *Thrips tabaci*, Predators

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determining Bio-herbicidal Potential of White Cabbage (*Brassica oleracea* L. var. *capitata* (L.) *f. alba* DC) on Germination of Some Plants

Reyyan YERGİN ÖZKAN[1*], Leyla KURAL[2]

[1]Van Yüzüncü Yıl University, Faculty of Agriculture, Plant Protection Dept, Van-TURKEY
[2]Van Yüzüncü Yıl University, Institute of Natural and Applied Science, Van-TURKEY
*Corresponding author: reyyanyergin@yyu.edu.tr

Abstract

The aim of this study carried out between 2017-2018 was determined the effect of white cabbage (*Brassica oleracea* L. var. *capitata* (L.) *f. alba* DC), which is known to have an allelopathic effect on the germination of some weed and cultural crops seeds. In addition to weed plants *Amaranthus retroflexus* L., *Chenopodium album* L., *Solanum nigrum* L., cultural plants such as *Zea mays* L., and *Beta vulgaris* L., were used in this study. It has been shown that the seed germination rate was decreased by the increased concentration of cabbage post-harvest roots extractions which were made with different concentrations of aqueous and metanol (30, 40, 50%). But methanol extract was found to be more effective on germination. In the results, seeds of S. nigrum were less affected by the extractions than *A. retroflexus*, *C. album*, *B. vulgaris* and *Z. mays*. Accordingly, allelopathic chemicals produced by cabbage showed herbicidal activity. For this reason, it is considered that the results obtained will contribute to the integrated weed management.

Key Words: *Brassica oleracea*, allelopathy, weed, germination

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Problems of Plant Pests and Awareness Levels of Şanlıurfa Field Crops Producer

Ayçin AKSU ALTUN[1*], Ayşin BİLGİLİ[1], Zübeyde Filiz ARSLAN[2], Şeyda İPEKÇİOĞLU[3]

[1]GAP Agricultural Research Institute, Department of Plant Protection, Şanlıurfa, TURKEY
[2]Düzce Univ., Faculty of Agriculture and Nature Science, Department of Plant Protection, Düzce-TURKEY
[3]GAP Agricultural Research Institute, Department of Agricultural Economics, Şanlıurfa-TURKEY
*Corresponding author: aycinaksu@hotmail.com

Abstract

In some cultivated plants, harmful effects of crop protection factors leading to crop losses are at the beginning. Wheat, lentil, cotton and maize are located in the first place in terms of production area and amount in field crops grown in Şanlıurfa. A questionnaire study was conducted between 2014 and 2016 in order to determine plant protection problems and awareness levels of existing producers. In this context, a total of 24 questionnaires were conducted with 58 producers in wheat, 53 in cotton, 38 in corn and 37 producers in lentil, and the results were evaluated in the SPSS statistical package program. Findings on plant pests are also compiled and important results are presented in this report.

As a result; it was determined that the producers most commonly encountered in the wheat with Eurygaster spp. and aphid pests, cotton with sucking insects, maize Sesamia nonagrioides and lentil apion and aphid pests. Another important consequence of the work is that producers prefer insecticides to the challenge of harmful insects in the fields. It is thought that in order to raise awareness on this issue, farmers' trainings can be given to prevent correct misapplications.

Key Words: Pests, field crops, insecticide, questionnaire, Şanlıurfa

Acknowledgements: This study was supported by TAGEM (General Directorate of Agricultural Research and Politics of TURKEY) and numbered TAGEM-BS-13 /12-01 /04-01.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Advances in Controlled Atmosphere Storage of Cereal

Ceyhan SÖNMEZ[1*], Abuzer YÜCEL[2]

[1]Harran Univ., Graduate School of Natural and Applied Sci., Dept. of Plant Protection, Şanlıurfa-TURKEY
[2]Harran University, Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
*Corresponding author: bitkikoruma_ceyhan@outlook.com

Abstract

Fumigation method is the most common and effective method used against stored product pests in the world and our country. The most widely used fumigants in this process are methyl bromide and phosphine gas. However, the use of methyl bromide is prohibited in accordance with the Montreal Protocol dated 12 November 2008 and number 27052 due to significant damage to the ozone layer and the environment. The use of phosphine gas has been found to be resistant to storage pests in more than 45 countries of the world. The use of fumigants has been banned due to resistance problems in the storage product pests and negative effects on the environment and humans. Therefore, researchers have made more experiments on plant-based insecticides and modified controlled atmospheric conditions has gained importance in recent years. The application of modified controlled atmospheric conditions is partly inexpensive and does not leave residue, so it is important to choice in this area. One of the disadvantages of this method is time length.

Key Words: Fumigation, Storage, Controlled atmospheric conditions

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A New Pathogen Threat for Pistachio (*Pistacia vera* L.) Trees in Şanlıurfa: *Candidatus* Phytoplasma solani

Mehmet Ertuğrul GÜLDÜR[1*], Eray ŞİMŞEK[1], Behçet Kemal ÇAĞLAR[2], Murat DİKİLİTAŞ[1], Havva GÜMÜŞ[1], Hümeyra AYVACI[1]

[1]Harran University Faculty of Agriculture, Department of Plant Protection, Şanlıurfa-TURKEY
[2]Çukurova University Faculty of Agriculture, Department of Plant Protection, Adana-TURKEY
*Corresponding author: mguldur@harran.edu.tr

Abstract

Turkey is one of the most pistachio producing country after USA and Iran in the world. Wild pistachio species are spread in almost all parts of Anatolia. However, the most important commercial productions are only obtained from Gaziantep, Şanlıurfa and Siirt provinces. There are biotic and abiotic agents that restrict pistachio production and one new pathogen has been detected in pistachio trees named as "*Candidatus* Phytoplasma solani". Phytoplasmas are plant pathogenic bacteria that reduce yield and quality and cause very different disease symptoms of crop plants. Leaf-yellowing, leaf-scorching, stunting and decline symptoms on infected pistachio trees were observed. Actually, these symptoms are not new in pistachio trees in Şanlıurfa. First disease symptoms had been observed in 1995 and several studies were then carried out to detect the pathogen that might be responsible for these symptoms. Ca. Phytoplasma solani was first detected in 2014 and several studies were performed to characterize this pathogen that using molecular techniques such as Nested-PCR, in silico RFLP and sequence analysis. After the first detection of the pathogen, many different surveys were performed to determine the disease incidence and prevalence in Şanlıurfa province. In this study, detection of phytoplasma strategies and prevention of disease occurence and spread were discussed.

Key Words: Phytoplasma, Detection, Pistachio, Decline, Pathogen

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Some Antioxidant Enzyme Activities, Chlorophyll and Proline Contents of Grapevine (*Vitis vinifera* L.) During Phytoplasma Infection

Eray ŞİMŞEK[1*], Murat DİKİLİTAŞ[1], Sema KARAKAŞ[2], Havva GÜMÜŞ[1], Mehmet Ertuğrul GÜLDÜR[1]

[1]Harran University Faculty of Agriculture, Department of Plant Protection, Şanlıurfa-TURKEY
[2]Harran University Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: eraysim@harran.edu.tr

Abstract

Phytoplasmas are obligate plant pathogens that harm to economically important crop plants such as grapevine and some other fruit trees. They are not cultured *in vitro* due to their obligatic traits. Therefore, there are very few studies on biochemical relationships of plant pathogenic phytoplasmas with their hosts. One of the pathogenic stress responses in plant tissues is the production of reactive oxygen species (ROS) that may cause oxidative stress and eventually lead to reduction in crop yield. Determination of antioxidant enzyme activities, proline, total protein and chlorophyll contents of phytoplasma infected-plants may help us understanding the mechanisms of plant-phytoplasma interactions. Determination of antioxidant enzyme activities among plant cultivars can be used in selection for tolerant varieties for phytoplasma disease resistance. This study was carried out to measure the activity of some antioxidant enzymes (peroxidase; POX, catalase; CAT), proline, protein and total chlorophyll (*a* and *b*) contents on naturally infected *Ca*. Phytoplasma solani grapevine cultivar Hönüsü. This is a commonly used local cultivar in Southeast Anatolia Region. Phytoplasma-infected leaves showed clearly distinct pattern as compared to those of control plants. The infected plants exhibited increased amounts of proline (1.257 □Abs g-1FW) and high enzyme activities (3.654 □Abs mg-1 protein) and decreased amounts of proteins (0.987 □Abs mg-1 protein) as compared to control group (0.6, 3.617, 1.162 respectively, $p<0.05$). Also, total chlorophyll contents were significantly decreased. The present study showed for the first time that the effect of phytoplasma-infection on antioxidant enzymes and proline content in leaves of local grapevine cultivar named as "Hönüsü" during the vegetation. We conclude that decreased amount of protein possibly contributed to the increase of stress-related proline and antioxidant enzymes.

Key Words: Phytoplasma, Grapevine, Biochemical Changes, Proline, Protein, Chlorophyll

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

First Report of Grapevine Bois Noir Phytoplasma (*Candidatus* Phytoplasma solani) Infecting Some Local Grapevine Cultivars in Şanlıurfa

Eray ŞİMŞEK[1*], Mehmet Ertuğrul GÜLDÜR[1]

[1]Harran University Faculty of Agriculture, Department of Plant Protection, Şanlıurfa-TURKEY
*Corresponding author: eraysim@harran.edu.tr

Abstract

During the summer of 2017, surveys were performed to evaluate the incidence of phytoplasma agents in some local grapevine cultivars in Şanlıurfa. Grapevine leaf samples were collected from plants showing symptoms including downward rolling of leaves, yellowing or necrosis of leave veins, redding leaves, uneven lignification of stems etc. suggesting phytoplasmas. Samples were also collected from asymptomatic grapevine plants. Since the symptoms were suggestive of possible phytoplasma, molecular diagnostics for phytoplasma infection was deployed. Total DNA was extracted from 41 of the samples according to CTAB method. All samples were tested by nested PCR using two phytoplasma universal primer pairs (R16F1/R0 and R16F2n/R2) and one phytoplasma group specific (R16(I)F1/R1) primer pairs which are specific for 16SrI, II, XII, XV phytoplasma subgroups. Some of the symptomatic samples gave expected bands (1.2 kbp and 1.1 kbp) on the agarose gel while asymptomatic ones gave no bands. R16F2n/R2 primed PCR products were subjected to restriction fragment length polymorphism (RFLP) analysis by using some endonucleases that generally used for phytoplasma subgroups differentiation. RFLP analysis showed identical patterns to "*Candidatus* Phytoplasma solani" (16SrXII). To the best of our knowledge, this is the first report of Ca. P. solani infection in some local grapevine cultivars in Şanlıurfa. In the management of the pathogen further investigations are needed to determine possible vectors and reservoir hosts.

Key Words: Phytoplasma, Grapevine, Bois noir, Şanlıurfa

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Advantages of Real-Time PCR in Detection, Diagnosis and Monitoring of Plant Pathogenic Phytoplasmas

Eray ŞİMŞEK[1*], Mehmet Ertuğrul GÜLDÜR[1], Murat DİKİLİTAŞ[1]

[1]Harran University Faculty of Agriculture, Department of Plant Protection, Şanlıurfa-TURKEY
*Corresponding author: eraysim@harran.edu.tr

Abstract

Phytoplasmas are bacterial plant pathogens that may severely reduce crop yield in all over the world. Some phytoplasma strains are so dangerous that quarantine measures are required to control them. Nested PCR has been employed to detect phytoplasmas almost from the very beginning that was discovered. However, there are some methodological difficulties and deficiencies regarding isolation and characterization. In some cases, it is difficult to detect them from plant tissues due to their low concentration and uneven distribution in plants. Therefore, sensitive detection of this pathogen especially in woody plants is of great importance for disease management. In recent years, various protocols based on a Real-Time PCR have been described for universal and subgroup-specific phytoplasma detection. Real-Time PCR techniques have become essential tools in research laboratories for an early detection of the pathogen. Though both conventional PCR and real-time PCR are basically based on similar mechanisms, there are many advantages of real-time PCR. The purpose of this study is to highlight the advantages of real-time quantitative PCR intended to discuss advantages when compared to conventional PCR in the diagnosis and monitoring of plant pathogenic phytoplasmas.

Key Words: Phytoplasma, Detection, RT-PCR, Plant Protection, Plant Disease

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Usability of the Yellow Sticky Traps in *Pistachio psylla* [*Agonoscena pistaciae* Burck. and Laut. (Hemiptera: Aphalaridae)] Control

Ayçin AKSU ALTUN[1*], Cemil YETKİN[1], Yılmaz IŞIK[2], İnanç ÖZGEN[3]

[1]GAP Agricultural Research Institute, Department of Plant Protection, Şanlıurfa-TURKEY
[2]GAP Agricultural Research Institute, Department of Horticultural Plants, Şanlıurfa-TURKEY
[3]Fırat University, Faculty of Engineering, Department of Bioengineering, Elazığ-TURKEY
*Corresponding author: aycinaksu@hotmail.com

Abstract

Pistachio psylla *Agonoscena pistaciae* with different numbers of hanging yellow sticky traps; the study investigating the possibilities of biotechnical control was carried out in Şanlıurfa province between 2016-2017. In the study, yellow sticky traps with 1016 B codes were used in previous studies. According to the design pattern of coit, as a trap activity experiment, with the traps hanging as 4 'and 8' pieces to the trees, work was carried out repeatedly 10 times. Following the February-November months of 2016, psylid numbers were adhered to the yellow sticky traps. In addition, number of psylid was recorded by compound leaf counting and impact method in each tree. The yellow sticky traps are not suspended, and the number of pills and pulses in the psylla compound leaves and pulses method is determined in the trees that are sprayed by the manufacturer. The same procedures were also performed in trapped control groups.
According to the results of the work in 2016, 4 yellow sticky traps per tree are being studied for 2017 and 2018 years. The study conducted in 2017 and 2018 will determine the availability of mass capture. According to the results of this positive study, theoretical and practical information will be provided to the producers for the dissemination of the applications for the control to pest. Studies; pistachio is important for IPM and biotechnical control studies.

Key Words: Pistachio, *Agonoscena pistaciae*, Sanliurfa, yellow sticky trap, IPM

Acknowledgements: This study was supported by TAGEM (General Directorate of Agricultural Research and Politics of TURKEY) and numbered TAGEM-BS-15/10-01/01-11 (2).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Benchmarking Tolerance of Ethyl Methansulfonate and Non-Ethyl Methansulfonate Applied Fırat 87 Red Lentil Variety to Imazamox Herbicide

Engin YÜCEL[1*], Bekir BÜKÜN[2]

[1]Harran University, Faculty of Agriculture, Department of Plant Protection, Şanlıurfa-TURKEY
[2]Dicle University, Faculty of Agriculture, Department of Plant Protection, Diyarbakır-TURKEY
*Corresponding author: yucel_engin@yahoo.com.tr

Abstract

To determine the response to different doses of imazamox herbicide, Ethyl Methansulfonate (EMS) applied red lentil variety Fırat 87, was treated with in order, 1and 2 fold dose of imazamox herbicide. Untreated and Non-EMS applied, treated with imazamox herbicede Fırat 87 samples were used for control. Treatments applied the 4-6 leaves term of plants. After herbicide traeatment, samples carried out 28 days and 14. and 28. Days %symptom and length measurement datas were taken. Assays was established at Plant Protection Department greenhouse as 3 replicates, in randomized plot experimental design and repaeated 2 times. The datas processed with SAS statistical analysis program and ANOVA analysis carried out, in this way try to determine the effect of EMS application to tolerance of this lentil variety to imazamox herbicide. As a result of the analysis carried out it was found the EMS applied Fırat 87 lentil samples most tolerant to imazamox herbicide from the Non-EMS applied samples. Non-EMS applied samples were seen as the most sensitive type. Respectively, Non-EMS applied samples the % affect value of 80-90%, EMS aplplied samples the % affect value of 40-45% have been identified. If it is considered the recommended dose of the herbicide imazamox 100 ml ha-1, in much lower doses of the imazamox herbicide was quite affect these lentil varietes. But EMS applied Fırat 87 samples became more tolerant to imazamox herbicide.

Key Words: Clearfield, herbicide resistance, greenhouse, mutation, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Wilt, Stem and Root Rot Pathogens Determined in Pepper Production Areas in GAP Region

Aysin BİLGİLİ[1*], Mehmet Ertugrul GÜLDÜR[2], Seral YÜCEL[3]

[1]GAP Agricultural Research Institute, Department of Plant Health, Sanliurfa-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Plant Protection, Sanliurfa- TURKEY
3Selcuk University, Silifke-Tasucu Vocational School, Mersin-TURKEY
*Corresponding author: aysin.bilgili@tarim.gov.tr

Abstract

In the Southeastern Anatolian Region (GAP), pepper is produced around 267 868 tonnes in 12 136 ha area. According to order of the sizes of pepper production areas, Sanliurfa is respectively followed by Kilis, Gaziantep, Adiyaman, Diyarbakir, Batman, Sirnak, Siirt and Mardin. The purpose of this study is to determine fungi originated root and stem rots pathogens that cause yield losses, wilts and dryings in the pepper grown field areas as a vegetable in the GAP Region.

The survey studies was performed in the nine provinces of GAP Region in 2013 and 2014 years according to systematic sampling design. As a result of survey studies, sampling was performed in a total of 296 fields, *Fusarium* spp. types of *Fusarium oxysporum*, *F. solani*, *F. oxysporum* f.sp. *vasinfectum* (*Fov*), *Fusarium* sp., *Phytophthora* spp. types of *P. capsici* and *P. citrophthora*, *Phytophthora* sp., *Rhizoctonia solani*, *Macrophomina phaseolina*, *Aspergillus flavus*, *A. niger* and *Aspergillus* sp., *Pythium* spp., *Pythium ultimum*, *Alternaria* spp., *Verticillium* spp. rot pathogens of stem and root and in the antagonistic fungi of *Trichoderma* spp. were determined. In the region, it was determined that *Fusarium* spp. was common and virulent type and they caused wilt, root and stem rot diseases.

10 pathogenicity experiment were conducted seperately for each pathogen as 4 replicates under greenhouse and laboratory conditions. As a result of the experiments, fungi of *Fusarium* spp., *Macrophomina phaseolina*, *Phytophthora* spp., *Alternaria* spp., *Aspergillus* spp., *Rhizoctonia solani*, *Pythium* spp., *Verticillium* spp. diseased pepper seedlings and in the laboratory reisolation studies were performed.

Key Words: Pepper, wilt, root and stem rot pathogens, pathogenicity, GAP Region

Acknowledgements: This study was supported by TAGEM (General Directorate of Agricultural Research and Politics) and HUBAK (Scientific Research Comittee of Harran University) as a part of PhD. thesis.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determining the Level of Consciousness of the Farmers in Şanlıurfa about Plant Diseases and Disease Control in the Field Crops

Ayşin BİLGİLİ[1*], Ayçin AKSU ALTUN[1], Şeyda İPEKÇİOĞLU[2], Zübeyde Filiz ARSLAN[3]

[1]GAP Agricultural Research Institute, Department of Plant Health, Sanliurfa-TURKEY
[2]GAP Agricultural Research Institute, Department of Agricultural Economics, Sanliurfa-TURKEY
[3]DüzceUniv., Faculty of Agriculture and Nature Science, Department of Plant Protection, Düzce-TURKEY
*Corresponding author: aysin.bilgili@tarim.gov.tr

Abstract

Plant diseases cause the significant yield losses in the field crops. Recently it has been determined that soil-borne root rot pathogens lead to significant amount of yield losses in commonly grown the crops in Sanliurfa such as wheat, lentils, cotton and corn.
In this study, the questionnaire study has been performed between years of 2014 and 2016 in Sanliurfa province in order to determine production habits of the field crop farmers such as wheat, corn, lentil and cotton and to determine their current approaches against to common plant diseases. The questionnaire studies have been performed according to Parsons (1974) which assumes that a samples from at least 30 unit shows a normal distribution. For this purpose, the answers of 24 question directed to 58 wheat, 37 lentil, 38 corn and 53 cotton producers were evaluated in SPSS statistical program.
As a result of the questionnaire study performed, it was determined that farmers encountered mostly with plant disease of soil-borne pathogens. Soil-borne pathogens were the most important disease problem for lentil, cotton and corn producers while in the second for wheat producers. The most common diseases in wheat fields were determined as leaf diseases caused by fungi such as yellow and brown rusts. It was also determined that producers generally prefered pesticides usage against to fungi diseases in the fields of cotton, wheat, lentil and corn. In this regard, the relevant public institutions and organizations should increase their training, publishing activities and extension work to raise awareness and conscious of producers are recommended.

Key Words: Plant diseases, Field crops, Disease control, Questionnaire, Sanliurfa

Acknowledgements: This study was supported by TAGEM (General Directorate of Agricultural Research and Politics).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Biological Control in Sustainable Agriculture

Ceyhan SÖNMEZ[1*], Mehmet MAMAY[2]

[1]Harran Univ., Graduate School of Natural and Applied Sciences, Dept. of Plant Protection, Şanlıurfa-TURKEY
[2]Harran University Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
*Corresponding author: bitkikoruma_ceyhan@outlook.com

Abstract

There has been an increase in the need for economic food and efforts to reduce adverse environmental effects of agriculture-based practices along with the increase of the global population. For this reason, sustainable agriculture has emerged as one of the environment-friendly production systems that can be an alternative to the traditional agricultural production techniques. The sustainable agriculture is to meet society's food needs in the present without compromising the ability of future generations to meet their own needs. In a real sense, sustainable agriculture is a necessary component of social, economic and environmental sustainability. There are many applications commonly used in sustainable agriculture and sustainable food systems. The biological control, known environmentally friendly agricultural pest control method, is considered among the most promising applications for sustainable agriculture. It is an economical, reliable and environmentally friendly pest management method by using living organisms to reduce pest populations. At the same time, the adverse effect on the environment is minimized by reducing the dependence on synthetic pesticides. Biological control can also be considered as a tool for achieving sustainable pest management in the developed world. Because it is seen that this is the most sustainable, cheapest and most environmentally safe pest control system to provide additional benefits for the breeders and consumers compared to the chemical control. As a result, social, economic and environmental sustainability is closely linked to biological control in sustainable agriculture. For this purpose, it should be improved policies-related recommendations on how to increase the adoption of this environmentally-sensitive technology.

Key Words: Biological control, Sustainable agriculture, Environmentally friendly pest management

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determining the Efficiency of Fumigant Applications Against Root Nematodes (*Meloidogyne* spp)

Adem ÖZARSLANDAN[1,2*], Refik BOZBUGA[1]

[1]Biological Control Research Institute, Adana-TURKEY
[2]Applied Technology and Management School of Silifke, Mersin University, Mersin-TURKEY
*Corresponding author: ozarslandan2001@yahoo.com

Abstract

Root-knot nematodes (*Meloidogyne* spp) have a wide host range and cause significant crop losses in vegetable fields. Root nematodes are still causing high yield losses in the greenhouses due to application mistakes in recent years. Different fumigants applications are important to determine the effects of fumigants against nematodes. For this purpose, fumigant applications in the province of Mersin in 2014-2015 were investigated for the root nematode controlling. EDN (Ethanedinitrile), a new fumigant to control root-knot nematodes, was used in this experiment. Metam sodium was applied as comparison fumigant at the dose of 125 l/da and EDNTM at the doses of 200, 300, 400 and 500 l/d by the drip watering system. The 0-10 galling index was used in the evaluation of the experiments and the Abbout formula (%) was used to determine the efficacy. It was determined that the rate of root galling in greenhouse 1 in non-treated parcels was 7,15. In the EDNTM application at the rates of 200, 300, 400 and 500 l / da against root-knot nematodes were 3.2, 0.44, 0.45, 0.4 of galling index, respectively, and the percentage effects were 54.5; 94; 93.3, 94.5, respectively. Metam sodium, which is a comparison fumigant, was found to be effective at a rate of 92.5 percent with a rate of 0.55 galling index at a dose of 125 l / ha. Parallel results were determined in Greenhouse 2, too. These results indicate that the EDN fumigant is successful in the nematode controlling and can be used as a fumigant against root nematodes in the tomato cultivation.

Key Words: Ethanedinitrile, Fumigant, root knot nematode

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of a Nano-Sized Calcium Polysulfide Product Against the Two-Spotted Spider Mite, *Tetranychus urticae* Koch

Fedai ERLER[1*], Ahmet Melih ÖZEL[2], Zafer ŞAHİN[2], Barış İMREK[1]

[1]Department of Plant Protection, Faculty of Agriculture, Akdeniz University, Antalya-TURKEY
[2]New Systems Petrol Ürünleri İth. İhr. İmal. San. Tic. Ltd. Şti., Eti Mah. Toros Sok., Çankaya/Ankara-TURKEY
*Corresponding author: erler@akdeniz.edu.tr

Abstract

The two-spotted spider mite, *Tetranychus urticae* Koch (Acari: Tetranychidae) is one of the most important pests responsible for yielding losses to many horticultural, ornamental and agronomic crops. The major problem in the control of this pest is the response to develop resistance to many acaricides due to high reproductive potential and a short generation time. In the present study, a nano-sized calcium polysulfide product was evaluated against the pest under greenhouse conditions at three different doses, 0.125, 0.25 and 0.5 l/100 l water in two successive growing periods (Fall-Winter 2016 and Spring-Summer 2017). Only one application was made each growing season at a time when all the biological stages of the pest occurred on the plants. The results showed that the product had a dose- and biological stage-dependent activity. At the highest concentration and seven days after application in the first growing period, the product caused different mortalities in different biological stages of the pest; for instance, 80.2% in adults, 61.6% in proto- and deuto-nymphs, 54.2% in larvae and lastly 14.1% in eggs. In the second growing period, the product exhibited a slightly higher acaricidal activity causing the mortalities, 82.6% in adults, 65.2% in proto- and deuto-nymphs, 60.3% in larvae and lastly 18% in eggs. Overall the results suggest that the product may a viable alternative to existing acaricides for the control of red spider mites.

Key Words: Nano-sized calcium polysulphide product; Two-spotted spider mite; acaricide; Antalya

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Cotton-Melon Aphid, *Aphis gossypii* Glover (Hemiptera: Aphididae) Resistance in Some Melon Lines by Choice-Test Experiments

Fedai ERLER[1*], Musa KIRIŞIK[2], Mine ÜNLÜ[2]

[1]Department of Plant Protection, Faculty of Agriculture, Akdeniz University, Antalya-TURKEY
[2]Batı-Akdeniz Agricultural Research Enstitute, Antalya/Turkey, Antalya-TURKEY
[*]Corresponding author: erler@akdeniz.edu.tr

Abstract

Aphis gossypii Glover affects a wide range of host plants including Cucurbitaceae species and causes serious direct and indirect damage to many crops. Although economic losses caused by this pest are mainly due to virus transmission, direct damage by sucking plant sap is not so important. This study consisted of two consecutive work packages; in the first stage, a total of 23 melon lines from different parts of Turkey has been evaluated for resistance to *A. gossypii* by antixenosis test method under greenhouse conditions, and then in the second stage, the most resistant 4 lines (PI414723, ÜNLÜ, TK15 and ŞÜKRÜBEY) were evaluated once more for resistance against the pest using choice-test method. N3, which was found to be the most susceptible line in the first stage of the study served as control. Counts were made 30 min., 1, 2, 4 and 8 h after the aphids (24 per petri dish) were introduced into the test arena (Petri dish with 15 cm diameter) including leaf discs (2.5 cm diameter) belonging to the five lines. Resistance data were calculated by taking the percentage of aphids who prefer susceptible or resistant lines at each time interval for each test arena. The results showed that the aphids preferred the line, PI414723 (2 aphids/disc after 8 h) less than the three remaining lines. Additionally, aphids preferred to settle on susceptible control (N3) (6 aphids/disc after 8 h) during the experiment. Results suggest that PI414723 can be used as a resistant melon line against *A. gossypii*.

Key Words: Melon; cotton-melon aphid; *Aphis gossypii*; resistance; Antalya

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Performance of Various Herbicides on Weed Control in Cotton Fields and Productivity of Cotton in Iğdır Province

Serdar ŞAHİN[1*], Ramazan GÜRBÜZ[2]

[1]Igdir University, Faculty of Agriculture, Institute of Natural And Applied Sciences, Igdir-TURKEY
[2]Igdir University, Faculty of Agriculture, Departmen of Plant Protection, Igdir-TURKEY
*Corresponding author: serdarshn_1163@outlook.com

Abstract

Cotton is one of the most important fibre crop, known as "White gold" plays a key role in the Turkish textile industry. Weeds interfere with the growth activities of cotton plants and cause serious loss of cotton yield and quality. Herbicides are chemicals used widely for weed control in cotton production areas. To find out the effective herbicide in cotton field of Iğdır Province a field study was conducted at The Agricultural Research and Application Center of Iğdır University during plant production of 2017 to evaluate the effectiveness of some herbicides. In the control of weeds associated with cotton crops. The experiment consisted of seven characters (Pendimethalin 330 l/g, Quizalofop-p-ethyl 50 gr/l, Clethodim 116,2 g/l, Propaquizafop 100 g/l, Cycloxydim 100 l/gr, weedy and weed free control) was laid out in randomized block design with four replications. Pendimathaline was applied as pre-emergenge and other herbicides were applied as post-emergence herbicides. The dominant weeds in the experiment field were; *Sorghum halepense* (L.) Pers. *Convolvulus arvensis* L., *Xanthium strumarium* L., *Cynodon dactylon*, *Chenopodium album* L., *Amaranthus retroflexus* L., and *Lactuca serriola* L. Among the treatments used in this study, weed-free parcels gave the highest yield (500a kg/da) and was followed by Cycloxydim (264b kg/da) and fiber quality were 4.04 microns and 3.30 microns respectively. Results, in which weed-free check caused over 90 % increase in the cotton yields when comparing with weedy checks, shows that weed control is important for cotton production.

Key Words: Weed control, herbicides, cotton, fiber quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

An Evaluation on the Development of *Acanthoscelides obtectus* in Deposits in Some Bean Cultivars

Emin KAPLAN[1], Senem SABANCI BAL[2*], Mehmet AYÇİÇEK[2]

[1]Bingöl Univ., Agriculture Faculty, Dept. of Plant Protection, BİNGÖL
[2] Bingöl Univ., Agriculture Faculty, Dept. of Field Crops, BİNGÖL
*Corresponding authors: senemsabanci@hotmail.com

Abstract

The presence and intensity of harmful insects which are effective on the yield and quality of the bean which is the agricultural product that can be produced in almost all regions of our country, is very important. Because in 2015-2016 studies were carried out to obtain bean seed beetle (*Acanthoscelides obtectus*) belonging to Bingol University Agricultural Application and Research Center and to determine the development of harmful bean varieties. In addition to these studies, the specimens of *Acanthoscelides obtectus* of obtained from the field, were cultivated in 10 varieties of dry bean varieties, the population movement and damage status of *Acanthoscelides obtectus* were determined in storage conditions. Thus, it was determined Terzibaba that the most resistant species against *Acanthoscelides obtectus* which is cultured in storage conditions and Local-3 is the most sensitive species.

Key Words: Beans; Insects; *Acanthoscelides obtectus*; Population; Bingol

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Fungicide Resistance in Populations of *Venturia inaequalis* from Apple orchards in Bursa, Turkey

Zühtü POLAT[1*], Harun BAYRAKTAR[2]

[1]Atatürk Central Horticultural Research Institute, 17 Yali str., 77102 Yalova-TURKEY
[2]Ankara University, Faculty of Agriculture, Department of Plant Protection, Dışkapı, Ankara-TURKEY
*Corresponding author: zuhtu.polat@tarim.gov.tr

Abstract

Apple scab disease, caused by Venturia inaequalis is a devastating disease that restricts apple production worldwide. Fungicides play a key role in disease management strategies to this pathogen. The occurrence of fungicide resistance is one of the most important problem in the control of apple scab and should be continuously monitored to reduce risk of control failure with fungicides. The aim of this study was to evaluate the sensitivity of V. inaequalis populations from Bursa province to Myclobutanil, Thiophanate methyl, Difenoconazole and Kresoxym methyl fungicides. Single spore isolates were collected from different apple orchards in İnegöl, Gürsu, Kestel, Osmangazi districts of Bursa province in 2016. Mycelium growth rates of all isolates were measured on 30th days to detect fungicide sensitive and EC50 values were determined. The results revealed widespread resistance to these fungicides in all orchards. This fact should be taken into consideration in disease management strategies in Bursa province, where is one of the important apple production regions of Turkey.

Key Words*:* Apple scab, Venturia inaequalis, fungicide, resistance, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Determination of Virus Diseases for Pepper Grown into Open Fields in Adana

Pelin KELEŞ ÖZTÜRK[1*], Saadettin BALOĞLU[2]

[1]Biological Control Research Institute, Adana-TURKEY
[2]Cukurova University The Faculty of Agriculture Department of Plant Protection, Adana-TURKEY
*Corresponding author: pkelesoz@hotmail.com

Abstract

The aim of this study is to identify the viruses present in pepper cultivation to determine the prevalence of these viruses in the samples, to obtain and maintain virus isolates in open fields in Adana province and its districts. In the surveys conducted within the scope of the studies, totally 349 samples of pepper plants showing virus-like diseases in 2014 (191) and 2015 (158) were collected. The Double Antibody Sandwich Enzyme-Linked Immunosorbent Assay (DAS-ELISA) and Reverse Transcription Polymerase Chain Reaction (RT-PCR) methods were applied to detect viruses in collected pepper plants samples. It was determined that 208 of the tested samples were infected with the single, double and multiple infections of ten different viruses. The rate of the presence of virus agents in the collected pepper samples was determined as 59.6%. As an average of two years, *Potato Y virus*-PVY was the most common virus with a rate of 30.1%. This was followed by *Cucumber mosaic virus*-CMV 25.5%, *Tobacco etch virus*-TEV 26.8%, *Tomato spotted wilt virus*-TSWV 10.6%, *Pepper veinal mottle virus*-PVMV 2.7%, *Pepper mottle virus*-PepMoV 1.9%, *Tobacco mosaic virus*-TMV and *Pepper mild mottle virus*-PMMoV 0.8%, *Tomato mosaic virus*-ToMV 0.5% and *Alfalfa mosaic virus* -AMV 0.3%.

Key Words: Pepper, virus, Adana

Acknowledgements: This study was funded by The Scientific and Technological Research Council of Turkey (TUBITAK-1001 project no: 213 O 101).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of the *Tobacco etch virus* (TEV) on the Photosynthesis Activity and Leaf Area of Karaisali Pepper Lines

Pelin KELEŞ ÖZTÜRK[1*], Duygu ARGÜN[2], Saadettin BALOĞLU[3], Davut KELEŞ[2]

[1]Biological Control Research Institute, Adana/TURKEY
[2]Alata Horticultural Research Instıtute, Mersin/TURKEY
[3]Cukurova University The Faculty of Agriculture Department of Plant Protection, Adana/TURKEY
*Corresponding author: pkelesoz@hotmail.com

Abstract

Karaisali pepper population is a capia pepper variety with high dry matter content and it is widely grown in Adana province and around. As a result of surveys carried out in areas where this population is cultivated, *Tobacco etch virus*-TEV has been identified as the most common and harmful virus in Karaisalı pepper. Reaction experiments were carried out with 3 different pure lines obtained by the breeding of the Karaisali pepper populations. The effects of TEV on the rate of photosynthesis and leaf area were evaluated in the 3 pepper lines. The experiment was carried out with mechanically inoculated plots containing virus-infected pepper plants and control plots containing healthy pepper plants. After mechanical inoculation, the virus transmission was confirmed by the Double Antibody Sandwich Enzyme-Linked Immunosorbent Assay (DAS-ELISA) method and observations were made periodically. The photosynthesis rate and leaf area of each repetition of virus-infected and healthy control plots were examined and statistical analyzes were carried out. As a result of two years of repeated work, it was determined that the rate of the photosynthesis activity of the pepper lines were reduced by the TEV agent. In addition, the difference between healthy and infected plots of all lines in leaf area measurements were found statistically significant.

Key Words: *Tobacco etch virus*, pepper, photosynthesis activity, leaf area

Acknowledgements: This study was funded by The Scientific and Technological Research Council of Turkey (TUBITAK-1001 project no: 213 O 101).

Soil Science and Plant Nutrition Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Vibroseismic Isolation of Machines, Buildings and Constructions with the Help of Elastomeric Blocks

Anatolii BULAT[1], Anatolii KOBETS[2], Vitalii DYRDA[2], Mykola LİSİTSA[1]

[1]Polyakov Institute of Geotechnical Mechanics of the National Academy of Sci. of Ukraine, Dnipro-UKRAINE
[2]Dnipro State Agrarian and Economic University, Dnipro-UKRAINE
*Corresponding author: info@dsau.dp.ua

Abstract

Results of experimental study on determining static and dynamic characteristics of seismic supports (compressive stiffness, shear, logarithmic damping decrement, dissipation factor with taking into account structural damping) are presented in the paper. Subject of the study were four types of sup-ports with the following dimensions: a) a support with height (of rubber layer) 2□120 mm and diam-eter 400 mm; b) a support with height 2□70 mm and diameter 400 mm; c) a support with height 2□50 mm and diameter 480 mm; d) a support with height 2□50 mm and diameter 500 mm. The findings include the "force – displacement" dependence under the vertical and shear loads and dis-sipative characteristics of the designed seismic supports. The designed and tested structures of the RBs were used for protection of the following residential buildings in the city of Kiev: the 10-section 10-storey residential building in the Kikvidze street and the two-section 27-storey building in the Obolonsky avenue – against vibrations caused by motor vehicles and underground trains. The vibroseismic insulation with the RBs creates natural frequency of the building horizontal oscillation less than 1 Hz, which corresponds to the requirements of the State Construction Regulations and Eurocode 8 concerning the design of seismic insulation systems for the buildings.

Key Words: Vibration isolation; Seismic isolation; rrubber-metal blocks; Piles with rubber-metal blocks.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Influence of Fertigation on Plant Productivity and Graın Quality of Corn in the Conditions of Ukrainian Steppe

Dmytro ONOPRIIENKO[1*]

[1]Dnipro State Agrarian and Economic University
*Corresponding author: gidrofak@meta.ua

Abstract

The given experimental data testify that on chernozem soils of the northern Steppe of Ukraine, in the production of corn grain, nitrogen fertilizers can be effectively introduced with irrigation water (fertigation). When cultivating corn under intensive technology on irrigated lands in the northern Ukrainian Steppe, it is advisable to add nitrogen fertilizers to irrigated water in the following proportions: 40% of the overall dose during the period of 10-12 leaves, 40% - in the phase of pinnacle ejection and 20% in the phase of milky ripeness of grain. For such use of nitrogen fertilizers, the average yield of corn grain increased by 2.72 - 4.36 t/ha, than without the use of fertilizers. The advantages of fertigation in comparison with the traditional technology of introduction of mineral fertilizers of brushwood are shown.

Key Words: Corn; Fertilizers; Irrigation; Fertigation; Soil

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of IBA and Pine Bark as Media on the Rooting and Growth of *Ficus nitida*

Osamah Ibrahim AHMED[1*], Asmaa Mohamed ADİL[2], Aytan Jaleel JALAL[3]

[1]Collage of Agriculture, University of Kirkuk, IRAQ
[2]Collage of Agriculture & Forestry, University of Musel, IRAQ
[3]Master Student, Collage of Agriculture, University of Kirkuk, IRAQ
*Corresponding author: osama.alzaidbagy@yahoo.com

Abstract

This study investigated the effect of using different concentrations of IBA and different types of media included (sand, non- treated bark, non treated bark + sand 1:1, treated bark , treated bark + sand 1:1, peatmoss, peatmoss + sand 1:1) on rooting and growth cuttings of *Ficus nitida* length & diameter of longest root, root's number, percentage of rooting, roots dry weight, shoot length & diameter, number of & leafs area, shoots dry weight, leaves contents of (Nitrogen, Carbohydrate, Total content of chlorophyll & C/N ratio) as indicators of effects. The treatment of IBA increase in both of most root & shoot's growth prosperities, specially at 2000 mg.L-1. The cultivation and growth of cuttings in the Pine bark media significantly increased the average of root length, diameter & rate of Nitrogen in leaves. Using (treated Pine bark + sand 1:1) media caused an increase in the leaf area, carbohydrates rate in leaves and the ratio of C/N.

Key Words: IBA, *Pinus brutia* bark, Agriculture media, *Ficus nitida* cutting

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Characteristics of Raw Materials Used and using by Non-Agriculture Areas in the Brick-Tile Industry in the Eastern Mediterranean Region

Bilge VURAL[1*], Kadir YILMAZ[1]

[1]Kahramanmaras Sutcu İmam Univ., Faculty of Agri., Dept. of Soil Sci. and Plant Nutrition, TURKEY
*Corresponding author: vuralbilge@hotmail.com

Abstract

In the last century, when the settler was living at a high level, the agricultural potential of the land began to be used for non-agricultural purposes. One of these uses is the use of agricultural soils in brick and tile industry. In this study, possibility of meeting raw material used in brick tile factories located in Eastern Mediterranean Region from non-agricultural areas was searched. For this purpose raw material samples were taken from factories in the region and from alternative agricultural areas. The physical, chemical and technological properties of raw materials were examined. As a result of the chemical analysis made, it was found that the organic matter content of the soil is very low and the lime content is high. The pH and salt content of the soils are generally moderate alkaline and medium salinity. When the physical properties of the samples were examined, it was found that the sandy loam, sandy clay loam and clay loam of the soil were found. When the liquid limit, plastic limit and plasticity index properties of soils are examined from the technological properties of soils, it has been determined that the soil is suitable for use in brick production. In the direction of this data, the raw materials used in the brick tile industry can be obtained from the non-agricultural areas.

Key Words: Clay, Brick, Eastern Mediterranean

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Effects Class A-Pan at 1.00 Irrigation Water Level of Nitrogenous Fertilizer Applications with Fertigation Method on Sugar Beet Yield

Naci DEMİRCİ[1*], Yusuf IŞIK[1], Nihal GÖKSU[1]

[1]Soil, Water and Deserting Control Research Institute, Konya-TURKEY
*Corresponding author: naci.demirci@tarim.gov.tr

Abstract

Konya is ecologically appropriate region for the cultivation of sugar beet (*Beta vulgaris* L.) which is one of the important industrial plants. Due to the high demand for irrigation water of sugar beet and the limited water resources in the region, drip irrigation system, which is used irrigation water more effectively, has to become widespread and fertigation techniques need to be used in fertilization. In this study, it was aimed to determine the amount of nitrogen fertilizer which should be given to sugar beet grown by using drip irrigation system and fertigation techniques together with irrigation water. The research was carried out between 2013 and 2015 at the Karapınar Research Center, Soil Water and Combating Desertification Research Institute.
Five different nitrogen doses as of 0.0, 8.0, 16.0, 24.0 and 32.0 ppm were applied with irrigation water at 1.00 times more irrigation water level of evaporation from open vessel (Class A-pan). Sugar beet root yields were obtained as 5342, 7911, 9849, 10798 and 10956 kg da^{-1}, respectively, as the average of three trial years. As a result of the regression analysis, the relationship between nitrogen density and sugar beet root yield was found to be statistically significant relative to the 1% possibility limit and it can be seen that this relationship can be expressed by $Y= 5319.5 + 383.3X – 6.48X^2$ According to this, irrigation water has a nitrogen concentration of 29.5 ppm and an optimum nitrogen concentration is 28.9 ppm for the highest yield.

Key Words: Fertigation, sugar beet, nitrogen

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Applied to Agriculture Soil Gyttja: Effect on the Atterberg Limits and Some Physical Parameters

Zekeriya KARA[1*], Tuğrul YAKUPOĞLU[2], Sertan SESVEREN[3], Serdar SOLAK[1], Kadir SALTALI[1]

[1]Kahramanmaraş Sütçü İmam Univ., Faculty of Agriculture, Dept. of Soil Sci. and Plant Nutrition-TURKEY
[2]Bozok Univ., Faculty of Agriculture, Dept. of Soil Sci. and Plant Nutrition, Yozgat-TURKEY
[3]Kahramanmaraş Sütçü İmam Univ., Faculty of Agriculture, Department of Biosystems Engineering-TURKEY
*Corresponding author: zkara@ksu.edu.tr

Abstract

Organic materials affect positively the physical properties of the soils. The aim of this study was to investigate the effects of gyttja, a soil conditioner, on some physical properties of clay loam soil structure. Experiment was carried out in greenhouse conditions, and four (% 0, 5, 10 ve 20 w/w) different doses of gyttja with three replications were applied to the soil in plastic pots. After five months of incubation period, the experiment was terminated and organic matter (OM), liquid limit (LL), plastic limit (PL), volume weight (ρb) and coefficient of linear extensibility (COLE) analyzes were performed for each control and test pot. According to the results, decrease in ρb and COLE values but increase in PL and LL values were observed in parallel with the increase of the gyttja doses. The effect of gyttja doses on measured variables was found to be significant at P <0.001 level. The averages of the measured variables differed from the Duncan test over the application doses ($\alpha = 0.05$). Statistically there is no difference dosage between 5 and 10% for LL and ρb, 10 and 20% for PL, and 0 and 5% for COLE. These results indicated that the gyttja can be applied to soils at dosage 5-10% for improvement some physical properties of the soils.

Key Words: Gyttja, soil, physical properties, improvet

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Relationship between Some Soil Properties and Erodibility of Agricultural Lands Close the Suphan Mountain

Zekeriya KARA[1*], Tuğrul YAKUPOĞLU[2], Ekrem BALLI[1], Kadir SALTALI[1]

[1]Kahramanmaraş Sütçü İmam Univ., Faculty of Agriculture, Dept. of Soil Sci. and Plant Nutrition-TURKEY
[2]Bozok Univ., Faculty of Agriculture, Dept. of Soil Sci. and Plant Nutrition, Yozgat-TURKEY
*Corresponding author: zkara@ksu.edu.tr

Abstract

Physical, chemical and mineralogical properties of volcanic soils differ from other soils. In this study, some physical properties of agricultural lands between Süphan Mountain and Bulanik (Mus-Turkey) province were investigated to understand erodibility characteristics. For this purpose, 30 representative samples were taken from 15 point and two depths, the top (0-30) and the bottom (30-60), of soil. The results showed that samples near the surface (0-30) of soils were varied between 13-41.4% clay, 56-58.4% sand, 1.41-4.10% organic matter content, 28.1-80.6% aggregate stability and 3.22-18.54% dispersion ratio. While samples of lower depth (30-60) of soil, values were varied between 5.5-38.6% clay, 34.1-84% sand, 0.73-4.05% organic matter content, 32.7-83.6% aggregate stability and 6.36-22% dispersion ratio. The aggregate stability of surface soils showed a positive correlation with organic matter (R^2= 0.74) and a negative correlation with dispersion ratio (R^2= 0.59) variables. The aggregate stability of lower depth soils showed a negative correlation with dispersion ratio (R^2= 0.73) and sand (R^2= 0.82) variables. Although the surface soils are slightly textured, the high stability of the aggregate may be due to the influence of organic matter, clay content and oxide compounds in the soil.

Key Words: Aggregate, Erodibility, Parent material, Soil

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Using Contamination Indices for Assessments of Heavy Metals Status of Çarşamba Fan Soils in Çumra Plain

H. Hüseyin ÖZAYTEKİN[1*], Mert DEDEOĞLU[1]

[1]Selcuk University Agricultural Faculty, Department of Soil Science and Plant Nutrition, Konya-TURKEY
*Corresponding author: hhuseyin@selcuk.edu.tr

Abstract

The soils on the Çarşamba River alluvions, which form the Çumra Plain in Konya, have very important agricultural potential and are used for intensive agricultural production. In this study, some heavy metal contents of the soil in question and their source was evaluated using with various indices such as enrichment factor (EF), Geoaccumulation Index (Igeo), Contamination index (Cf), Pollution index (PI), Pollution Load Index (PLI), contamination degree (Cd) and the modified contamination degree (mCd). In the study, Ni, U, Cu, Pb, Cr and Cd are taken into consideration. When the obtained result to by evaluated the cumulative effect of metal pollution load index (PLI), the contamination degree (Cd) and modified Contamination Degree (MCD), pollution based on the index is determined to be too low. When metals evaluated separately for metals Ni and U a medium enrichment, for other metals a low enrichment has been identified. Geoaccumulation index showed no impurities for all metals. When the pollution factor (PI) are evaluated only emerges pollution has reached the intermediate level Cr other metals contamination levels. Pollution Index (Cf) is N, U, Cr contamination in the intermediate level, for other metals showed a low level pollution. All these results indicate that no significant pollution of individual and cumulative in the study area.

Key Words: Heavy Metal, Pollution, contamination, contamination index

Acknowledgements: This study was taken from a research project supported by Selçuk University (S.U.) BAP Office (Coordinating Office of Scientific Research Projects, Project No:11201024). The authors would like to thank ‘‘the S.U.-BAP staffs’’.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of C:N Ratio of Senyuva Plain Mazıdağı–Mardin

Munzur ABAK[1], Erdal SAKİN[1*]

[1]Dept. of Soil Science and Plant Nutrition Agriculture Faculty Harran Univ., Şanlıurfa-TURKEY
*Corresponding author: esakin@harran.edu.tr

Abstract

Soil plays an important role in global carbon cycle in arid and semi-arid regions. Small changes that occur in surface soil where most of the carbon stock is contained affect atmospheric carbon dioxide (CO_2). Previous studies have focused on carbon (C) and nitrogen (N) stocks of soils because of increases in atmospheric carbon dioxide (CO_2) and terrestrial ecosystems with wide N storages. The goal of this study was to determine C and N content with C:N ratio of the Senyuva Plain in Mazidagi – Mardin. As a results of the analyses made on the soils samples, the amount of organic matter (OM) was found 0.54±0.25. The nitrogen content of the soils was determined 0.07±0.024. C:N ratio of the soils was found 6.76±1.98. As a results, C:N ratio was found to low because of the presence of region in arid and semi-arid climatic, high temperature and low precipitation, the use of agricultural unconsciously (extreme chemical fertilizers, mono cultural production and intensive agriculture techniques). In order to balance or increasing C:N ratio, should be use organic fertilizer such as mixed of harvest wastes to soil, give important to no – tillage.

Key Words: green manure, carbon, nitrogen, climate change

Acknowledgements: This research was supported by The HUBAK-15079.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Different Biochar on the Carbon Sequestration

Erdal SAKİN[1*], Ali SEYREK[1]

[1]Dept. of Soil Science and Plant Nutrition Agriculture Faculty Harran University, Şanlıurfa-TURKEY
*Corresponding author: esakin@harran.edu.tr

Abstract

It is very important that agricultural residues are assessed as biochar (BC) in the countries with agriculture. Therefore, the effect of BC types from application almond shell (ASBC), orange shell (OSBC), tobacco residue (TRBC), pomegranate shell (PSBC), wheat residue (WRBC) and cotton residue (CRBC) on the carbon sequestration was investigated in this study. For this reason, soil samples taken from the land passed to air dried and < 2 mm sieve. Taken from 200 g soil sieved was transferred to 2 L PVC container, and were added %0.5, %1 and %1.5 of the BC, and thoroughly mixed with soil. Soil samples were held at 50% of the soil water content. The experiment was carried out the under control condition and was 24±2 °C the ambient temperature in the laboratory. The amount of soil CO_2-C flux was measured by NaOH in the weekly. There was a significant difference in the 5% error level among the groups, in terms of CO_2-C emission effect ($p<0.01$). The effect of interaction dose and group * dose is no significant. It was found that OSBC has the highest average, in term of CO_2-C flux according to Duncan multiple comparison tests. ASBC, CWBC and TWBC types were in the same group. PSCB has been found to have the smallest average. When the samples CO_2-C compared the control group maximum CO_2-C flux was seen OSBC type while the lowest in PSBC. The study found that PSCB is cause to low of CO_2-C flux and more C storage. For this reason, PSCB is recommended the BC application.

Key Words: different biochar, carbon sequestration, carbon flux

Acknowledgements: This research was supported by The HUBAK-17069.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Microbial Biomass Carbon and Nitrogen Amount of Soils under Different Land Uses: A Case Study of Osmanbey Campus

Erdal SAKİN[1*], İbrahim Halil YANARDAĞ[1]

[1]Dept of Soil Science and Plant Nutrition Agriculture Faculty Harran University, Şanlıurfa-TURKEY
*Corresponding author: esakin@harran.edu.tr

Abstract

Soil organic matter (SOM) plays an important role in the biogeochemical cycling in terrestrial ecosystems. Microbial biomass which one of the soil quality parameters, significantly affects the mineralization of SOM in mobile and immobile fraction, including bacteria, fungi and algae, temperature, nutrients and water availability. Also, it is an essential source of available carbon and nitrogen for microorganism and plants. This study was conducted on different lands uses (cultivated, grassland, forest, wild pistachio tree (*Pistacia mutica*), vineyards and pomegranate) at Osmanbey Campus of Harran University. Soil samples were weighted and transferred plastic tubs for further microbial biomass carbon (MBC) and microbial biomass nitrogen (MBN) analyses. Taken soil samples in the tubs were brought to 55% of field capacity (FC). The soil total nitrogen contents were ranged 0.5 to 4.32% (grassland-meadow). Soil organic C content was lowest in cultivated land (0.81 to 1.06%) and the highest in meadow land (3.17-3.25%). From the results, MBC contents were observed the highest in the pastureland (393.5-534.0 mg kg-1), and in the lowest grassland in (28.2-56.3 mg kg-1). Also, the maximum amount of MBN was found in meadow (31.38-35.97 mg kg-1) and at the least grassland (7.0-8.6 mg kg-1). An effect of difference land uses capacity on the MBC and MBN was statistically significant. There was a negative correlation between MBN and MBC with pH and CaCO3 as a positive correlation with EC.

Key Words: Soil quality parameters, Different land uses, SOC, MBC and MBN

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Assessing the Impact of Biochar Application on Soil Quality Using Linear Scoring Functions

A. Volkan BİLGİLİ[1*], Salih AYDEMİR[1], Osman ALTUN[1],
E. Pınar AYAYDIN (SAYĞAN)[2]

[1]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
[2]Olive Research Institute, İzmir-TURKEY
*Corresponding author: vbilgili@harran.edu.tr

Abstract

Biochar is a significant soil organic carbon source which is crucial for soil quality. Soil quality degradation problems exist in million hectares areas wordwide thus the results of researches testing the effects of amendment materials such as biochar on soil qualities are rather significant. Soil quality is an integrative approach combining soil physical, chemical and biological properties and it can be best evaluated using Soil Quality Indexes. The goal of this study was to assess the qualities of soil parcels treated with three different types of biochars obtained locally available crop residues (Pistachio shells, Corn corbs and stovers and cotton stalks) at different doses (0%, 2 % and 4 %). The soil quality parameters used to obtain soil quality indexes included soil bulk density, soil organic matter, total nitrogen, soil porosity, saturated soil hydraulic conductivity, soil agregate stability and plant available water content. Principal Component (PCA) analyses were performed on in order to determine Minimum Data Set (MDS). Soil Quality Indexes (SQI) belonging to each parcels were obtained using linear scoring functions. Significance of the impact of biochar treatment on SQIs were assessed using Anova statistics ($p < 0.05$). Overall, biochar applied parcels had better soil qualities providing higher soil quality indexes compare to control parcels. Depending on the type of biochar and application doses SQIs increased up to 8 %. The results indicated that biochar can be an alternative to increase qualities of soil in semi arid areas such as the Harran Plain.

Key Words: Soil quality, biochar, PCA analyses, soil quality index, Anova statistics

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparing of Carbon Emission at Different Soils Depths

Erdal SAKİN[1*], M. Fatih DİLEKOĞLU[2], Ali SEYREK[1], Hamza YALÇİN[3]

[1]Department of Soil Science and Plant Nutrition of Agriculture Faculty, Harran University, Şanlıurfa-TURKEY
[2]Department of Environmental Engineering of Engineering Faculty, Harran University, Şanlıurfa-TURKEY
[3]Department of Animal Science of Agriculture Faculty, Harran University, Şanlıurfa-TURKEY
*Corresponding author: esakin@harran.edu.tr

Abstract

The carbon which is absolute essential element that it's decompose with is emerged various compounds. Carbon is necessary for the continuation for life and energy sources of microorganism in the soils at the same time can be both destructive and constructive. The effect of carbon on the climate change has become one of the dangerous gases. This study was conducted to with interest increasing atmospheric CO_2 which especially at the results of agricultural activities. For this reason, flux CO_2-C in the soils is measured by soda-lime method to the same properties and different depth in the Harran Plain. Soil temperature and moisture were measured at the 0-5 soil depth. CO_2-C flux of the soil was compared with soil moisture and temperature at both different soil depths (shallow-deep soils). An independent t-test was performed to the data determine the difference between shallow and deep soils of flux CO_2-C. Flux of CO_2-C was significantly difference the mean (10.28 g CO_2-C m-2 week-1) of the shallow soil than mean (9.26 g CO_2-C m-2 week-1) of the deep soil ($p=0.000$). Flux CO_2-C in the shallow soils were not significant effect on the 5 cm soil depth when it made to regression by the enter method ($p>0.05$). Flux CO_2-C in the depth soils were not significant effect on the 0-5 cm deep soil when it made to regression by the enter method ($p>0.05$). In both cases, a more accurate model was obtained by using the backward regression method.

Key Words: global warming, microbial activity, shallow-depth soil

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Foliar Applied Iron and Urea of Individual/Combination on Plant Growth, Iron Nutrition and Grain Yield of Maize Grown at Harran Plain

Cengiz KAYA[1*], Abdullah EMİROĞLU[2]

[1]Harran University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Şanlıurfa-TURKEY
[2]Harran Univ., Institute of Science and Tech., Master of Science in Soil & Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: c_kaya70@yahoo.com

Abstract

Despite the fact that iron is an essential nutrient for all plants, deficiencies of iron can be seen more quickly in corn plants growing rapidly. In this study, the effects of iron sulphate with or without urea on plant grown and grain yield of maize plant grown in Harran Plain were investigated. The experiment was designed at randomized blocks design with 3 replications, Pioneer T38 hybrid variety was used and necessary fertilizers were made according to soil analysis results. Throughout the research, the content of Fe in leaves, maximum fluorescence and SPAD measurements and fresh and dry weights and grain yield were determined. According to the results of the research; The amount of leaf iron increased with the application of iron with and without urea. When applied with the highest dose of Fe with urea, the highest iron content was obtained in the plant. The application of iron with urea resulted in increases in maximum fluorescence value, but increased iron application did not affect the maximum fluorescence value. Application of 0.30% iron sulfate alone or together with urea increases plant wet-dry weight and corn grain yield compared to control application, but The application of 0.60 percent iron sulfate alone or in combination with urea has reduced both plant age-dry weight and corn grain yield. On the other hand, application of iron sulphate with urea increased leaf SPAD readings compared to control, but the SPAD readings were reduced with higher iron doses.

Key Words: Maize, Iron, Urea, Maize Yield

Acknowledgements: This research was supported by Harran University/ Turkey (HUBAK-16171).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Combined Urea and Zinc Foliar Application on Plant Growth and Yield Formation in Maize Grown at Field Conditions

Cengiz KAYA[1*], İzzettin BİLEN[2]

[1]Harran University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Şanlıurfa-TURKEY
[2]Harran Univ., Institute of Science and Tech., Master of Science in Soil & Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: c_kaya70@yahoo.com

Abstract

Zinc (Zn) deficiency is a common micro element deficiency causing problems in plants, human and animals. Zinc deficiencies results in declines in crop yields and the feeding quality of plant products. Zinc also plays a vital role in protein synthesis in plants and in the functions of many enzymes. In zinc deficient plants, it is known that protein synthesis slows down and nitrogen (N) forms such as amino and amino acids are accumulated in the plant. This relationship between zinc and N was tested under different Zn and Urea conditions. For this purpose, three different doses of zinc in the field trials has been set up (0%, 0.25 and 0.50) ZnSO4 7H2O was applied 3 times during the vegetation period of corn. Different doses of zinc were combined with 1% solution with or without urea and applied to different plots. Decalb - 6101 corn variety was used in the experiment. Effects of foliar application of zinc and urea on the fluorescence values, fresh- dry matter yield, grain yield and SPAD values were determined under field conditions. According to the research results, urea doses applied to the plant increased the amount of zinc and nitrogen in the plant. Based on the applied zinc-urea doses, the increasing zinc ratio increased the fluorescence value by a certain amount; but the increased urea ratio at the current doses increased the fluorescence value up to a certain point (0.25% Zn + 1%) and then decreased the fluorescence value of the plant leaf relative to the increased rate of urea. Increased zinc-urea doses increased plant fresh and dry weight and grain yield. Increased zinc-urea affected the SPAD values. At the first reading, the SPAD value ranged from 58 to 60; In the second reading, the SPAD values range from 60 to 62.

Key Words: Corn, Zinc, Urea, Yield, SPAD

Acknowledgements: This research was supported by Harran University/ Turkey (HUBAK-16172).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Combined Urea and Zinc Foliar Application on Plant Growth and Yield Formation in Cotton

Cengiz KAYA[1*], Cafer ÖNER[2]

[1]Harran University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Şanlıurfa-TURKEY
[2]Harran Univ., Institute of Science and Tech., Master of Science in Soil & Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: c_kaya70@yahoo.com

Abstract

Cotton has been extensively cultivated in irrigable areas in the Southeastern Anatolia Region and is a crop which has significant contributions to the regional economy. The soil of this region generally has a calcareous structure. For this reason, Zinc (Zn) deficiency is frequently observed in the plants growing in the region due to lime interactions. In this study, It has been tried to overcome the Zn deficiency of the plant by applying Zn and urea to the cotton field which is already grown in Mardin Kızıltepe district. For this reason, an experiment consisting of 5 application topics and 3 repetitions has been established according to the design of random blocks. According to the research result, zinc is found in insufficient levels in control plants, which were not received zinc. Furthermore, compared to control treatment, leaf Zn contents of plants in both Zn-treated and urea treated plants were increased. Moreover, as a result of application of urea with Zn application, it was observed that plants had about 2 times increase in leaf Zn contents. Compared with the control application, Zn and the Zn + urea application increased cotton yield. It has been observed that the application of Zn + urea increases the yield of cotton mass more than only Zn application. As a result; Zn and urea in combination increased the content of Zn in the plant more than Zn application alone, resulting in increased cotton yield. It has been determined that the yield of cotton mass can be increased by application of 0.25% Zn + 1% urea in the district of Mardin Kızıltepe, which has semi-arid ecological characteristics.

Key Words: Cotton, Zinc, Urea, Cotton Yield

Acknowledgements: This research was supported by Harran University/ Turkey (HUBAK-16168).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparing of Carbon Emission of Depth and Shallow Soils

Erdal SAKİN[1*], M. Fatih DİLEKOĞLU[2], Ali SEYREK[1], Hamza YALÇIN[3], E. Didem SAKİN[4]

[1]Department of Soil Science and Plant Nutrition of Agriculture Faculty, Harran University, Şanlıurfa-TURKEY
[2]Department of Environmental Engineering of Engineering Faculty, Harran University, Şanlıurfa-TURKEY
[3]Department Animal Sciences of Agriculture Faculty, Harran University, Şanlıurfa-TURKEY
[4]GAP Agricultural Research Institute, Ministry of Food, Agriculture and Livestock, Şanlıurfa-TURKEY
*Corresponding author: esakin@harran.edu.tr

Abstract

The carbon which is absolute essential element that it's decompose with is emerged various compounds. Carbon is necessary for the continuation for life and energy sources of microorganism in the soils at the same time can be both destructive and constructive. The effect of carbon on the climate change has become one of the dangerous gases. This study was conducted to with interest increasing atmospheric CO_2 which especially at the results of agricultural activities. For this reason, flux CO_2-C in the soils is measured by soda-lime method to the same properties and different depth in the Harran Plain. Soil temperature and moisture were measured at the 5 to 10 soil depth. CO_2-C flux of the soil was compared with soil moisture and temperature at both depth soils. An independent t-test was performed to the data determine the difference between shallow and depth soils of flux CO_2-C. Flux of CO_2-C was significantly difference the mean (1.83±0.45) of the depth than mean (1.47±0.49) of the shallow soils ($p=0.000$). Flux CO_2-C in the shallow soils were not significant effect on the 5 cm soil depth when it made to regression by the enter method ($p>0.05$). Flux CO_2-C in the depth soils were not significant effect on the 5 to 10 cm soil depth when it made to regression by the enter method ($p>0.05$). In both cases, a more accurate model was obtained by using the backward regression method.

Key Words: global warming, microbial activity, shallow-depth soil

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

An Investigation of Interrelationship Between Aminolevulinic Acid and Salinity Stress in Nine Different Maize Cultivars

Cengiz KAYA[1*], Muhammed ASHRAF[2], Osman SÖNMEZ[3], Tahir POLAT[4]

[1]Harran University, Faculty of Agriculture, Dept. of Soil Science & Plant Nutrition, Şanlıurfa-TURKEY
[2]Pakistan Academy of Science, PAKISTAN
[3]Univ. of Erciyes, Faculty of Agriculture, Dept. of Soil Science & Plant Nutrition, Develi/Kayseri-TURKEY
[4]Harran University, Faculty of Agriculture, Department of Field Plants, Şanlıurfa-TURKEY
*Corresponding author: c_kaya70@yahoo.com

Abstract

A germination experiment was designed to identify appropriate doses of aminolevulinic acid (ALA) which could lessen the deleterious effects of salt on germination of seeds of nine different maize cultivars and to screen all available maize cultivars for their differential tolerance to salt stress (100 mM NaCl). The seeds of nine maize cultivars were soaked for 24 h in solutions containing five levels of ALA (5, 10, 15, 20 ve 25 mg/L). Salinity stress reduced germination percentage, lengths of plumules plus radicles, fresh weight of germinated seeds and soluble protein content, but increased time for 50% seed germination and total soluble sugars. Salinity stress was less detrimental on tested parameters in DK 5783 and more detrimental in Apex 836. Based on the results obtained from the germination experiment, maize cultivar DK 5783 was found to be the most salt tolerant and Apex 836 as the most sensitive cultivar. ALA increased fresh weight of germinated seeds in most cases, but it significantly reduced soluble sugar in hypocotyls in some cases. Also, of six ALA levels used, there seemed to be no consistent dose being more effective, but in a few cases, ALA at 20 mg l-1 doses seems to be more effective in most cases for some cultivars. It can be concluded that tolerances of maize cultivars to salinity stress differed and effectiveness of ALA as seed treatment is dependent on doses and cultivars and ALA was effective in most cases.

Key Words: Seed germination; Salinity stress; maize; Aminolevulinic acid

Acknowledgements: This research was supported by The Scientific and Technical Research Council of Turkey (TOVAG-112O375).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Ways to Increase the Potential of Şanlıurfa Agriculture

Ali Rıza ÖZTÜRKMEN[1*], Mehmet Ali ÇULLU[1]

[1]Harran University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: arozturkmen@harran.edu.tr

Abstract

The distribution of agricultural land area of our province in Turkey, 4.1% in has. After Konya and Ankara in Turkey ranks third. The Agricultural Production Value of İlimizin is approximately 6.1 billion TL. At present, the irrigated area is about 4.5 million decares. If the GAP project is completed, the amount of irrigated area in Şanlıurfa province will be 8.3 million decares (8.349.000). The number of registered farmers in Çanlıurfa province is 58.852. In 2016, our country; 45% of the cotton production, 8% of the wheat production, 36% of the lentil production, 11% of the barley production, 15% of the maize production and 38% of the peanut production. Sanliurfa, GAP bit when Turkey and the Middle East will be one of the agricultural centers.
What should be done to increase this agricultural potential?
• Soil Conservation and Land Use Law should work well
• Agricultural Supports must be clear and planned,
• Irrigation and Energy investments planned in GAP should be completed
• Standard to use electric energy in the water.
• Agricultural systems resistant to drought should be determined,
• Good and economical water use should be supported,
• Land consolidation studies should be completed
• The rights of farmers who are entitled by Law no. 3083 should be granted.

Key Words: Şanlıurfa Agriculture, GAP Project, Irrigation, Drought

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Quality of Conversion Waters Used in Harran Plains Irrigated

Ali Rıza ÖZTÜRKMEN[1*], İlknur SÜPÜRKECİ YARMAÇ[2]

[1]Harran University Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
[2]Harran Univ., Graduate School of Natural and App. Sci., Dept. of Soil Sci. and Plant Nut., Şanlıurfa-TURKEY
*Corresponding author: arozturkmen@harran.edu.tr

Abstract

With the increase in population, the consumption of water and the need for water in the future increased. For this reason, water saving methods should be found and measures should be taken. Irrigation is the most important factor limiting crop production. Increasing the irrigable land increases the need for agricultural water. Therefore, in order to meet the increasing water need, water quality should be used and the quality water returning from the irrigation should be used again. Given the amount of pollutants in the drainage and drainage waters that return from irrigation, the quality of the drainage waters should be improved and reused and the quality values should be monitored during use.
The irrigation initiated in 1995 under the GAP project was gradually increased to 147.887 hectares of area. Because of the lack of sufficient water reaching to the end of Harran Plain, underground wells were opened and return flows water obtained from drainage was started to be mixed with irrigation water with the help of regulator. Watering with drainage canals is common in Harran Plains. This has increased both irrigation efficiency and reduced the amount of water flowing out of the plain by drainage. In this study, EC, pH and SAR analyzes were carried out by taking samples from the recycling waters used in the irrigation. The EC values of the water samples collected during the winter months were higher than the EC values of the samples collected from the summer months and it was concluded that these waters could be evaluated in the water when evaluated to the analysis results.

Key Words: Return flows water, Harran Plain, irrigation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Poppy Cultivated Area Using Remote Sensing

Levent BAŞAYİĞİT[1*], Sinan DEMİR[1]

[1]Süleyman Demirel Univ., Faculty of Agriculture, Dept. of Soil Science and Plant Nutrition, Isparta-TURKEY
*Corresponding author: leventbasayigit@sdu.edu.tr

Abstract

Single Convention on Narcotic Drugs and the Convention on Psychotropic Substances remain the basis for international efforts in the control of narcotic drugs and psychotropic substances, and that strict implementation both by Governments and by the international control organs of the United Nations. Turkey is a party to these international agreements. For this reason, it is necessary to limit the cultivation of poppy and to monitor the cultivated parcels.

This study was conducted to developed an approach for determination of poppy cultivated areas using remote sensing technique. QuickBird-2 satellite image was used in the study. The software of Imagine was used processing the satellite image and performing the classification. A variety of classification methods were performed on the satellite image. The accuracy of classification methods was compared. It was found that the poppy cultivated area was found high accuracy with a supervised classification method. The use of satellite imagery provided a unique opportunity for determination and monitoring of the poppy area cultivated legally.

Key Words: Image processing; Papaver Somniferum; QuickBird-2

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Topographic Characteristics on the Volcanic Soil Sensing

Levent BAŞAYİĞİT[1*], Fadime ÖZOĞUL[1]

[1] Süleyman Demirel Univ., Faculty of Agriculture, Dept. of Soil Science and Plant Nutrition, Isparta-TURKEY
*Corresponding author: leventbasayigit@sdu.edu.tr

Abstract

Volcanic soils are natural resources that require special application in their management due to their characteristics. For this reason, researchers are intensively working to determine the characteristics of volcanic resources in the world. A much part of the soils in Turkey formed on young volcanic parent materials. To understand the behavior of this soils under the different application it is necessary to do more research in Turkey.
The aim of this study is to determine how the topography influences the properties of soils which formed on a volcanic parent material. For this purpose, six soil profiles located on three different elevation classes and views were excavated and, described according to the soil taxonomy. Soil samples were collected from twenty-two horizon. Then soil samples were analyzed for determination of andic soil properties. The relationship between the topographical characteristic and andic soil properties were searched.
The morphological appearance of the volcanic soil in the area was affected from the position of the land, elevation, and views. But the variety of the landscape in the confined distance was not sufficient to constitute the andic soil characters by itself.

Key Words: Andosols; andic soil properties; volcanic parent material

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Use of Tillage Systems and Cover Plants for Sustainable Agriculture in Fruit Gardens

Ali Rıza ÖZTÜRKMEN[1*], Ahmet ALMACA[1]

[1]Harran University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: arozturkmen@harran.edu.tr

Abstract

Recently, alternative methods of soil treatment have been explored due to economic production demands, developing environmental awareness and the need to save energy. Therefore, protective soil treatment methods, which are alternative to traditional soil treatment, have become widespread. Covering plants are plants which are not cultivated economically, and which are planted between rows in fruit gardens.
In sustainable agriculture, environmental factors such as soil, water and air are the basic principles of production by protecting human, plant and animal health. It aims at increasing productivity for sustainable agriculture, protecting land, maintaining ecological balance and preserving natural balance. It has been seen in studies that over-soil processing destroyed the soil structure, reduced the amount of organic matter, and endangered the sustainability of production. For these reasons, the introduction of protective soil treatment systems in sustainable agriculture and the use of cover plants will be of great help in resolving potential problems.
Protective tillage and the use of suitable cover plants have been proven by studies that have resulted in increasing the amount of organic matter, improved soil structure, weed, disease and harmful effects.
The benefits of protective soil treatment and covering plants will emerge for a long time. At least 3 years is required for the change of soil structure, increase of organic matter and loss of weed effect.

Key Words: Sustainable agriculture, Protective tillage, Covering plants

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Mapping Potential Land Use Capability Classes of Stony/Rocy Volkanic Lands by Using GIS Analysis

Ahmet KIRATOĞLU[1], Mehmet Ali ÇULLU[2*], Ali Rıza ÖZTÜRKMEN[2], Aybike YILDIRIM[1], Aydın AYDEMİR[1]

[1]Harran Univ., Graduate School of Natural and App. Sci., Dept. of Soil Sci. and Plant Nut., Şanlıurfa-TURKEY
[2]Harran University, Agricultural Faculty, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: macullu@harran.edu.tr

Abstract

Between Diyarbakır and Şanlıurfa boundary, Southeastern Turkey, there are wide volcanic areas that have present rock and stone on the soil surface and in the profile. Because of heavy stone and rock on the surface and soil profile, these areas can not be used for agricultural purposes. The heavy stone and rock present at the soil surface and profile prevent to plow and sow the seed. However, when these lands reclaimed they has a high agricultural potential.

The aim of this study is to map the actual and potential land capability classes of 15621 hectares of stony/rocky lands located at the Siverek town. In order to map the actual land capability classes (LCC), contours of 1:5.000 scaled map were digitized and slope map was derived and combined with satellite images. According to slope map and satellite image interpretation, 4 different profiles location was excavated and defined. LCC map was drown by walking at the lands using satellite and slope combination interpretation and profile definition data.

Actual and potential LCC map derived by using profile description and land characteristics were analyzed in the GIS software.

Analysis results of GIS showed that 72% of LCC VI can be potentially changeable to LCC IV and 4.46 % of LCC V can be changeable to LCC II-III.

Key Words: Volcanic lands, Potential Land Capability Classes, GIS Analysis

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Role of Humic Acid in Improving Germination of Seed of Maize under Saline Condition

Cengiz KAYA[1*], Muhammed ASHRAF[2], Osman SÖNMEZ[3], Tahir POLAT[4]

[1]Harran University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Şanlıurfa-TURKEY
[2]Pakistan Academy of Science, PAKISTAN
[3]Univ. of Erciyes, Faculty of Agriculture, Dept. of Soil Science & Plant Nutrition, Develi, Kayseri-TURKEY
[4]Harran University, Faculty of Agriculture, Department of Field Plants, Şanlıurfa-TURKEY
*Corresponding author: c_kaya70@yahoo.com

Abstract

It was aimed to screen nine cultivars of maize for their differential tolerance to salt stress and also identify the most appropriate doses of humic acid (HA) mitigating deleterious effects of salt on germination of seeds of nine different maize cultivars. The seeds of nine maize cultivars were soaked for 24 h in solutions containing five levels of HA (70, 80, 90, 100 and 110 mg l^{-1}). Germination percentage, lengths of plumules plus radicles, fresh weight of germinated seeds and soluble protein content were reduced by salinity stress. However, time for 50% seed germination and total soluble sugars were increased by salinity stress. Saline stress was less detrimental on tested parameters in DK 5783 and more detrimental in Apex 836.. HA increased fresh weight of germinated seeds in most cases, but it significantly reduced soluble sugar in hypocotyls mostly. Also, of five HA levels used, there seemed to be no consistent dose being more effective, but in a few cases, HA at 100 mg l^{-1} doses seems to be a bit more effective mostly. It can be concluded that tolerances of maize cultivars to salinity stress differed and effectiveness of HA as seed treatment is dependent on doses and cultivars.

Key Words: Seed germination; Salinity stress; Maize; Humic acid

Acknowledgements: This research was supported by The Scientific and Technical Research Council of Turkey (TOVAG-112O375).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Different Doses of Boron Fertilizer Application on Yield and Nutrient Contents of Sunflower (*Helianthus annuus* L.) Plants

Adem GUNES[1*], Erman BEYZİ[2], Müdahir OZGUL[3], Ayhan HORUZ[4], Metin TURAN[5]

[1]Department of Soil Science and Plant Nutrition, Faculty of Agriculture, Erciyes University, Kayseri-TURKEY
[2]Department of Field Crops, Faculty of Agriculture, Erciyes University, Kayseri-TURKEY
[3]Department of Soil Science and Plant Nutrition, Faculty of Agriculture, Ataturk University, Kayseri-TURKEY
[4]Dept. of Soil Science and Plant Nutrition, Faculty of Agriculture, Ondokuz Mayıs Univ., Samsun-TURKEY
[5]Dept. of Genetics and Bioengineering, Faculty of Eng. and Architecture, Yeditepe Univ., Istanbul-TURKEY
*Corresponding author: adem_gunes25@hotmail.com

Abstract

Boron is essential elements for plant growths. The lack of nutrients and toxicity are among the most common nutrient elements because there is very little difference between the levels of soil boron which causes deficiency or toxicity in plants, with very large differences between plants in terms of borate reactions. So, this study was conducted in low efficiency soil boron availability soil which has high lime content. To determine effects of boron application on sunflower plant (*Helianthus annuus* L.) growth and nutrient content according to trial design of completely randomized design with four replications. In the experiment, boric acid at the doses of 0, 200, 400, 800 and 1200 gr da^{-1} was used. in doses of 0, 200, 400, 800, 1200 gr da^{-1} was used as boric acid. Plant growth care such as irrigation, weed control and other controls are made routinely. After developing period, the plants are harvested from the soil surface. The total nutrients contents and intake nutrient element amounts are determined in plant samples. According to result of research; the boron applications are positive side effected on dry matter productivity and nutrient mechanism of sunflower plants and the highest yield was obtained from 750 gr B da^{-1} applications.

Key Words: Boron fertilizer, sunflower, available soil boron

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Sulfur Application on Antioxidant Enzyme Activity of Cucumber (*Cucumis sativus* L.) Plants

Adem GUNES[1*], Osman SÖNMEZ[1], Oğuzhan UZUN[1], Müdahir OZGUL[2], Ayhan HORUZ[3], Faruk TOHUMCU[4], Serdar SARI[4], Metin TURAN[5]

[1]Department of Soil Science and Plant Nutrition, Faculty of Agriculture, Erciyes University, Kayseri-TURKEY
[2]Department of Soil Science and Plant Nutrition, Faculty of Agriculture, Ataturk University, Kayseri-TURKEY
[3]Dept. of Soil Science and Plant Nutrition, Faculty of Agriculture, Ondokuz Mayıs Univ., Samsun-TURKEY
[4]Department of Soil Science and Plant Nutrition, Faculty of Agriculture, Igdır University, Igdır-TURKEY
[5]Dept. of Genetics and Bioeng., Faculty of Eng. and Architecture, Yeditepe Univ., Kayisdagi, Istanbul-TURKEY
*Corresponding author: adem_gunes25@hotmail.com

Abstract

In order to investigate effect of different concentrations of sulfur on antioxidant enzyme activity of *Cucumis sativus* L., an experiment was performed as a design of completely randomized design with four replications under greenhouse conditions. Initial soil sampling was performed to determine initial physical and chemical soil characteristics. After this experiment, six elemental sulphur doses (0, 20, 40, 80, 120 and 200 kg da^{-1}) were applied to cucumber plants (*Cucumis sativus*). Sulphur doses were applied to pots filled with 4 kg soil and soils were exposed to 3-month incubation period. Seedlings were planted after the incubation period. At the end of the vegetation cycle, plants were harvested and for antioxidant enzyme activity analysis, the leaves of the plants were removed and taken to the laboratory. Results revealed that in particular, sulfur applications have been shown to promote enzyme activity in plants up to a certain dozen. As a result of this study, it was determined that the antioxidant activity of the plant would increase with sulfur application in the soil with high pH value.

Key Words: Sulfur, cucumber, antioxidant enzyme

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Humic Acid Treatments on Amino acid Contents of Spinach (*Spinacia oleracea* L.)

Adem GUNES[1*], Oğuzhan UZUN[1], Osman SÖNMEZ[1], Faruk TOHUMCU[2], Serdar SARI[2], Mustafa BAŞARAN[1], Metin TURAN[3]

[1]Dept. of Soil Science and Plant Nutrition, Agriculture Faculty, Erciyes Univ., Kayseri-TURKEY
[2]Department of Soil Science and Plant Nutrition, Faculty of Agriculture, Igdır University, Igdır-TURKEY
[3]Dept. of Genetics and Bioeng., Faculty of Eng. and Architecture, Yeditepe Univ., Kayisdagi, Istanbul-TURKEY
*Corresponding author: adem_gunes25@hotmail.com

Abstract

Spinach plants can uptake significant amount of nitrate from the soil. Therefore, fertilizers used to improve spinach yield and quality should be selected very carefully. The present study was conducted to investigate the effects of humic acid treatments on amino acid contents of spinach. Plants (*Spinacia oleracea* L.) Four different humic acid doses (0, 3, 6 and 9 lt da^{-1}) were applied to pots filled with 4 kg of soil. Experiments were conducted in 5 replications in 20 pots. Humic acid treatments were applied after sowing the seeds. Mineral fertilization was not performed to see the effects of humic acid treatments on spinach amino acid contents. Initial soil sampling was performed to identify initial physical and chemical soil characteristics. Plants were harvested at the end of experimental period and fresh plant leaves taken. Results show that humic acid treatments generally decreased total amino acid contents of spinach plants. Therefore Humic acid applications resulted in an increase in the amount of some amino acids and a decrease in the amount of some amino acids. Especially the amount of proline started to decrease after a certain dose of humic acid.

Key Words: Spinach, humic acid, amino acid

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Role of Brassinosteroides in Improving Germination of Seed of Maize under Saline Condition

Cengiz KAYA[1*], Salih AYDEMİR[1]

[1]Harran University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: c_kaya70@yahoo.com

Abstract

It was aimed to screen five cultivars of maize for their differential tolerance to salt stress and also identify the most appropriate doses of Brassinosteroides (BS) mitigating deleterious effects of salt on germination of seeds of different maize cultivars. The seeds of five maize cultivars were soaked for 24 h in solutions containing five levels of BS (0.5, 1, 1.5, 2 and 2.5 µM). Germination percentage, lengths of plumules plus radicles, fresh weight of germinated seeds and soluble protein content were reduced by salinity stress. However, time for 50% seed germination and total soluble sugars were increased by salinity stress. Saline stress was less detrimental on tested parameters in PR 32T83 and more detrimental in PR34N24. HA increased fresh weight of germinated seeds in most cases, but it significantly reduced soluble sugar in hypocotyls mostly. Also, of five BS levels used, there seemed to be no consistent dose being more effective, but in a few cases, HA at 1.5 and 2 µM doses seems to be a bit more effective mostly. It can be concluded that tolerances of maize cultivars to salinity stress differed and effectiveness of BS as seed treatment is dependent on doses and cultivars.

Key Words: Seed germination; Salinity stress; Maize; Brassinosteroides

Acknowledgements: This research was supported by The Scientific and Technical Research Council of Turkey (TOVAG-114R068).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Soil Properties of Oriental Tobacco Cultivation Fields in Adıyaman Region (Turkey)

Ali Rıza ONGUN[1*], Mahmut TEPECİK[1], Recep Serdar KARA[1], Cansu ALMAZ[1]

[1]Ege University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, İzmir-TURKEY
*Corresponding author: ali.riza.ongun@ege.edu.tr

Abstract

The oriental tobacco farming is being carried out intensely in Adıyaman Region. The objective of this study is investigating the basic productivity properties of tobacco grown soils and to accumulate knowledge on this topic. For this purpose, 805 soil samples were collected and their pH, electrical conductivity, total organic matter, particle size distribution, total N, extractable macro- and micronutrients (P, K, Ca, Mg, Na, Fe, Cu, Zn and Mn) analyses were carried out and interpreted. According to coefficient of variation values, the highest variabilities were found in extractable Na (Cv: 251,47), extractable Mn (Cv: 114,53) and extractable P (Cv: 111,27) contents of soils. As for the lowest variabilities were found in sand (Cv: 20,10) and silt (Cv: 25,62) contents. When considered as a whole, soils in Adıyaman Region were found slightly alkaline, and poor in organic matter and extractable Zn contents. None the less, extractable Ca contents were determined as very high.

Key Words: Oriental Tobacco, Soil, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

An Experimentation of Potassium Based Copolymer of Acrylamide/Acrylic Acid under Field Conditions

Ali Rıza ONGUN[1*], Mahmut TEPECİK[1]

[1]Ege University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, İzmir-TURKEY
*Corresponding author: ali.riza.ongun@ege.edu.tr

Abstract

The water resources of the Earth are expected to be affected by important scarcity problems, particularly by global warming. However, water is an irreplaceable input for agricultural production. Different techniques were investigated to use water resources effectively. One of the issues that has come to the agenda in recent years is the usage of water storage properties of polymers in agriculture. The aim of this study is to investigate the effects of Potassium Based Copolymer of Acrylamide / Acrylic on water consumption, yield and soil properties in corn (*Zea mays* L.) cultivation. For this purpose, a field experiment was established by randomized plots experimental design with three replications. The experimental subjects were determined as (1) Control at field water capacity, (2) 100 g/m^2 copolymer application at ½ of field water capacity, (3) 100 g/m^2 copolymer application at field water capacity, (4) 200 g/m^2 copolymer application at ½ of field water capacity and (5) 200 g/m^2 copolymer application at field water capacity. Corn seeds were sawn on 05.06.2015 and the first soil samples were collected after one week. Fresh weights of corn plants were determined on 17.08.2015. The second soil sampling were realized on 04.09.2015.

The water consumption of Control plots was determined as 521 mm, while it was 245 mm under 200 g/m^2 copolymer application at ½ of field water capacity. The corn fresh yield for control plots were determined as 2870 kg/da; while it was 4492 kg/da under 200 g/m^2 copolymer application at field water capacity.

Key Words: Polymer, Irrigation Water, Soil, *Zea mays* L.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Use of Vermicompost in Sustainable and Ecological Agriculture

Ali SARIOĞLU[1*], Kemal DOĞAN[2]

[1]Harran University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Şanlıurfa-TURKEY
[2]Mustafa Kemal Univ., Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Hatay-TURKEY
*Corresponding author: asarioglu@harran.edu.tr

Abstract

Vermicompost is an organic fertilizer obtained by separating all kinds of organic wastes and passing worms through digestive systems. Unlike green mannure and other organic fertilizers, some very important antibiotics, enzymes, growth promoting materials are included. Vermicompost is included symbiotic and non-simbiotic nitrogen bacteria (rhizobiumand Azotobacter etc.) and mycorrhizal fungi. As an organic material, vermicompost can be applied to all organic farming areas as it provides nutrients to plants along with the effect of improving soil properties

Intensified agricultural tillage systems, which are carried out with increasing concern about the growing world population, cause reduction of fertile land. Furthermore, efforts to get more products from the unit side resulted in increases in the quantity of products, while lower quality was achieved. In humans fed with declining quality products, hidden hunger and diseases caused by these hunger have begun to occur. The use of intensive farm and chemicals has begun to threaten human health and the environment. In order to preserve the fertility and sustainability of fertile soils, it is necessary not only to feed the plants but also to feed the land and to restore the exploited parts. In this study, which is created as a compilation, it was discussed ecological and economic impacts of the vermicompost which use in agriculture land widespread recently.

Key Words: ecological farm, vermicompost

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Some Heavy Metal Pollution From Traffic on the Soils at Edge of Bingöl-Diyarbakır Highway

Abdulkadir SÜRÜCÜ[1*], Sadullah ERDOĞAN[2]

[1]Harran University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Şanlıurfa-TURKEY
[2] Bingöl University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Bingöl-TURKEY
*Corresponding author: akadir63@yahoo.com

Abstract

The purpose of this study is to determine the chromium (Cr), cobalt (Co), copper(Cu), manganese(Mn) and iron(Fe) that can be generated from the traffic in the roadside near the Bingöl-Diyarbakır highway road and to show the relation of these heavy metals with the distance from the highway. For this purpose, a total of 80 soil samples were taken from the left and right sides of the highway with a distance of 0, 2, 15 and 40 m with four repetitions at a depth of 0-15 cm. The samples were burned with the king's acid. Relevant elements were determined by ICP in the obtained filter. As a result, the values of Cr, Co, Cu, Mn and Fe of the soil are in the range of 0.0.653-0.060, 0.052-0.284, 0.026-0.114, and 3.645-15.410 mg kg^{-1} and 0.022-4.263% , with mean values of 0.299, 0.172, 0.072 and 11.757 mg kg^{-1} and 0.146% respectively. All elements exceeding limit values of soil pollution parameters are below the limit values. It can be interpreted that the traffic density between Bingöl and Diyarbakır is low. These heavy metals were followed in the order of Fe> Mn> Co> Cr> Cu.
Depending on the result of the survey, it has been determined that heavy metal concentrations change as we move away from the highway. This suggests that the heavy metal accumulation observed in the soil in the study area is of traffic origin.

Key Words: Heavy metal; Contaminated pollution; Soil pollution, Bingöl

Acknowledgements: This research was supported by BAP Unit of Bingöl University (BAP-ZF.2016.00.003).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Gyttja on Plant Zinc Uptake

Güzel YILMAZ[1*], Ali Volkan BİLGİLİ[2]

[1]Harran University, Engineering Faculty Department of Environment, Şanlıurfa-TURKEY
[2]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutriion, Şanlıurfa-TURKEY
*Corresponding author: gyilmaz@harran.edu.tr

Abstract

There are various factors for improving yield in agriculture. These are use of new varieties, fertilizing, irrigation, chemical agents and the use of modern agricultural equipments and apparatus. In addition, yield can be increased by using natural sources that are not commonly used in agriculture.
One of these sources is Gyttja material existimg between sheets of lignite coals. It has rich in organic matter (75%). The fact that the production capacities of soils are linearly correlated witj soil organic matter has been known for hundreds years.
Physical impacts of organic matter can be sorted as structure, air and water uptake, heat capacity and consistency. It is also significant for chemical properties of sois. Humic materials with small or big molecules significanly affect soil reaction and soil exchange capacity.
In this study it was aimed to investigate whether Gyttja is important in agriculture in terms of zinc interaction. The study was performed as pot experiment and it was designed according to random experimental design. The results of the research showed that Gyttja application positively impact plant development and uptake of zinc and phosphorous.

Key Words: Organic matter, Gyttja, Zinc, Interaction

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Impact of Climate on the CO_2 Emission

Güzel YILMAZ[1*], Kerem GÜLPINAR[1], Ali Volkan BİLGİLİ[2]

[1]Harran University, Engineering Faculty Department of Environment, Şanlıurfa-TURKEY
[2] Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutriion, Şanlıurfa-TURKEY
*Corresponding author: gyilmaz@harran.edu.tr

Abstract

Climate are highly impacted and changes as a result of increasing population, unbalanced consumes of oil, coal and its derivatives and unsuitable agricultural activities. Climate change can impact directly and indirectly agriculture, forest and plant vegetation, clean water resources, energy, human health and biological variety. The biggest factor causing climate change is greenhouse gas emissions due to humanbeing activities as well as natural activities. As a result global warming, ecological balabce degrades and its effects can be seen regionally and globally. Among greenhouses (CO_2, CH_4, N_2O) causing global warming CO_2 emissions has an significant sum. In this study, a research investigating the impact of climate on soil CO_2 emission. The experiment has been set up in research farm of Harran University Agriculture Faculty. In the study area CO_2 emissions have been measured using Lundegardh method at different locations selected. In conclusion, average air temperature and precipitation amaount in the study area have been recorded as 19.8 0C and 357.6 mm, respectively. CO_2 emissions varied seasonaly highly.

Key Words: Claimate change, CO_2 emission, soil

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Properties and Land Evaluation of the Aridisol Soils in Central Anatolian

Mert DEDEOĞLU[1*], Levent BAŞAYİĞİT[2], Hasan Hüseyin ÖZAYTEKİN[1]

[1]Selçuk University, Agriculture Faculty, Soil Science and Plant Nutrition Department, Konya-TURKEY
[2]Süleyman Demirel University, Agriculture Faculty, Soil Science and Plant Nutrition, Isparta-TURKEY
*Corresponding author: mdedeoglu@selcuk.edu.tr

Abstract

Aridisols, which are widely distributed in the South East Anatolia Region in TURKEY and are also called as arid region soils, it also occupies an important place among the soil classes in the Central Anatolian Region, when soil characteristics and long term average climate data are evaluated according to Thornthwaite method.
In this study, the general characteristics of the territories belonging to the Aridisol ordinance, which is defined as the result of a detailed soil survey study on the area of Beşgözler in the size of 5,140 hectares in the Konya plain. The land was evaluated parametrically according to the FAO Soil Productivity Index and mapped to 1: 10,000 scale in the GIS environment.
In the results of working, total 1960 hectares are identified in Aridisol order from 2 different series according to soil taxonomies and the soil was classified as Typic Haplocalcids in the subsoil group.
According to the results of suitability classifications with FAO Soil Productivity Index was determined that the Aridisols of the region have been distributed as 38% for class I (S1) elite agricultural land, 50% for class II (S2) good quality agricultural land nad 12% for class III (S3) medium quality agricultural land. Also, the results it was concluded that these areas are the absolute agricultural land, in addition, in these areas for wheat or barley with profitability under dry conditions, furthermore, the areas are suitable for sugar beet, sunflower, corn or bean under irrigation conditions.

Key Words: Aridisol, FAO Soil Productivity Index, GIS, Konya Basin, Thornthwaite

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Microelement Uptake of Cotton (*Gossypium hirsutum* L.) Growing in the Soils Which Have Different Salt Levels

Aytül YILDIRIM[1*], Faruk İNCE[2]

[1]Fırat University, Baskil Vocational High School, Elazığ-TURKEY
[2]Retired Faculty Member
*Corresponding author: aytulyildirim@firat.edu.tr

Abstract

This research was carried out to determine the effect of different salinity levels on microelement uptake of cotton which is grown on different 15 locations which have the possibility of salification (*Gossypium hirsutum* L.) in Harran Plain. In the study conducted in 2003-2004, the fields, where Stoneville-453 cultivars were cultivated effectively, were selected as the research area. Soil and plant samples were taken and evaluated in May-August. The soils of the research fields were determined to have clayey structure, low organic matter contents, high lime and pH contents and medium salinity. Zn contents of soils, which are useful for the plant, were generally found to be less than that of critical value (0.5 ppm) whereas useful Mn content was found to be more than that of critical value (1.0 ppm). Fe and Cu contents were also found differently depending on the months of the year. There was no statistically significant relation between the amount of microelement available to the soil of the study area and the amount of salt. Accordingo to the regression analysis, positive correlations were observed between EC and salinity ratios of the soil and Mn concentration of medium aged leaves of the plant and Zn concentration of plant's seed. Negative correlations were also detected between Fe and Cu concentrations of medium aged leaves and EC and salinity ratios. It was determined that different EC levels of the survey area soil caused a decline in yield of cotton on each decare. The results show that the salt content of the soil affected microelement uptake of the plant directly or indirecly.

Key Words: Cotton, Harran Plain, salinity, microelement

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Possible Effects of Climate Change on Agricultural Activities in Turkey

Tuba RASTGELDİ DOĞAN[1*], Melek YILDIZ[1]

[1]Harran University Faculty of Engineering, Department of Environmental Engineering, Şanlıurfa-TURKEY
*Corresponding author: trastgeldi@harran.edu.tr ; tubarastgeldi@gmail.com

Abstract

Climate, is the most influential factor in the formation and distribution of vital activities. Climate change processes resulting from anthropogenic effects on the World, has been subject to many scientific researches in recent years. A gradual increase in the overall temperature of the earth's atmosphere generally attributed to the greenhouse effect caused by increased levels of carbon dioxide, chlorofluorocarbons, and other pollutants. The fact that these greenhouse gases increase the temperature of the earth by trapping the sun's rays is the first step in terms of agricultural production and water resources affect.
Agricultural activity sector in our country; for human life together with national income and employment because it is the sector that produces the necessary food products, the economy has an important place. Climate change has various negative effects on water resources and the amount of herbal products , soil structure, animal production. The impact of climate change in the coming years, which will increase water supply in cities in arid and semi-arid areas in Turkey will further add to the problem, the need for water for agriculture will increase too much. Thus, arid areas will increase, increases in summer drought duration and severity will trigger the rate of salinization and desertification. Drought and water stress that are effective in our country as a whole, not only in terms of energy production and agriculture but also in many other directions. More emphasis should be placed on studies to reduce the effects of global warming, which is caused by climate change, to a minimum. In addition, conscious agricultural practices and regional surveys are to reduce emissions of greenhouse gases.

Key Words: Climate Change, AgriculturalActivities, Greenhouse Gases, Global Warming

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Air Pollution on Climate Change

Tuba RASTGELDİ DOĞAN[1*], Merve Nur DİNÇ[1]

[1]Harran University Faculty of Engineering, Department of Environmental Engineering, Şanlıurfa-TURKEY
*Corresponding author: trastgeldi@harran.edu.tr ; tubarastgeldi@gmail.com

Abstract

The lives of all living things depend on air, water and soil. Climate, which directly influences these three factors, is the major source that meets basic needs of human beings to survive. However, climates have constantly changed through human impact more than natural ways since life appeared on the planet. In the last century, this change has now appeared as the global warming problem that results in disasters.
The cause of global warming is the greenhouse gases such as carbon dioxide and sulphur dioxide that are released into the world atmosphere as a result of human activities. Human beings pollute the atmosphere, bringing a lot of physical and biological changes that will influence the life of all living things. In this respect, climate change and air pollution are closely linked. Air pollution today is not only a local problem, but also has become a major factor leading to global warming and global climate change. As a result, it is necessary to prevent air pollution first to prevent climate change. For this reason, we need to take legal measures to increase our air quality, use renewable energy resources, and care more about international treaties seeking solutions to the global warming problem.

Key Words: Air Pollution, Global Warming, Greenhouse Gases

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Mapping of Soil Quality Parameters and Soil Quality Indexes in the Harran Plain Using Geostatistical Techniques

Ali Volkan BİLGİLİ[1*]

[1]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: vbilgili@harran.edu.tr

Abstract

Soil quality is the ability of soils to perform their functions well. Assessment of qualities of soils developing soil quality indexes (SQIs) unique to the area studies are crucial for sustainability of soil productivity. In this study, more than 400 soil samples were collected from seven common soil series at 0-30 cm and analyzed for over 30 soil physical, chemical and biological properties. Minimum Data Sets (MDS) were obtained using PCA analysis and values of soil quality variables were transformed to scores using linear and non-linear scoring functions and SQIs were obtained averaging scores of each soil sample. Soil quality parameters such as organic matter content, bulk density, hydraulic conductivity, exchangeable Ca, K, soluble Ca, Mg, Na, available Cu, Fe, aggregate stability, microbial biomass, dehydrogenase and catalase enzyme activities were involved in the minimum data set. Soil quality parameters and indexes at unsampled locations were estimated and mapped using kriging method. Estimation accuracies were evaluated using cross validation technique. SQIs ranged from 20/100 to 72/100. In general, spatial dependence of most of the soil quality parameters and indexes represented by nugget to sill ratio (Co/C) were moderate. Kriging maps produced showed that the percent amount of areas covered by soils with low (40 < SQI < 50) and very low soil quality (SQI<40) were more than 80 %.

Key Words: Harran Plain, Soil quality, soil quality index, Geostatistial analyses, Kriging

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Some Heavy Metal (Lead, Zinc, Copper, Manganeseandiron) Pollution of Roadside Soil at the Bingöl-Elazığ Highway

Abdulkadir SÜRÜCÜ[1*], Sadullah ERDOĞAN[2], Elif ELALTUNTAŞ[2]

[1]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
[2]Bingöl University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Bingöl-TURKEY
*Corresponding author: akadir63@yahoo.com

Abstract

The aim of this study is to determine the lead (Pb), Zinc (Zn), copper (Cu), manganese(Mn), and iron(Fe) that can be generated from the traffic in the roadside near the Bingöl-Elazığ highway road and to show the relation of these heavy metals with the distance from the highway. To this end, eighty soil samples were taken from the left and right sides of the highway with a distance of 0, 2, 15 and 40 m with four repetitions at 0-15 cmsoil depth. King acid solution was used to burn soil samples. These elements were determined by ICP in the obtained filter. At the end, the values of Pb, Zn, Cu, Mn and Feof the soil are in the range of 0.414-0.637, 0.145-0.764, 0.005-0.099and 5.768 -19.935mg kg^{-1}, and 0.023-0,059%, with mean values of 0.524, 0.390, 0.052, and 13,758 mg kg^{-1} and 0.044% respectively. All elements exceeding limit values of soil pollution parameters are below the limit values. It can be interpreted that the traffic density between Bingöl and Elazığ is low. These heavy metals were followed in the order of Fe>Mn>Pb>Zn>Cu.
Depending on the result of the study, it has been determined that heavy metal concentrations change as we move away from the highway. This suggests that the heavy metal accumulation observed in the soil in the study area is of traffic origin.

Key Words: Trafic pollution; Heavy metal; Soil pollution, Bingöl

Acknowledgements: This research was supported by BAP Unit of Bingöl University (BAP-ZF.2016.00.003).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Environmental Degredation in the Harran Plain After Irrigation

Ali Volkan BİLGİLİ[1*], İrfan YEŞİLNACAR[2], Kotera AKİHİKO[3], Takanori NAGANO[4], Güzel YILMAZ[2], Ayşin BİLGİLİ[5], Aydın AYDEMİR[6], Hüseyin Sefa HIZLI[7]

[1]Harran University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
[2]Harran University, Faculty of Engineering, Department of Environmental Engineering, Şanlıurfa-TURKEY
[3]Research Institute of Humanity and Nature, JAPAN
[4]Kobe University, JAPAN
[5]GAP Agricultural Research Institute, Şanlıurfa-TURKEY
[6]Şanlıurfa Metropolitan Manucipilatiy, Şanlıurfa-TURKEY
[7]General Directorate of State Hydraulic Works, Şanlıurfa-TURKEY
*Corresponding author: vbilgili@harran.edu.tr

Abstract

This study evaluated the impact of irrigation project on soil and water resources in semi-arid Southeastern, Turkey. The GAP project launched by Turkish goverment in Southeastern Anatolia is a giant irrigation and electricity production project. It aims to improve social and economical welfare of the region. Within the scope of this project, the Harran plain is the first plain opened to irrigation. With the beggining of irrigation and intensive agricultural activities significant improvements were observed in social and economic life of the people living in the plain. But these improvements happened mostly at the expense of soil and environmental quality and intensive agriculture caused important negative consequences for environment leading to degredation of land, plant and water resources such as soil quality degradation, diseases of local crops, pollution of water sources with nitrate, soil erosion, salinity in soil and groundwater and nitrate loss with denitrification. In addition, urbanization rates on fertile soils of the plain showed increment after irrigation due to increasing population.

Key Words: Harran plain, irrigation, environmental pollution, soil quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Some Heavy Metal (Nicel, Cobalt, Crom, and Cadmium) Pollution of Roadside Soil at the Bingöl-Elazığ Highway

Abdulkadir SÜRÜCÜ[1*], Sadullah ERDOĞAN[2]

[1]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
[2]Bingöl University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Bingöl-TURKEY
*Corresponding author: akadir63@yahoo.com

Abstract

The aim of this study is to determine the nicel (Ni), cobalt (Co), crom (Cr) and cadmium (Cd) that can be generated from the traffic in the roadside near the Bingöl-Elazığ highway road and to show the relation of these heavy metals with the distance from the highway. To this end, eighty soil samples were taken from the left and right sides of the highway with a distance of 0, 2, 15 and 40 m with four repetitions at 0-15 cm soil depth. Aqua-reggia mixture was used to burn soil samples. These elements were determined by ICP in the obtained filter. At the end, the values of Ni, Co, Cr, and Cd of the soil are in the range of 0.140-0.762, 0.031-0.356, 0.224-1.230 and 0.119 -0.135 mg kg^{-1}, with mean values of 0.468, 0.139, 0.688, and 0.127 mg kg^{-1} respectively. All elements exceeding limit values of soil pollution parameters are below the limit values. It can be interpreted that the traffic density between Bingöl and Elazığ is low. These heavy metals were followed in the order of Cr > Ni > Co >Cd.
Depending on the result of the study, it has been determined that heavy metal concentrations change as we move away from the highway. This suggests that the heavy metal accumulation observed in the soil in the study area is of traffic origin.

Key Words: Trafic pollution; Heavy metal; Soil pollution, Bingöl-Elazığ

Acknowledgements: This research was supported by BAP Unit of Bingöl University (BAP-ZF.2016.00.003).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Soil Conservation Studies under the Integrated Flood Control Project at the Han-El Ba'rur (Gökderesi) Microcatchment in the Şanlıurfa-Harran Tek Tek Mountains

Alaaddin YÜKSEL[1], Yasin DEMİR[1*], Abdulkadir SÜRÜCÜ[2], M. Nuri KOLAK[3], Bayram HOPUR[4]

[1]Bingol University, Faculty of Agriculture, Department of Soil Science, Bingöl-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Soil Science, Şanlıurfa-TURKEY
[3]Bingol University, Vocational School of Technical Sciences, Bingöl-TURKEY
[4]Ministry of Forestry and Water Management, TURKEY
*Corresponding author: ydemir@bingol.edu.tr

Abstract

Soil and water resources for crop production in arid and semi-arid regions are the resources to be controlled and developed. In these region where the amount of rainfall is low and evaporation is high, the protection of the soil against erosion and the storage of the water to the soil are very important. However, in addition to the misuse of land and agricultural practices, soil structure is spoiled. In addition, natural disasters such as torrent and floods that are the result of extreme and heavy rains disrupt the natural ecosystem. Despite the Harran plain and Tek Tek Mountaions are located in the arid climate zone, within some period this locations exposed to the torrent and floods as a result of heavy and high instense rainfall. In this study, soil conservation measures carried out within the scope of Tek Tek Mountains integrated flood control studies of Sanliurfa Harran Plain Hanel Ba'rur Microcatchment were investigated. The aim of this project, to take necessary precautions for the degraded natural resources and to make rehabilitation of these resources. The project area consists of 9 villages and an area of 5093.53 ha. The soil samples were taken from 66 soil profiles and the 341 points of soil sample morphological characteristics were determined. According to soil characteristics and topographical features, such as forest and agricultural plantation, water storage ponds, terraces applications, rangeland rehabilition studies, galvanized cage wire threshold construction etc works were planned in the microchatchment. The project completed in 2013 and implementation started in 2014. With these soil conservation work carried out within the scope of the project, it is envisaged that agriculture and settlement units located in the lower levels of microchatchment will reduce natural disasters such as torrent and floods in this region.

Key Words: Sanliurfa, Hanel Ba'rur, Microcatchment, Torrent and Flood Control

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Studies to Support Rural and Agricultural Development with the Tek Tek Mountains Integrated Watershed Project

Alaaddin YÜKSEL[1], Yasin DEMİR[1*], Abdulkadir SÜRÜCÜ[2], İbrahim YÜZER[3], Ali Rıza DEMİRKIRAN[1], Abdulvahap BAYDAŞ[4]

[1]Bingol University, Faculty of Agriculture, Department of Soil Science, Bingöl-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Soil Science, Şanlıurfa-TURKEY
[3]Ministry of Forestry and Water Management, TURKEY
[4]Bingol University, Faculty of Economics and Administrative Sciences, Bingöl-TURKEY
*Corresponding author: ydemir@bingol.edu.tr

Abstract

Rural development is generally defined as the process of increasing the quality of life and the economic and social well-being of people living in rural areas. For this purpose, various projects are being made by the institutions in Turkey. In this study, the support given to the local people by the General Directorate of Forestry was investigated in the context of Hanel Ba'rur watershed project. The project area consists of 9 villages and an area of 5093.53 ha. A great majority of the people of the region are engaged in agriculture and animal husbandry. As a result of the studies carried out on the project area, it has been determined that the agricultural land is located on the soil which generally exist the soil moisture content and not eroded. Soil of areas are limestone, shallow and loam texture. Surveys for males, women, young people and children living in microcatchment within the scope of the project have been conducted and solutions for the identified problems have been put forwarded. The main problems of microcatchment are low productivity due to water shortage, inefficiency of grass in rangeland, lack of fruit production in the region, agricultural losses due to torrent and floods. In order to make rural and agricultural development, irrigation pool construction, distribution of fruit nursery of some species, breeding works to increase rangeland yield and distribution of field crop seeds. In addition, animal shelters were improved, animal drinking water ponds and animal shades have been built.

Key Words: Hanel Ba'rur watershed, Development, Şanlıurfa

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Some Heavy Metal Pollution in the Edge of Bingöl-Muş Highway

Abdulkadir SÜRÜCÜ[1*], Elif ELALTUNTAŞ[2]

[1]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
[2]Bingöl University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Bingöl-TURKEY
*Corresponding author: akadir63@yahoo.com

Abstract

The aim of this study is to determine the lead (Pb), cadmium (Cd), nickel (Ni) andzinc (Zn) that can be generated from the traffic in the road side near the Bingöl-Muş highway route and show the relation of these heavy metals with the distance from the highway. For this purpose, a total of 80 soil samples were taken from the left and right of the highway with four repetitions at 0, 2, 15 and 40 m from the edge of road at 0-15 cm depth. The soil samples was digested with aqua-reggia mixture. The heavy metals were determined by ICP. As a result, the values of lead (Pb), cadmium (Cd), nickel (Ni) and zinc (Zn) of the soil are in the range of 0.121-0.249, 0.038-0.095, 0.441-0.713 and Zn 0.083-0.272 mg kg^{-1}, with mean values of 0.173, 0.065, 0.570 and 0.180 mg kg^{-1}, respectively. According to boundary values of soil pollution parameters, all specified elements are found below the limit values. It can be interpreted as the traffic intensity of the road between Bingöl-Muş highway is low. These heavy metals were followed in the order of Ni>Zn> Pb>Cd. Depending on the result of the survey, it has been determined that heavy metal concentrations change as we move away from the highway. This suggests that th eheavy metal change observed in the soil in the study area is traffic-related.

Key Words: Bingöl-Muş, Heavy metal; Contaminated pollution; Soil pollution

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Cobalt, Chromium, Copper and Manganese Pollution in the Soil Near the Bingöl-Erzurum Highway

Abdulkadir SÜRÜCÜ[1*], Elif ELALTUNTAŞ[2]

[1]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
[2]Bingöl University, Agriculture Faculty, Department of Soil Science and Plant Nutrition, Bingöl-TURKEY
*Corresponding author: akadir63@yahoo.com

Abstract

It was aimed to determine Cobalt (Co), chromium (Cr), copper (Cu) and manganese (Mn) pollution in the soil near the Bingöl-Erzurum highway. So, a total of 80 soil samples were taken from the left and right of the highway with four repetitions at the four points (0, 2, 15 and 40 m) from 0-15 cm depth. The soil samples was digested with aqua-reggia mixture. ICP was used to determined the heavy metals. As a result, the values of Co, Cr, Cu and Mn of the soil were in the range of 0.001-0.147, 0.000-0.680, 0.000-0.008 and 0.000-0.364 mg kg^{-1}, with mean values of 0.084, 0.147, 0.003 and 0.117 mg kg^{-1}, respectively. According to criteriavalues of soil pollution parameters, all specified elements are found be low the limit values. It can be interpreted as the traffic intensity of the road between Bingöl-Erzurum highway is low. These heavy metals were followed in the order of Cr>Mn>Co>Cu. Depending on the result of the survey, it has been determined that heavy metal concentrations change as we move away from the highway. This suggests that the heavy metal change observed in the soil in the study area is traffic-related.

Key Words: Bingöl-Erzurum, Heavy metal; Contaminated pollution; Soil pollution

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Adsorption Removal of Methylene Blue (MB) Dye from Aqueous Solution by Biochar Prepared from Corn Stalk

Erdal SAKİN[1*], Mehmet Fatih DİLEKOĞLU[2]

[1]Department of Soil Science and Plant Nutrition, Agriculture Faculty of Harran University, Sanliurfa-TURKEY
[2]Department of Environmental Engineering, Faculty of Engineering of Harran University, Sanliurfa-TURKEY
*Corresponding author: esakin@harran.edu.tr

Abstract

The search for cheap and abundant products for the removal of pollutants from the water is one of the most popular topics of recent years. It is also noteworthy that the added value of the products that can be obtained from the wastes of agricultural products in particular. The disposal of dyes from industrial wastewater is still an important issue. The high cost of disposal of such pollutants triggers the search for cheap and easy material. In this study, the removal of methylene blue stain from aqueous solutions was investigated by using the biochar obtained from corn stalks, which is also used to increase soil fertility. In the study, the effect of initial dye concentration, adsorbent dosage, contact time and pH change on adsorption removal was investigated. Morphology of adsorption with scanning electron microscope images before and after adsorption is also revealed. According to the results obtained, the adsorption of the methylene blue on the corn stalks biochar is fitted to the Langmuir isotherm model. The Langmuir isotherm constant was calculated as b = -38.54 1/g and Qo = 8.65 mg/g. The kinetic study showed that pore diffusion in the adsorption was not effective. According to these results, it can be said that corn stalks biochar can be used as an effective and applicable material for the removal of stain.

Key Words: Corn stalk bio-char; methylene blue dye; adsorption; isotherm; kinetics

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Adsorption Removal of Methylene Blue (MB) Dye from Aqueous Solution by Biochar Prepared from Almond Shells

Erdal SAKİN[1*], Mehmet Fatih DİLEKOĞLU[2]

[1]Department of Soil Science and Plant Nutrition, Agriculture Faculty of Harran University, Sanliurfa-TURKEY
[2]Department of Environmental Engineering, Faculty of Engineering of Harran University, Sanliurfa-TURKEY
*Corresponding author: esakin@harran.edu.tr

Abstract

The use of abundant and low cost adsorbents for the removal of industrial dyes such as methylene blue (MB) from industrial waste water has been addressed by the researchers. Bio-char prepared from almond shells as an alternative adsorbent fort this aim was studied. The low cost adsorbents generally include industrial solid wastes, biomass, agricultural wastes, clays minerals and zeolites. Agricultural waste materials being highly effective, cheap and renewable source of biomass can be use as an adsorbent for methylene blue removal. In this study, the removal of methylene blue dye from aqueous solutions was investigated by using the biochar obtained from almond shells, which is also used to increase soil fertility. In the study, the effect of initial dye concentration, adsorbent dosage, contact time and pH change on adsorption removal was investigated. Morphology of adsorption with scanning electron microscope images before and after adsorption is also revealed. According to the results obtained, the adsorption of the methylene blue on the almond shells biochar is fitted to the Langmuir, Freundlich and Tempkin isotherm models. The Langmuir isotherm constant was calculated as b = -1.64 1/g and Qo = 2.91 mg/g. The kinetic study showed that pore diffusion in the adsorption was effective mechanism. According to these results, it can be said that almond shells biochar can be used as an effective and applicable material for the removal of methylene blue dyes.

Key Words: Almond shell bio-char; methylene blue dye; adsorption; isotherm; kinetics

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Different Soil Tillage Systems on Some Soil Characteristics of Parcels under Fallow and Different Crops

Recep GÜNDOĞAN[1], Tuğrul YAKUPOĞLU[2*], Turgay DİNDAROĞLU[3]

[1]Harran University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Sanliurfa-TURKEY
[2]Bozok University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Yozgat-TURKEY
[3]Kahramanmaras Sutcu Imam University, Faculty of Forestry, Dept. of Forest Eng. Kahramanmaras-TURKEY
*Corresponding author: tugrul.yakupoglu@bozok.edu.tr

Abstract

The objective of this study was to determine effects of different soil tillage systems on some soil characteristics at two different depths of parcels under fallow and different crop. For this purpose, experiment was established in Kahramanmaras city, Turkey. Total twenty-four parcels constructed in size of 50 x 6 m (length and width) that were tillage with traditional and reduced techniques. In November, wheat and sainfoin were planted in the parcels and each parcel was treated as a control by leaving a parcel against the parcels. Each application was repeated in 3 parcels. The harvest was carried out in June and then organic matter (SOM), soil reaction (pH), total salt (SLT), wet aggregate stability (WAS), bulk density (BD) and hydraulic conductivity in saturated conditions (Ksat) were determined at two different soil depth for each parcel. There was the effect of sampling time on SLT at 0-30 cm depth and SOM, SLT and WAS at 30-60 cm depth. The soil tillage affected statistically the SOM and pH at 30-60 cm ($P<0.05$) while there was no effect on measured variables at surface soil. The change that the plant variety brings about the measured variables was not statistically significant at both surface and bottom soils.

Key Words: Cereal, Forage crop, Organic matter, Soil, Tillage

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Different Biochar Applications on the Growth and Yield of Corn Plants under Harran Plain Conditions

Ebru Pınar SAYGAN (AYAYDIN)[1]*, Salih AYDEMİR[2], Osman SÖNMEZ[3], Abdullah ÖKTEM[4], Cengiz KAYA[2], Ali Volkan BİLGİLİ[2], Mehmet ŞENBAYRAM[2], Osman ALTUN[2]

[1]Olive Research Instıtute Directorate, 35100, Izmir-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Soil Science and Plant Fertility, Şanlıurfa-TURKEY
[3]Erciyes University, Faculty of Agriculture, Department of Soil Science and Plant Fertility, Şanlıurfa-TURKEY
[4]Harran University, Faculty of Agriculture, Department of Field Crops, Şanlıurfa-TURKEY
*Corresponding author: ebrusaygan@hotmail.com

Abstract

This research was conducted to evaluate the effect of different biochar on growth parameters and grain yield in corn plants on calcareous clay soils of the harran plain. The experiment has been done during 2013 and 2014 at the Harran University Eyyübiye Campus Resaerch Area. Biochars were produced from three different plant residues (pistachio shells (PS), corn cobs (CC) and cotton stalks (CS)) by carbonization method. Field experiment was carried out in 108 parcels. The study was established with 'Randomized Complete Block Designed' with three replications.

In the study; Plant height, number of leaves, first ear height, ear weight, ranked grain number, ear grain weight, hectoliter weight, grain moisture, grain yield values were determined and it has been observed that applications increased the measured values according to the controls ($p>0.05$). Higher values were obtained for all biochar applications and doses at both irrigation levels. First year N0 treatments were observed the highest grain yield values (1615.40 kg da^{-1}) for CS biochars 0% (control doses). In the second year, the highest yield values (1624.86 kg da^{-1}) were obtained in the 0.4% of PS in the N_0 parcels.

As a result of biochar applications, there is no significant difference in the growth of corn plant. In terms of grain yield, it has been found that the applications have an increasing effect especially in the second year. Overall it has been concluded that use of PS biochars material as organic input in corn cultivation would contribute to the increase in yield.

Key Words: Biochar, Maize, Irrigation rate, Mineral N

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Perspecive Ways of Energy Conservation in Deep Soil Treatment

P. M. KUKHARENKO[1*]

[1]Dnipropetrovsk State Agrarian and Economic University
*Corresponding author: Not identified

Abstract

In this study, the conditions and trends of the development of planting mechanization is analyzed and a perspective direction of reducing the energy intensity of soil cultivation is showed with the application of energy-saving principles of action on it.

Key Words: Not identified

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Land Surface Model, Some Physiographic and Hydrological Features by Using Unmanned Aerial Vehicles in Micro Catchment of Topçu Creek in Mediteranean Region, Turkey

Turgay DİNDAROĞLU[1*], Recep GÜNDOĞAN[2], Tuğrul YAKUPOĞLU[3]

[1]Kahramanmaras Sutcu Imam Univ., Faculty of Forestry, Department of Forest Eng. Kahramanmaras, Turkey
[2]Harran University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Sanliurfa, Turkey
[3]Bozok University, Faculty of Agriculture, Department of Soil Science & Plant Nutrition, Yozgat, Turkey
*Corresponding author: turgaydindaroglu@hotmail.com

Abstract

The use of unmanned aerial vehicles has become increasingly widespread with the establishment of surface models, physiographic factors and hydrological properties. In this study, it is aimed to obtain aerial photographs used in photogrammetric studies in order to increase sensitivity by using UAV (multi-propeller hexacopter). The flights were conducted in the research areas of Topçu Village in Tarsus. Mission Planner, ArcGIS, ArcHydro, Pix4D software and the Canon IXSUS 160 were used in the study. Flow directions and flow accumulation maps were determined according to the D8 algorithm method. Due to the geomorphological characteristics and other land height constraints, the optimum flight height was determined as 50 m. The forward (forward) and side overlap rates were 80% and 60%. A total of 206 aerial photographs were used to create an orthomosaic image. The RMS value of the orthophoto was determined as 0.024m. Topographic maps (digital elevation model, slope and aspect) and some basic hydrological (flow directions, flow accumulation and drainage networks) maps were produced with high resolution (1.12 cm). The average height is about 150 m and the south-east and west aspects are dominant in the study area. The average slope is between 12-20%. Many different flow directions (27 units) have been identified in the study area. Each grid cell has a value between 0 and 6299 in flow accumulation model. The most accumulated area value is 6299. We concluded that basic data on terrain physiography and hydrology have been created very precisely using IHA and appropriate imaging devices and software.

Key Words: UAV, GIS, Surface model, Physiography, Hydrology

Acknowledgements: This study financially supported by The Scientific and Technological Research Council of Turkey (TUBITAK, Project No: 114R052).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Correlations Between Reconstituted Soil Properties Using Geo-Statistical Methods

Turgay DİNDAROGLU[1*], Mudahir OZGUL[2], Taskin OZTAS[2], Mustafa Y. CANBOLAT[2]

[1]Kahramanmaras Sutcu İmam Univ., Faculty of Forestry, Dept. of Forest Engineering, Kahramanmaras, Turkey
[2]Ataturk Univ., Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Erzurum, Turkey
*Corresponding author: turgaydindaroglu@hotmail.com

Abstract

This research was carried out at the Kahramanmaras Sutcu Imam University Campus Research field for mapping and evaluating the spatial distribution patterns of some soil properties using the Ordinary Kriging. In total 36 surface soil samples (0-20 cm) were collected randomly from the 1.3 ha field area. Soil properties including particle size distribution, soil reaction (pH), electrical conductivity (EC), $CaCO_3$ content, organic matter content (OM), dispersion ratio (DO), soil moisture content (SM) and available water (AW) were determined. Spherical model was the best model for describing sand and OM contents, K-Bessel model for silt content, stable model for $CaCO_3$ content and EC, and the exponential model for clay content, soil moisture content, DO, pH and AW. Among the measured soil properties, sand, clay and silt contents, OM, DO, pH, $CaCO_3$ content and EC showed strong spatial dependence while SM and AW indicated moderate spatial dependence. The models average RMSSE2 values were found to be 0.94. On the generated raster maps, 400 random points were determined and new soil properties were extracted from these points. Significant correlations were identified between all measured soil properties using the collected soil in the field, statistically identified 34 new significant correlations (p=0.01-0.05) between soil properties from the maps generated by Ordinary Kriging interpolation method. Correlation between the limited number of soil properties and the new soil properties obtained by using the correct models with geo-statistics has nearly tripled. As a result, geostatistical interpolation methods offer important opportunities in terms of time, cost and ease of application.

Key Words: Geo-statistic, Kriging, Soil properties, GIS

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Impact of Different Types of Biochar Applications on Pepper and Soil Parameters Under Saline and Non-saline Conditions in the Harran Plain

İbrahim AKPİRİNÇ[1], Salih AYDEMİR[2*], Ali Volkan BİLGİLİ[2], Osman SÖNMEZ[3], Cengiz KAYA[2], Osman ALTUN[1], Esma AKPİRİNÇ[4], Hamza YALÇIN[5]

[1]Polen Seed Company, Şanlıurfa
[2]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
[3]Erciyes University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
[4]Harran University, Agriculture Faculty, Department of Agricultural Economics
[5]Harran University, Agriculture Faculty, Department of Animal Science
*Corresponding author: salihaydemir@harran.edu.tr

Abstract

Biochar is obtained from pyrolysis and carbonizations of biomass and recently it has taken great attention as soil amendment material. Information about its impacts under semi-arid conditions are quite limited and thus investigation of its use in detail is crucial for researchers in the areas such as the Harran Plain. A greenhouse experiment was performed to test the impacts of two different biochars produced from locally available crop residues (cotton and tobacco stalks) at three different doses including contol (0, 0.3, 0.6 %) on different soil properties (pH, organic matter, EC, $CaCO_3$, CEC, exchangeable Ca, Mg, Na, K), crop parameters (crop height, root dry and wet weight, chlorophyll content) and fruit parameters (fruit number and weight) and nurient contents of pepper grown in saline and nonsaline soils. Anova combined with Tukey test was used to test individual and interactive impacts of different biochar doses, types and soils on the parameters investigated and to make comparisons among treatments. The effects of soil factors were statistically significant ($p < 0.01$) for all parameters except plant chlorophyll content. The impacts of different biochar types and doses were significant ($p < 0.01$) for most of plant and soil parameters but non-significant for fruit quality paramaters ($p > 0.05$) and the significance of interactions effects varied among different parameters. Biochar applications were more effective in saline soils compare to non saline soils. Application of biochar could not eleminate reverse impacts of salinity providing lower averages for all parameters in saline soils than nonsaline soils.

Key Words: Biochar, the Harran plain, salinity, pepper, crop parameters, soil parameters

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Impact of Different Biochar Materials on Selected Soil Physical Parameters of the Harran Plain Clay Soils

Osman ALTUN[1], Salih AYDEMİR[2*], Ali Volkan BİLGİLİ[2], Osman SÖNMEZ[3], Cengiz KAYA[2], Ebru Pınar AYAYDIN (SAYĞAN)[4], Hamza YALÇIN[5]

[1]Polen Seed Company, Şanlıurfa
[2]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
[3]Erciyes University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
[4]Olive Research Institute, İzmir
[5]Harran University, Agriculture Faculty, Department of Animal Science
*Corresponding author: salihaydemir@harran.edu.tr

Abstract

Due to intensive agriculture depleted soil organic matter resulted in increased erosion and reduced soil biodiversity and envronmental quality in the Harran Plain. Biochar application can be helpful in remediation of this situation. Therefore the aim of this study was to assess the effects from different types of biochars applications at different rates on selected physical parameters of clay soils. Soil samples were collected from a controlled experiment design treated with various levels of biochars (0, 0,2 and 0,4 %) obtained from three different locally available materials (Cotton stalks, Pistachio shells and Corn cobs) irrigated under two different water regimes (65 % and 100 % of the field capacity). The samples taken from surface depth (0-30 cm) were analyzed for commonly used soil physical parameters; Bulk density (BD), hydraulic conductivity (HC), porosity (POR), soil organic matter (SOM), soil agregate stability (SAS) and available water content (AWC). The relationship between soil physical parameters and different treatments (application doses and biochar materials) were modeled univariate GLM modeling and significance among treatments were evaluated using Anova statistics. According to the model results, the impacts of biochar application doses, the type of biochars and different irrigation regimes on soil quality parameters were significant while the interactions were not. All soil quality parameters were improved by the application of biohar and showed differences based on the types of biochar and the levels of application doses but these differences were statistically significant only for SOM and SAS.

Key Words: The Harran Plain, Biochar, Soil quality parameters.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Amendments on Soil Bioavailable Phosphorus Concentration

Osman SÖNMEZ[1*], Cengiz KAYA[2], Salih AYDEMİR[2], Tahir POLAT[2], Adem GÜNEŞ[2]

[1]Erciyes University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
[2]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
*Corresponding author: osmansonmez@erciyes.edu.tr

Abstract

A soil bioavailable phosphorus (Bio.P) concentration is generally lower than plant needs. Therefore, addition of P to soil is mostly necessary. Due to limited plant P uptake (1/5 of applied P), most of the applied fertilizer P (80%) remains in soil and becomes unavailable to plant. A 1-year incubation study was formed with the soil that consisted of the dominant apatite P mineral. The effect of the chicken manure (TG), humic acid (HA), sulfur (S) and MgSO4 on the Bio.P of the soil was studied. Treatments were TG (0, 15 and 30 mg kg^{-1}), HA (0, 300 and 600 mg kg^{-1}), S (0, 100, 200 and 400 mg kg^{-1}) and MgSO4 (0, 15 and 30 g kg^{-1}). Sampling days were 0, 3, 7, 15, 30, 90, 180 and 365. As a result, concentrations of Bio.P increased from beginning of the study to 7 days. After that it did not increased anymore and stayed constant. Doses of S did not have any effects on soil pH and EC unlike $MgSO_4$ treatments. The results indicated that the effects of treatments were insignificant for Bio.P. Those results could be attributed to insuffient doses of the applied treatments.

Key Words: Manure, humic acid, sulfur, total P, bioavailable P

Acknowledgements: This research was supported by The Scientific and Technical Research Council of Turkey (TUBITAK-TOVAG-112O898).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Chicken Manure, Humic Acid, Sulfur, and KH_2PO_4 on Concentrations of TP and PAP in Soil

Osman SÖNMEZ[1*], Cengiz KAYA[2], Salih AYDEMİR[2], Tahir POLAT[2], Adem GÜNEŞ[2]

[1]Erciyes University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
[2]Harran University, Agriculture Faculty, Department of Soil Science and Plant Nutrition
*Corresponding author: osmansonmez@erciyes.edu.tr

Abstract

Excessive application of manures or fertilizer P to agricultural land can accelerate concentrations of soil P to levels above those needed for optimum crop production and can cause accumulations of P in soils (Ajiboye et al., 2004). Accelerated soil P results in high P losses from soils through leaching, runoff, and erosion, which in turn have adverse environmental effects such as eutrophication (Simard et al., 2001). Therefore, studies should focus the convertion of soil total P (TP) to plant available P (PAP) instead of addition of fertilizer P every year. A greenhouse study was established to determine the effects of chicken manure (TG), humic acid (HA), sulfur (S), and KH_2PO_4 on concentrations of TP and PAP in soil. Our treatments were TG (0, 4 and 6 g kg^{-1}), HA (0, 2,5 and 3,75 g kg^{-1}), S (0, 0,50, and 0,75 g kg^{-1}) and KH2PO4 (0 and 0,44g kg^{-1}). Treatments of TG increased TP and PAP concentrations, soil pH and EC. Application of S decreased soil pH and increased PAP but did not have any effect on TP concentration in soil. In general, TG, HA, and KH2PO4 treatments increased soil P content. Most effective treatment for convertion of TP to PAP in soil was TG. However, doses of TG application to soil need to be adjusted carefully since it can increase soil EC.

Key Words: Manure, humic acid, sulfur, total P, bioavailable P

Acknowledgements: This research was supported by The Scientific and Technical Research Council of Turkey (TUBITAK-TOVAG-112O898).

Veterinary Medicine Oral Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Milk Iron Levels of Awassi Sheeps Cultivated in Akçakale and Halfeti Province

Nilgün PAKSOY[1*]

[1]Harran University, Veterinary Med. Faculty, Biochemistry Department, ŞANLIURFA
*Corresponding author: nilgunpaxoy@harran.edu.tr

Abstract

Iron is an essential trace element with vital importance for all mammalian creatures. Iron deficiency is a common nutritional problem in all over the world. In this study, it was aimed to investigate the iron concentrations in raw milk samples of 54 Awassi sheep cultivated in Akçakale and Halfeti districts. Iron analysis of raw sheep milk samples was carried out by inductively coupled plasma optical emission spectroscopy (ICP-OES) after microwave digestion. Mean iron concentrations of raw sheep milk samples determined in the Akçakale province and in the Halfeti province were 1.45 ± 0.76 ppm and 1.58 ± 0.89 ppm, respectively. It was observed that the mean concentrations of milk iron levels of the two groups were close to each other and that the lowest and uppermost iron levels of these samples were parallel to each other. There was no statistical difference between the iron levels in raw sheep milk samples collected from both districts. Also detailed biochemical investigations of all the sheep breeds cultivated in Şanlıurfa province are required.

Key Words: Milk, Iron, Awassi sheep, ICP-OES

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Global Potential Distribution of Disease Vector Ixodes ricinus under Current Climatic Conditions

Feyzanur YILDIRIMTEPE ÇALDIRAN[1*], Shahid FAROOQ[2]

[1]Department of Molecular Biology and Genetics, Gaziosmanpaşa University, Tokat, Turkey
[2]Department of Plant Protection, Gaziosmanpaşa University, Tokat, Turkey
*Corresponding author: fyznr.yldrmtp@gmail.com

Abstract

Ixodes ricinus is among the most important vectors transmitting viral and bacterial diseases. Distribution of ticks is readily affected by livestock density and prevailing climatic conditions at different spatial scales. Climate changing is affecting the distribution of species at an enormous pace, which necessitates predicting geographic distribution of the species of particular interest at regional and global scales. Therefore, this study was conducted to infer the global potential distribution of I. ricinus under current climatic conditions. Maximum entropy model with default settings, 19 bioclim predictors, livestock density (cattle, buffalo, poultry, pigs, goat and sheep) and human population density was used to calibrate the model. The occurrence records of the species were collected from GBIF and published literature. A total 2806 occurrence records were used in model calibration. The model was calibrated on 70% of the data and evaluated on remaining 30%. The results indicated that the model predicted potential distribution of the species with high accuracy (AUC=0.93). The whole of Europe, parts of Turkey and Saudi Arabia were predicted highly suitable for the species. Human population density had the highest contribution towards model prediction, while cattle and poultry density had the lowest contribution. Overall, the model indicated presence of plenty of vacant niches for the species, which could result in severe disease problems. The areas predicted suitable and species has not been reported yet should be surveyed for the presence of species and patients must be screened for tick-borne diseases. Nonetheless, modelling study is needed to predict the potential distribution of the species under changing climate.

Key Words: Ixoders ricinus, MaxEnt, potential distribution, livestock density

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Xylazine-Ketamine, Xylazine-Propofol and Xylazine-Ketamine-Propofol Administration on Some Physiological Parameters in Sheeps

Esra GÖKALP[1*], Sema GÜRGÖZE[2], Semih ALTAN[3]

[1]Provincial Directorate of Food, Agriculture and Livestock, Şanlıurfa-TURKEY
[2]Dicle University Faculty of Veterinary Medicine, Biochemistry Department, Diyarbakır-TURKEY
[3]Dicle University Faculty of Veterinary Medicine, Surgery Department, Diyarbakır-TURKEY
*Corresponding author: esragokalp2009@hotmail.com

Abstract

This study was aimed at the investigation of the impact of xylazine-ketamine, xylazine-propofol and xylazine-ketamine-propofol combinations on certain physiological parameters in sheep. The study was carried out on 28 one-year-old, clinically healthy, nulliparous Zom ewes, which weighed 43.27±4.76 kg. The animals were randomly assigned in equal numbers (n= 7) to four groups, one of which was maintained for control purposes. Excluding the control group, Group 1 was given xylazine-ketamine (0.1 mg/kg-2.2 mg/kg), Group 2 was administered with xylazine-propofol (0.1 mg/kg-3 mg/kg) and Group 3 received xylazine-ketamine-propofol (0.1 mg/kg-2.2 mg/kg-3 mg/kg) by intravenous route. Physiological parameters were measured in all of the animals before the administration of the anaesthetic agents (at minute 0), and 15, 30, 60 and 120 min after the administration of the anaesthetics. The comparison of the three treatment groups with the control group for the physiological parameters measured demonstrated that the differences detected in heart rate at 120 min in Group 3, in respiratory rate at 5 and 30 min in Groups 1 and 3, in body temperature at 10, 15, 30 and 120 min in Group 2 and at 120 min in Group 3 were statistically significant. It was observed that the sheep well tolerated the alterations that occurred in their physiological parameters, as no disruption was detected in their vital functions.

Key Words: Propofol, ketamine, xylazine, sheep, physiological parameters

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Curcumin and *Lactobacillus acidophilus* on Certain Hormones and Insulin Resistance in Rats with Metabolic Syndrome

Gülay ÇİFTCİ[1*], Fatma Semina KAPAR[1], Alper ÇİFTCİ[2]

[1]Departments of Biochemistry, Faculty of Veterinary Medicine, University of Ondokuz Mayıs, Samsun
[2]Departments of Microbiology, Faculty of Veterinary Medicine, University of Ondokuz Mayıs, Samsun
*Corresponding author: gciftci@omu.edu.tr

Abstract

In this study, the investigation of the the effects of curcumin and *Lactobacillus acidophilus* probiotics given individually and in combination to insulin, resistin, leptin, adiponectin, apelin and nitric oxide levels and insulin resistance as experimental treatment of metabolic syndrome was aimed.
Five groups were formed in the study. Fructose (20%) was administered with drinking water for 8 weeks to develop metabolic syndrome. For treatment, curcumin (100 mg/kg/day) and L. acidophilus were given individually or in combination for the last four weeks. At the end of the experiment; insulin, resistin, leptin, adiponectin, apelin and nitric oxide levels were determined by ELISA and total cholesterol, triglyceride, glucose, albumin and total protein levels were determined by autoanalyzer.
The levels of apelin, resistin, glucose, total cholesterol and triglyceride increased significantly in the fructose given groups whereas curcumin and L. acidophilus probiotics and the both given groups for treatment started to decrease and the nitric oxide level decreased significantly. Insulin resistance was found to be significantly higher in the group with metabolic syndrome and insulin resistance developed. In the group given curcumin and probiotics, it was determined that the insulin resistance score was lowered compared to the group only given fructose.
In conclusion; the administration of *L. acidophilus* and curcumin in rats with metabolic syndrome caused by fructose improves hormone levels and reduces insulin resistance. These results showed that the addition of dietary curcumin and probiotics could be recommended for the treatment of metabolic syndrome.

Key Words: Curcumin; *Lactobacillus acidophilus*; Metabolic syndrome

Acknowledgements: This study was supported by Scientific Research Projects Commission of Ondokuz Mayis University (Project No: PYO.VET.1904.16.020).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Cytotoxic and Apoptotic Effect of Tunceli Garlic by Genetic Methods

Egemen Erdem ÖZTÜRK[1*], Kasım TAKIM[1], Akın YİĞİN[2], Hamza YALÇIN[3]

[1]Harran University, Faculty of Veterinary Medicine, Department of Biochemistry, Şanlıurfa-TURKEY
[2]Harran University, Faculty of Veterinary Medicine, Department of Genetic, Şanlıurfa-TURKEY
[3]Harran University, Faculty of Agriculture, Department of Animal Science, Şanlıurfa-TURKEY
*Corresponding author: vet.ozturk@harran.edu.tr

Abstract

Tunceli garlic (*Allium tuncelianum*) is an endemic garlic species that grows in the Tunceli and Munzur Mountains regions. Recently, the use of natural plants in the treatment of diseases (phytotherapy) has gained importance. Genetic studies are very important in explaining the mechanisms of anti-cancer activity of these and similar phytotherapeutics. In previous analysis and cytotoxic activity studies about this garlic species, major components of Methanol Extracts of Allium Tuncelianum (MEAT) were found to be malic, cinnamic and fumaric acids. Anti-cancer activity was examined on DLD-1, PC-3, HELA, ECC-1, HGC-27, HEK-293 and MCF-7 cell lines using the WST-1 method and MEAT was found to be effective at different doses on cancer cells , the highest cytotoxic effect was found on prostate cancer (PC-3) cells (IC50: 105 µg / ml). In this study, Real Time PCR was used to investigate the molecular genetic aspect of cytotoxic effect in prostate cancer (PC-3) cell line where the highest cytotoxic effect of MEAT was detected and CASPAS 3, CASPAS 9, IL-6, IL-8, MMP2 and MMP9 gene expressions were analyzed to determine apoptotic activity. It has been determined that MEAT increases CASPAS-3 and CASPAS-9 gene expressions and suppresses IL-6, IL-8, MMP2 and MMP9 gene expressions, resulting in a significant increase in apoptotic activity. For this reason, MEAT is thought to be effective by inducing apoptosis mechanism in prostate cancer. As a result, Tunceli garlic (Allium tuncelianum) can be used as an alternative treatment for prostate cancer patients.

Key Words: Allium tuncelianum, apoptosis, prostate cancer

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Protein Profiles and Specific Antigenic Glycoproteins of fish originated *Aeromonas hydrophila* and *Aeromonas salmonicida* Strains

Gülay ÇİFTCİ[1*], Arzu FINDIK[2], Behire Işıl DİDİNEN[3], Timur GÜLHAN[2], Fikri BALTA[4], Ertan Emek ONUK[5], Alper ÇİFTCİ[2]

[1]Departments of Biochemistry, Faculty of Veterinary Medicine, University of Ondokuz Mayıs, Samsun
[2]Departments of Microbiology, Faculty of Veterinary Medicine, University of Ondokuz Mayıs, Samsun
[3]Suleyman Demirel University, Faculty of Fisheries, Egirdir, Isparta
[4]Recep Tayyip Erdoğan University, Faculty of Fisheries, Department of Aquaculture, Rize
[5]Departments of Aquatic Animal Diseases, Faculty of Veterinary Medicine, Univ. of Ondokuz Mayıs, Samsun
*Corresponding author: gciftci@omu.edu.tr

Abstract

Aeromonas hydrophila and *Aeromonas salmonicida* subsp. *salmonicida* were important pathogens of fresh water fish. The aim of this study was the detection of protein profiles, antigenic proteins and specific glycoproteins of *A. hydrophila* and *A. salmonicida*. SDS-PAGE and western blotting techniques were used to determine the protein profiles and antigenic characterization of the strains. Specific glycoproteins were examined by glycoprotein detection and differentiation kits. After performing SDS-PAGE, the major protein bands of 52, 47, 45, 42, 38, 35, 29, 26, 23, 19, 16, 12.5, 12.3 and 10.5 kDa for *A. hydrophila*; 51, 47, 45, 44, 42, 35, 29, 26, 23, 19, 17, 12.5, 12.3 and 10.5 kDA for *A. salmonicida* subsp. *salmonicida* were determined. The bands of 47, 45, 38, 35, 32, 29, 27, 26, 25, 23, 22, 19, 17 and 16 kDa for *A. hydrophila* and 51, 42, 35, 32, 29, 23, 22 and 19 kDa for *A. salmonicida* subsp. *salmonicida* were characterized as antigenic by using specific immunsera. The glycoproteins of *A. hydrophila* were the bands of 38, 29 and 19 kDA. In *A. salmonicida* subsp. *salmonicida*, 38, 32, 29 and 19 kDA bands were glycoproteins. After glycoprotein-differentiation, 38, 29 and 19 kDA glycoproteins gave reaction with MAA and SNA lectins for each 2 strains. However, the glycoprotein of 32 kDa was not given any reaction with tested lectins. In conclusion, *A. hydrophila* and *A. salmonicida* subsp. *salmonicida* strains showed similar protein and glycoprotein profiles. The results of this study could be used to develop vaccines for fish.

Key Words: *Aeromonas hydrophila*, *A. salmonicida* subsp. *salmonicida*; protein; glycoprotein; antigenicity

Acknowledgements: The study was supported by TUBITAK (Project No: 111O806).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Molecular Diagnosis of Contagious Ecthyma in Kids with Mouth and Skin Lesions

Aynur SIMSEK[1*], Akin KOCHAN[1], Serdar UZAR[2], Hasan ICEN[1]

[1]Department of Internal Diseases, Faculty of Veterinary Medicine, University of Dicle, Diyarbakir-TURKEY
[2]Republic of Turkey Ministry of Food, Agr. and Livestock, Pendik Vet. Control Institute, Istanbul-TURKEY
*Corresponding author: asimsek@dicle.edu.tr

Abstract

Contagious ecthyma, an acute eruptive dermatitis of sheep an goats, is characterized by sequential papules, vesicles, pustules and scabs on the skin of the face, genitals and feet, and on the mucosae of the mouth, rumen and genitals. The disease is caused by a parapoxvirus of the family poxviridae and widespread in goat kids.
In recent years, disease outbreaks which cause similar clinical manifestation to contagious ecthyma have been observed in kids in the Diyarbakir region but diagnosis of the disease is usually based on clinical findings and laboratory diagnosis is not done. Hence the real status of diesase is unknown in Diyarbakir region. The aim of this study was to carry out the diagnosis of contagious ecthyma using molecular technique in kids in the region of Diyarbakir.
The study was conducted on twenty-one kids showing suspected clinical signs of contagious ecthyma. For diagnosis of the disease, scab samples were collected from lesions around the mouth, nose and ears of kids. Diagnosis of contagious ecthyma was confirmed with PCR and 95.24% (20/21) scab samples were found positive. The results showed that further investigation is needed to investigate the disease, determine its prevalence and facilitate the implementation of control measures in kids population with mouth and skin lesions in the Diyarbakir region.

Key Words: Contagious ecthyma, diagnosis, kids, PCR

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects on Levels Blood Trace Elements of Zn Suplemantation in Rats with Experimentally Induced Renal Failure

Semih YAŞAR[1*], Leyla MİS[2]

[1]Dept. of Medical Lab. Techniques, Voc. High School of Ozalp, Yuzuncu Yil Univ., Ozalp, Van-TURKEY
[2]Dept. of Physiology, Faculty of Veterinary Medicine, Yuzuncu Yil University, Tuşba, Van-TURKEY
*Corresponding author: yasarsemih@gmail.com

Abstract

In this study, the aim of this study was to investigate the effect of gentamicin application in rats on the levels of antioxidant-efficient zinc blood markers in rats with renal impairment. In this study, 32 Wistar albino rats weighing 200 to 250 g were used with temperature control and a 12-hour night cycle during the day. Control group was given normal saline intraperitoneally for 8 days. Renal failure group received 100 mg/kg gentamisin ip injection daily for 8 days. Zinc group was given combineted with water 227 mg/l ZnSO4 for 2 weeks. Renal failure+ Zn group was given combineted with water 227 mg/l ZnSO4 for 2 weeks and 100 mg/kg gentamicin for 8 days by ip injection. There was a statistically significant increase in Fe levels in the zinc group compared to the control group; There was a statistically significant decrease in Fe levels in the kidney failure group; There was a statistically significant increase in K levels in kidney failure + zinc group. As a result, zinc supplementation in renal failure has been shown to have a corrective effect on K and Fe levels.

Key Words: Blood, gentamicin, trace element, zinc

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Severe Bloodly Diarhae in a Calf Infected with *Giardia duodenalis* Assemblage D

Akın KOÇHAN[1*], Aynur ŞİMŞEK[1], Duygu Neval SAYIN İPEK[2], Hasan İÇEN[1]

[1]University of Dicle, Faculty of Veterinary, Department of İnternal Medicine, Diyarbakır-TURKEY
[2]University of Dicle, Faculty of Veterinary, Department of Parasitology, Diyarbakır-TURKEY
*Corresponding autor: akin.kochan@dicle.edu.tr

Abstract

The parasitic protozoan *Giardia duodenalis* (syn. *lamblia, intestinalis*) is common in domestic wild life, ruminants and humans.*Giardia duodenalis* is importantetiological agent of calf diarrhea.This protozoon parasite can cause enteritis, weight loss and growth retardation in calves. The aim of this study was to reporting clinical-laboratory findings and molecular diagnosis of *Giardi duodenalis* in a severe bloody diarrhoeic calf. The material of this case was consisted of a three months-old male calf, which bruogh with complaint of severe bloody diarrhea to the depertmant of Internal Medicine, Veterinary Faculty, Universty of Dicle. Calf was suffered from a severe bloody diarrhea and rectal temperature 39,80C, heart rate 92 beats/min. and respiratory rate 53 breaths/min. were recorded in clinical examination. For diagnosis of *Giardiasis,* faeces samples were collected from the rectum of calf.
Rapid diagnostic kit for diarrhea agent was used for diagnosis of Rotavirus, coronavirus, cryptosporidium, *E. coli* F5(K99), Cl. Perfiringes Type. None of them were positive. Giardia cysts were detected in the microscobical examination of faeces while coccidiosis was not found. PCR analysis was used to comfirmatory diagnosis of Giardiasis.Giardia duodenalis assemblage D was identified by PCR.
The results of this study indicated that Giardia duodenalis assemblage D may cause severe bloody diarhae in calves and should be considered as a potential problem for calves.

Key Words: Calf, diarhae, *Giardia duodenalis*, PCR

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Determination of Certain Biochemical Parameters and Mineral Levels in Healthy Angora (Mohair) and Halep (Aleppo) Goats

Esra GÖKALP[1*], Sema GÜRGÖZE[2]

[1]Provincial Directorate of Food, Agriculture and Livestock, Şanlıurfa
[2]Dicle University Faculty of Veterinary Medicine, Biochemistry Department, Diyarbakır
*Corresponding author: esragokalp2009@hotmail.com

Abstract

This study was aimed at the determination of certain biochemical parameters and mineral levels in blood samples taken from Angora (Mohair) and Halep (Aleppo) goats. Six-month-old and clinically healthy 46 Angora (Mohair) and 48 Halep (Aleppo) goats, which were raised in two separate holdings located in the Eyyübiye central district of the Şanlıurfa province, constituted the study material. Serum samples obtained from these animals were used for the measurement of ALP, ALT, AST, malondialdehyde, cholesterol, creatinine, glucose, total protein, triglyceride, urea, Ca, Na, K, P and Mg levels with the aid of a biochemical autoanalyzer. The comparative assessment of the serum biochemical parameters demonstrated that the cholesterol ($p<0.05$), creatinine ($p<0.001$), glucose ($p<0.01$), total protein ($p<0.01$), Ca ($p<0.001$), K ($p<0.001$), and Mg ($p<0.05$) levels measured in the Angora goats were significantly higher than the levels measured in the Halep goats. In result, it was concluded that the measurement of the serum levels of biochemical parameters would provide insight to veterinary practitioners on the health status of Angora and Halep goats.

Key Words: Biochemical parameters, Angora (Mohair), Halep (Aleppo), goat, serum

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Determination of Serum Protein Fractions in Calves with Neonatal Diarrhea

Ayşe USTA[1*], Sedat ÇETİN[2], Veysel YÜKSEK[3], Pınar EKİCİ[4], Semiha DEDE[2]

[1]Van YuzuncuYil University, Faculty of Science, Department of Chemistry, Van, 65080, Turkey
[2]Van YuzuncuYil University, Faculty of Veterinary Medicine, Department of Biochemistry, Van, 65080, Turkey
[3]Van YuzuncuYil University, Vocational School of Ozalp, Van, 65080, Turkey
[4]Van YuzuncuYil University, Van Health School, Van, 65080, Turkey
*Corresponding author: ayseusta@yyu.edu.tr

Abstract

Calf diarrhea is one of the important factors causing the serious economic loss in cattle breeding. This study was planned to electrophoretically investigate serum protein fractions in neonatal diarrhea.This study was carried out on 20 calves showing signs of diarrhea at 1-20 days of age in different breeds and sexes in the possession of the grower in the Van region. In addition, 10 healthy calves were used as the control group. Blood samples were taken from the V.jugularis of the animals. The collected serum was separated into protein fractions by cellulose acetate electrophoresis method (Helena Lab-TitanIII Serum Protein). The resulting bands were evaluated in the Platinum 3.0 program. Serum protein concentrations were determined. All results were compared statistically.When the concentrations of serum protein fractions are compared; There was no difference between the groups in terms of total protein, alpha globulins, and gamma globülin levels. Albumin and beta globülin levels were found to be higher in the diarrhea group than in the control group ($p \leq 0.05$). There was no difference in terms of albumin, alpha and beta globulin in grams (%)percent in all groups. However, the A/G ratio was found to be higher in the diarrhea group than in the control group ($p \leq 0.05$) and gamma globulin level was lower in the diarrhea group ($p \leq 0.01$). It was determined that serum protein fractions concentration did not change significantly in the diarrhea group. However, it was determined that the A/G ratio in grams percent increased, gamma globulins were found to be low.

Key Words: calf, electrophoresis, neonatal diarrhea, serum proteins, serum protein fractions

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Vitamin B9 (Folic acid) Levels in the Brown Swiss and Simmental Cow's Milk by Competitive ELISA Method

Nilgün PAKSOY[1], Serap KILIÇ ALTUN[2*], Hisamettin DURMAZ[2]

[1]Harran University, Veterinary Faculty, Department of Biochemistry, Şanlıurfa-TURKEY
[2]Harran University, Veterinary Faculty, Department of Food Hygiene and Technology, Şanlıurfa-TURKEY
*Corresponding author: skilicaltun@harran.edu.tr

Abstract

Vitamin B9, also known as folic acid, folate or vitamin B11 belongs to the group of water-soluble vitamins. Vitamin B9 functions as a coenzyme or cosubstrate in the metabolism for synthesis of amino acids, cell division processes and metabolism so must be included in the diet for daily requirements. In this study, it was aimed to determine the levels of vitamin B9 in the Brown Swiss and Simmental cow's milk by competitive ELISA method. Between February 2017 to August 2017, 20 Brown Swiss cows' milk samples and 22 Simmental cows' milk samples were gathered from two dairies. The average levels of vitamin B9 in Brown Swiss cows' milk samples were 3.27 ± 1.23 µg/100 g and Simmental cow's milk samples were 2.99 ± 0.88 µg/100 g, respectively. In total, the average vitamin B9 levels were 3.13 ± 1.07 µg/100 g. There was no statistical difference between breeds in terms of cows' milk folic acid levels ($P > 0.05$). Assuming that average daily level of intake sufficient to meet the nutrient requirements of healthy individuals 400 mcg, cow's milk is not a good source for adults.

Key Words: Vitamin B9 (folic acid), cow milk, ELISA

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Copper Concentrations of Cows' and Sheeps' Milk Collected in Harran Lowland of Turkey

Nilgün PAKSOY[1], Serap KILIÇ ALTUN[2*], Hisamettin DURMAZ[2]

[1]Harran University, Veterinary Faculty, Department of Biochemistry, Şanlıurfa-TURKEY
[2]Harran University, Veterinary Faculty, Department of Food Hygiene and Technology, Şanlıurfa-TURKEY
*Corresponding author: skilicaltun@harran.edu.tr

Abstract

The presence of essential elements in milk is vital for the nutrition of human beings and also all mammalians, particularly infants. The aim of this study was to determine the concentrations of copper in cows' and sheeps' milk by inductively coupled plasma-mass spectroscopy (ICP-MS) after microwave-assisted digestion with nitric acid and hydrogen peroxide. Between February 2017 to July 2017, 21 cows' milk samples and 40 sheeps' milk samples were gathered from two different regions of Harran lowland. The mean concentration of copper in cows'milk samples were 97.21 ± 6.33 ppb and in sheeps' milk samples were 135.13 ± 31.05 ppb, respectively. It was seen that there was a statistical difference between the levels of copper in cows' and sheeps' milk. The data revealed that copper levels in sheeps' milk was higher than the cows' milk. ICP-MS method of this study could provide a sensible alternative for the element characterization of milk samples.

Key Words: cows' milk, sheeps' milk, copper, ICP-MS

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of Phytochemical Content and Biochemical Activity of Some Garlic Species Grown in Turkey

Egemen Erdem ÖZTÜRK[1*], Kasım TAKIM[1]

[1]Harran University, Faculty of Veterinary Medicine, Department of Biochemistry, Şanlıurfa-TURKEY
*Corresponding author: vet.ozturk@harran.edu.tr

Abstract

Garlic (*Allium sativum* L.) is a plant species belonging to the family Liliaceae and has been used by many civilizations for the treatment of diseases for about 3000 years. There are so many allium species in Turkey. There are about 750 Allium species in the world and nearly 170 of them are found in Turkey. It is indicated that approximately 40% of the Allium species in our country are endemic. In this study, the species most preferred by the people in Turkey; Kastamonu, Tunceli, Sivas and Black Garlic species were compared in terms of their phytochemical compounds and biochemical activities. As phytochemical content; trace elements analysis, vitamin contents, fatty acid components and phenolic components were investigated. As biochemical activity; antioxidant, anticancer, antibacterial and antidiabetic activities were compared. Consequently the four types of garlic which studied have shown that they have same type of components at different rates and that similar biochemical activities have different effect levels. It has been determined that vitamin content of Kastamonu garlic is richer than other species and Tunceli Mountain garlic is richer in terms of mineral content. As a phenolic ingredient, they have different properties in terms of protection from diseases. Apart from the general characteristics of the garlic species mentioned above, *Allium tuncelianum* has more potent antioxidant activity and has a more balanced effect on cytotoxic activity than the other garlic species. According to this results, it is possible to say that *Allium tuncelianum* has superior properties in terms of health than other garlic.

Key Words: Garlic, Allium, Phenolic, Antioxidant

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

General Evaluation of Cytokine Response in Sepsis

Seçkin ÖZKANLAR[1*], Cihan GÜR[1]

[1]Ataturk University, Faculty of Veterinary Medicine, Department of Biochemistry, Erzurum, Turkey.
*Corresponding author: seckinozkanlar@yahoo.com

Abstract

Sepsis is a complex syndrome related with the severe infections by the response of microbial damage and inflammation characterized by coagulation and inflammation. Sepsis is also developed by the result of infectious causes such as bacterial, viral, fungal, parasiter, trauma and pancreatit as well as noninfectious causes. The body gives a reaction/ immune response depending on the type of microorganism. Cytokines are signal molecules which have peptide and glycoprotein structure and mediate hematopoetic cells, the development and the organisation of inflammatuar and immune response. Inflammatuar process includes in the releasing of pro-inflammatuar and anti-inflammatuar cytokines. Pro-inflammatuar cytokines are released at the initiation and the continuation of immune response. Anti-inflammatuar cytokines are released at the further stages of inflammation and they localise to prevent the malicious effects of severe systemic inflammation that may result in systemic inflammatuar response syndrome, multiple organ failure syndrome, shock and death. The effects of cytokines such as TNF-α, IL-1β, IL-8, IL-10 and IL-6 have been revealed in sepsis. Cytokines activate the releasing of inflammatuar mediators such as neutrophil protease and free oxygen radicals by the activation of neutrophils. Inflammatuar mediators depriviate the coagulation system by forming endothelial damage. The elevation of serum cytokine levels is being thought to have an impotant role at the development of septic syndrome. Current knowledge about the sepsis mechanisms and cytokine response have been evaluated in this article.

Key Words: Sepsis, Cytokine, Inflammatuar response

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

ESET Gene Expression in Cancer Cells

Sibel ÖZDAŞ[1*]

[1]Adana Science and Technology Univ., Faculty of Engineering, Dept. of Bioengineering, Adana-TURKEY
*Corresponding author: sozdas@adanabtu.edu.tr

Abstract

Head and neck cancer is one of the cancer types that exhibits poor treatment response and less survival rates despite the technological advancements in medicine. The main reason of this is the diseases is usually not diagnosed at an early stage and has a strong capacity for metastasis and relapse rates are high. The main treatment modalities for head and neck cancer are surgery and chemotherapy. These cause deformities in the patient's face, mouth and nasopharyngeal region which can significantly affect their ability to swallow and talk. For all these reasons, the patient's life quality is seriously affected by this disease. Furthermore, chemotherapy is not only toxic to both cancer and healthy cells but also does not always succeed in the complete removal of tumors. Also, it is not possible to predict the efficacy of a particular treatment in individual patients. Therefore, the development of alternative diagnosis and therapy modalities are of utmost importance. Genetic factors play a large role in cancer and thus there is a great desire to understand the effects of different genes in cancer and also to develop gene therapy for better treatments. ESET gene that we studied in this project is a critical gene which is known to play an active role in a number of different cancers, localized in nucleus and plays a critical role in tumor growth and metastasis. To date, ESET gene is not studied in head and neck cancers. This gene encodes a histone methyltransferase which regulates histone methylation, gene silencing, and transcriptional repression. ESET gene and protein were investigated in head and neck cancer and elevated activation was found in metastasis cell line compared with primer cell line. It has been proposed that about 5 fold elevation in ESET activation is an important marker in initiation of metastatic form of head and neck cancer.

Key Words: Head and Neck Cancer, ESET, metastasis, Real-Time PCR, Western Blot

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Bioactive Component of Cultured Spirulina in Turkey (Marmara Region)

Sibel BAYIL OĞUZKAN[1*], Betül KUT GÜROY[2], Sami Serhat TONUS[1], Derya GÜROY[3], Halil İbrahim KILIÇ[1]

[1]Department of Biology, Faculty of Art and Science, Gaziantep University, TR-27360, Gaziantep-TURKEY
[2]Yalova University Armutlu Vocational School, Department of Food Processing, Yalova-TURKEY
[3]Yalova University Armutlu Vocational School, Department of Aquaculture, Yalova-TURKEY
*Corresponding author: gokayoguzkan@gmail.com

Abstract

Spirulina is a filamentous microalgae composed of microscopic cells and is a member of the class Cyanobacteria. The optimum growth temperature for *Spirulina (Arthrospira) platensis* with thermophilic and alkalophilic properties is 35-37 ºC. Spirulina, which prefer high pH (9-10) levels, is an algae species that can be mono cultured due to these characteristics. The overall aim of its production is to provide protein sources to humans, as well as to benefit from the richness of its biochemical structure. In this study, some biological activities of Spirulina, which is produced in the 2500 L volume of transparent polycarbonate greenhouse at temperatures between 28-30 ºC.
Spirulina platensis was produced at Alg Production Unit of Yalova University Armutlu Vocational School. Spirulina platensis, produced in the conditions of June, 2015 and reaching harvest intensity, was filtered and washed with 45 micron plankton gland and then dried at -60 ºC. The obtained dry biomass was grinded and Spirulina flour was obtained. Analyzes were performed with Spirulina flour. Total amount of phenolic substance and total flavonoid substance content of Spirulina platensis were determined by using spectrophotometric methods. The amount of phenolic substance is expressed in mg gallic acid / 100 g weight. In the determination of flavonoid substance, the results are expressed as mg catechin / L. Antibacterial activity tests were determined by disk diffusion method using 4 different standard bacterial strains. For DNA-protecting activity, pBR322 plasmid DNA and UV-C method were used. Total oxidant status was determined using Rel Assay Diagnostics (TAS, TOS) and DPPH methods.
Antibacterial properties were not determined against the determined strains in Spirulina samples prepared at different concentrations. Spirulina samples are well-known to have antioxidant and antiradical activity. Spirulina platensis has been found to have good DNA protective activity. Better DNA protection has been identified, especially with samples from higher concentrations.

Key Words: spirulina, pbr 322, uv-c, DNA

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of *Treponema cuniculi* on Protein Metabolism of Rabbits

Yulia V. DUDA[1*], Larisa V. KUNEVA[1], Rimma S. SHEVCHIK[1], Ludmila V. KOREYBA[2]

[1]Dept. of Parasitology and Vet.-Sanitary Examination, Dnipro State Agrarian-Eco. Univ., Dnipro-UKRAINE
[2]Dept. of Surgery and Obstetrics of Domestic Animals, Dnipro State Agrarian-Eco. Univ., Dnipro-UKRAINE
*Corresponding author: dudajulia1976@gmail.com

Abstract

Treponema cuniculi, parasitizes the genital tract and the distal part of the rectum, adversely affects the protein metabolism. So, the albumin content in the blood falls down with the background increasing of globulins. A significant increasing of the concentration of α1- and γ-globulins has been established between the globulin molecules, The content of urea and uric acid increases. The concentration of creatinine is sharply reduced. In our opinion, this kind of changes in the protein metabolism in the blood of sick with spirochetosis rabbits is associated with the negative effect of the pathogen and it`s toxins on the liver cells, the function of the kidneys, and also the induction of mechanisms of nonspecific resistance.

Key Words: rabbit, spirochaetosis, *Treponema cuniculi*, protein metabolism, albumin,

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Histochemical and Immunohistochemical Investigation on Trophoblasts Characteristic in Different Stages of Pregnancy in Rats

İsmail Şah HAREM[1*], Belma ALABAY[2]

[1]Harran University Faculty of Veterinary Medicine Histology-Embryology Department, Şanlıurfa-TURKEY
[2]Ankara University Faculty of Veterinary Medicine Histology-Embryology Department, Ankara-TURKEY
*Corresponding author: harem63@hotmail.com

Abstract

In this study, it's aimed to examine trophoblast cells and other placental structures histochemically and immunohistochemically in various periods of gestation in rats. Twenty adult, healty and pregnant rats were used as materials. It was observed that there were significant AB (+) reactions in syncytiotrophoblasts, PAS (+) in giant cells and cytotrophoblasts in the first half of gestation in histochemical examinations. In the second half of gestation, glycogen cells stained PAS/AB (+) coloured in purple granules and small basophilic cells showed gradually increasing AB (+) reactions. In the advanced state of gestations, decidual cells having vacuoles had PAS (+) reactions increasingly. In immunohistochemical examinations, hormonal activities increased significantly in trophoblasts and giant cells during the period staining from the implantation to the end of gestation. Oestrogen and progesterone receptors were found in high density in the cytoplasm and nucleus of the cells. Progesterone receptors decreased slightly towards the end of pregnancy, however, reactions were high in receptors belonging to both hormones.

Key Words: Rat, Trophoblast, Placenta, Histochemistry, Immunohistochemistry

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Foot Diseases and Protection Methods in Cattle

Alper BAŞA[1*], İbrahim CANPOLAT[1]

[1]Department of Surgery, Faculty of Veterinary Medicine, Firat University, Elazig-TURKEY
*Corresponding author: alper_basa32@hotmail.com

Abstract

One of the most important health problems encountered in cattle breeding is foot diseases. Foot diseases are a serious problem that affects every stage of the animal's daily life, from the share of productivity. Foot diseases, weight loss, decrease in the increase in live weight, infertility, milk yield and lactation time reduction and early removal of breeder, such as causes negative. The most prominent symptom of foot diseases is lameness. Common diseases include sole ulcers, heel erosion, white line disease, digital - interdigital dermatitis, laminitis, and interdigital phlegmon.Protection methods; selection of stable floor, nutrition, foot baths and foot trimming. Foot diseases, especially subclinical in cattle, cause serious productivity losses worldwide. Applying the foot trimming routinely, preparing the nutrition program according to animal needs, selecting a suitable base and especially giving the necessary importance to foot baths prevent possible yield losses. The aim of this study is to investigate foot diseases and protection methods in cattle.

Key Words: Cattle, Foot disease, Protection, Lameness

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Sheep and Goat Dystocia Cases Submitted to Our Clinic: Etiology, Clinical Approach and Results

Ömer KORKMAZ[1*], Hayrettin ÇETİN[2], Mehmet O. ATLI[3], Abuzer K. ZONTURLU[1]

[1]Harran Univ., Faculty of Veterinary Medicine, Department of Obstetrics and Gynecology, Şanlıurfa-TURKEY
[2]Adnan Menderes Univ., Faculty of Vet. Medicine, Department of Obstetrics and Gynecology, Aydın-TURKEY
[3]Dicle Univ., Faculty of Veterinary Medicine, Department of Obstetrics and Gynecology, Diyarbakır-TURKEY
*Corresponding author: omerkorkmaz1978@gmail.com

Abstract

In this study, etiology, causes, treatment and results of treatment of sheep and goat dystocias seen in and around Şanlıurfa between 2003 and 2010 were evaluated. The study material consisted of 87 cases of which 57 were goats and 30 sheep brought to our clinic with dystocia complaints. All cases were divided into two groups: maternal (n=39, 44.83%) and fetal (n=48, 55.17%). Prolapsus vagina, inadequate cervical dilatation (ringwomb) and uterine inertia were observed in maternal dystocia cases while multiple pregnancy and fetal disturbances were detected in fetal dystocia cases. Cesarean operation conducted in 43 cases, extraction force in 40 cases and laparotomy in one case were performed in the treatment. As a result of caesarean operation were obtained 53 live, 27 dead fetuses. With the extraction force, 25 live and 27 dead fetuses were removed.

Key Words: Sheep, Goat, Dystocia, Clinical evaluation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Molecular Analysis of *Echinococcus granulosus* through Amplification of COX1 Gene Fragments from Sheep in Van province

Bekir OGUZ[1*]

[1]Department of Parasitology, Faculty of Veterinary Medicine, Van Yuzuncu Yil University, Van-TURKEY
*Corresponding author: bekiroguz@yyu.edu.tr

Abstract

The dog tapeworms *Echinococcus granulosus* develop hydatid cysts in especially liver and lungs organs in human and domestic animals all around world including Turkey. The infection contributes to significant economic loss in livestock industry. Cystic echinococcosis (CE) prevalence rates in cattle and sheep were determined as 38.5% and 46.4 in Van, respectively. Several host-adapted genotypes or intraspecific variants of *E. granulosus* have been described in different geographical areas as genotype G1 to G10. The aim of this study was to provide molecular characterization of *E. granulosus* isolated from sheep using cytochrome oxidase 1 (COX 1) genes. A total of 5 hydatid cyst samples were collected from 13 examined sheep samples derived from slaughterhouses. Genomic DNA was extracted from protoscoleces followed by PCR amplification of cytochrome oxidase 1 gene fragments. A 450-bp region of the mitochondrial cytochrome oxidase 1 (cox1) gene was amplified. Phylogenetic and molecular approaches were conducted using Clustal W multiple alignment program, Neighbor-Joining (NJ) and Maksimum parsimony algorithm. At the end of the study, sheep isolate (Accession no. MF544127) was completely in identical with GenBank Reference G1 strain (Accession no. KT382540.1, HF947556.1). This is the first study about molecular analysis of sheep isolates of *E. granulosus* in Van province. Further molecular studies are necessary for defining the strains of *E. granulosus* and understanding of the epidemiology of hydatidosis in the country.

Key Words: Sheep; PCR; cytochrome oxidase 1 gene, protoscolex of *E. Granulosus*

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Veterinary Gynaecology and Obstetrics in Diyarbakır Folklore

Özgül KÜÇÜKASLAN[1*]

[1]Dept.of Veterinary History & Deontology, Faculty of Vet. Medicine, Dicle University, Diyarbakır-TURKEY
*Corresponding author: ozgul.kucukaslan@dicle.edu.tr

Abstract

In the study, it was aimed to determine the folkloric data related to veterinary gynaecology and obstetrics in Diyarbakır province and contribute to the folklore researches. For this purpose, face-to-face interviews were held with the veterinarians who had information about the subject and with people working with livestock in Diyarbakır region on March 6, 2016 to February 16, 2018 and oral and written data were obtained from a total of 60 reference people through data collection forms. The study was conducted with qualitative research techniques and the data were evaluated by content analysis method. In the study, folkloric treatment methods of gynaecological diseases seen in animals and data about reproduction and obstetrics have been reached. The data on gynaecological diseases of animals are given under following headings; hypocalcaemia (milk fever), prolapsus vagina and prolapsus uteri, retentio secundunarium (retained placenta), udder diseases and contagious agalactia. Data on reproduction and obstetrics are given under the titles of fertility and infertility, sire selection, diagnosis of pregnancy, abortus, assisted birth, dystocia, postnatal care and feeding. It has been found that different nomenclature is used in the local language for the topic. In conclusion, it can be said that some curative plants, animal products and mineral raw materials are used in folkloric treatments, as well as rational methods, religious methods, empirical applications and superstitions are the methods have been for treatment of diseases.

Key Words: Diyarbakır, Folklore, Gynaecology, Obstetrics, Veterinary medicine

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Stereological Study on Lumbosacral Segments of Spinal Cord of Geese

Gamze ÇAKMAK[1*]

[1]Department of Anatomy, Faculty of Veterinary Medicine, University of Van Yuzuncu Yil, Van-TURKEY
*Corresponding author: vetgamze@hotmail.com

Abstract

In this study, the whole volume of the lumbosacral segments of spinal cord and volume densities of the grey matter and white matter were examined by stereological methods in adult geese at 3-4 kg weights. Ten geese were used as material without sex discrimination. All animals were anesthetized and perfused with 10% formaldehyde. In addition, after perfusion, the geese were kept in 10% formaldehyde during one week. Afterwards vertebral column was removed and lumbosacral spinal cord was excised. Sections at thickness of 5µm were taken from these tissue samples by the microtome. The cross sectional series were obtained by sampling from each segment from each goose at two hundred fiftieth section. Twelve sections were taken from each tissue specimens of every segments. Sections were stained by using hematoxylin eosin and photographed at a microscope. By using the Cavalieri Principle, the volume densities (volume fractions) of lumbosacral segments of spinal cord and volume of the white and grey matter of segments were calculated. In the study, the total volume of the lumbosacral segment, the volume values of the white and grey matter, and the ratio of these volume values to each other were calculated. The features of SHTEREOM 1.0 software are used for counting and calculating volume of section specimens.

Key Words: geese, lumbosacral segment, spinal cord, stereology, volüme

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Epidemiology of Schmallenberg Virus (SBV) Infection in Abortion Cases in Goats in Eastern Mediterranean Region

Fırat DOĞAN[1*], Seval Bilge DAĞALP[2], Bilal DİK[3], Aykut ÖZKUL[2], Veysel Soydal ATASEVEN[1], Touraj Aligholipour FARZANİ[2], Selvi Deniz DÖRTTAŞ[2]

[1]Mustafa Kemal University, Faculty of Veterinary Medicine, Department of Virology, Hatay-TURKEY
[2]Ankara University, Faculty of Veterinary Medicine, Department of Virology, Ankara-TURKEY
[3]Selçuk University, Faculty of Veterinary Medicine, Department of Parasitology, Konya-TURKEY
*Corresponding author: firat9837@gmail.com

Abstract

If the abortion rate is more than 5%, it is regarded as a serious economic loss. Infectious agents play an important role in the etiology of abortions; especially, abortions due to the viruses are common in many cases. Schmallenberg Virus (SBV), which emerged from these viruses in recent years, especially in Europe, has brought about significant economic losses for ruminant breeding as a result of weight loss, fertility and abortions as a result of many clinical symptoms in sheep, goats, and cattle. This infection is important for the country's economy not only because it causes an economic loss on the basis of the enterprise but also because of restrictions on the trade of animal and animal products in the world. Culicoides plays an important role in the transmission of SBV and is especially common in arid, humid, swampy and reed areas in summer.

In this study, the presence of SBV infection, one of the infections transmitted by Culicoides, taking into account the ecological conditions of the Eastern Mediterranean Region, has been investigated by molecular and serological techniques in goat herds which abortion is common. For this purpose, a total of 517 virologic control samples (438 leukocytes, 77 vaginal swaps, and 2 tissue samples) and 434 blood serum samples were obtained. 5.02% of the samples taken for virological control (26/517 (24 leukocytes and 2 vaginal swaps)); 14.5% (61/434) of serological control specimens were positive for SBV infection.

The aim of this study was to investigate the role of SBV infection as an etiologic agent in abortion cases in goats in the Eastern Mediterranean Region, virus detection in vaginal swap specimens of aborted goats was also considered as an important data on the epidemiology of the infection.

Key Words: Abortion, epidemiology, goat, Schmallenberg Virus

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Myiasis

Duygu Neval SAYIN İPEK[1*]

[1]Department of Parasitology, Dicle University Faculty of Veterinary Medicine, Diyarbakır-TURKEY
*Corresponding author: dneval.sayinipek@dicle.edu.tr, dnsayin@hotmail.com

Abstract

Myiasis is the infestation of living vertebrate animals and humans by the larvae of cer-tain fly species (Diptera), which feed on the host's living or dead tissues and body fluids. Myiasis, which causes health problems and economical losses in cattle and sheep, is fairly important for veterinary medicine. It is evident that Turkey which locates in subtropical climate zone is under therisk of myiasis. In our country; the main species of traumatic myiasis are *Lucilia sericata*, *Wohlfahrtia magnifica* in sheep and cattle, the causes of subdermal myasis are *Hypoderma bovis* and *Hypoderma lineatum* in cattle, and the cause of nasal myiasis is *Oestrus ovis* in sheep. Some researches indicate that prevalance of oestrosis in 36.7-72.7% and hypodermosis in 0.3-38.6% in Turkey. It was reported that primer species was *Wohlfahrtia magnifica* while seconder species was *Lucilia sericata* in traumatic myiasis cases in sheep and cattle. Appearing time of mature myiasis flies variesin connection with climate conditions. Consequently, there are regional differences in appearing times of myiasis and migration periods in animals. Therefore, climate conditions should taken intoconsideration for applying treatment and protection programs. This study aims to inform aboutclinical symptoms, pathogenicity, economical importance, treatments and protection cautions ofmyiasis infestations in cattle and sheep.

Key Words: Myiasis; Cattle; Sheep

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Pathological and Immunohistochemical Studies on Orchitis and Epididymitis in Rams Slaughtered at Slaughterhouse

Ömer Faruk KELEŞ[1*], Zabit YENER[1], Fatma İLHAN[2]

[1]Department of Pathology, Faculty of Veterinary Medicine, Van Yuzuncu Yil University, Van-TURKEY
[2]Department of Pathology, Faculty of Veterinary Medicine, Balıkesir University, Balıkesir-TURKEY
*Corresponding author: ofkeles@yyu.edu.tr

Abstract

In this study, pathological examinations of orchitis and epididymitis in Rams slaughtered in Van slaughterhouse were carried out. For this purpose, the testes and epididymes of a total of 2000 rams were grossly examined and in 29 (1.45 %) inflammatory changes were detected. Grossly and histopathologically, these inflammatory changes were classified as follows; spermatic granuloma (8 case: 0.4 %), epididymitis (12 case: 0.6 %) and orchitis (9 case: 0.45 %). According to grossly and histopathological features, orchitis were examined as with necrotic, abscess-necrotic and interstitial. As a result, these inflammatory changes determined cause hypospermatogenesis and aspermatogenesis in cryptorchidism and hypoplasia as well. Because rams used for breeding should be carefully examined in these lesions and these rams with lesions should not be used for breeding. In addition, as a result of immunohistochemical investigations carried out in cases determined epididymitis and orchitis, *Brucella melitensis* antigens were detected in 13 cases. These findings also indicate that Brucella melitensis is a very important pathogen in the formation of epididymitis and orchitis.

Key Words: Orchitis, epididymitis, *Brucella melitensis*, immunoperoxidase staining, ram

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Pathological Findings of Ostertagiosis in Sheeps

Ömer Faruk KELEŞ[1*], Turan YAMAN[1], Ahmet UYAR[2], Erhan AYNA[1], Zabit YENER[1]

[1]Department of Pathology, Faculty of Veterinary Medicine, Van Yuzuncu Yil University, Van-TURKEY
[2]Department of Pathology, Faculty of Veterinary Medicine, Mustafa Kemal University, Hatay-TURKEY
*Corresponding author: ofkeles@yyu.edu.tr

Abstract

Ostertagiosis is a nematode disease caused by the Ostertagia, which is one of the genuses of Trichostrongylidae superfamily. The animals which infected with this parasite are clinically characterized by anorexia, recession, edema under the jaw, diarrhea, and increased weight loss; macroscopically by the occurrence of gray-white nodule diameter of 1-2 mm in the abomasum. Ostertagiosis causes to economic losses with malnutrition and the reduction of food intake in ruminants. We aim to present the microscopic and macroscopic findings of ostertagiosis diagnosed in seven sheeps brought to our clinic as dead. In anamnesis; it was reported that sheeps were seen as appetite, decreased body weight, diarrhea and death. In the necropsy of sheeps, it was seen an exudate with the yellowish color and absorbent gelling consistency, and hyperemia and thickening in large spiral mucosal folds (plicae spiralis abomasi) and pyloris of abomasum. It was also seen 2-4mm in diameter, gray-white color, multifocal nodules in fundus and corpus of abomasum, some of which had hole in the middle. Numerous mature forms of parazites characterized with thin yellowish-brown strands were detected in the lumen of the abomasum. We also observed cataral enteritis in small intestines. As far as can be examined, we did not find any information about microscopic and macroscopic features of lesions caused by species of Ostertagia in abomasum of sheeps in our country. Therefore, the presentation of these findings of ostertagiosis diagnosed in seven sheeps has been found appropriate.

Key Words: Abomasum, lesions, ostertagia, sheep

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Distribution of Mast Cells in Goose (*Anser anser*) Kidney Tissue

Serap KORAL TAŞÇI[1*]

[1]Kafkas University, Faculty of Veterinary Medicine, Department of Histology and Embryology, Kars-TURKEY
*Corresponding author: serapkoral@hotmail.com

Abstract

This study was carried out to investigate the distribution of mast cells in kidney tissue of geese. Mast cells are one of the connective tissue cells, which have granules containing substances such as heparin and histamine in their cytoplasm and specific receptors for immunoglobulin E (IgE) on their surface. Six female geese were used in this study. After fixation in Bouin solution and routine histological process, the kidney tissues taken from geese were embedded in paraffin blocks. Tissue sections were stained with toluidine blue and metachromatic stained mast cells determined. Crossman's modified triple stain was applied to the sections to examine the histological structure of tissues. To determine the numerical distribution of mast cells, the average mast cell count was calculated by counting 100 units of area with an ocular micrometer under microscope (40x objective). SPPS 16.0 was used to calculate meaning of values.

In the histological examination, it was observed that goose kidney is consisted of multiple lobules composed of cortex and medulla. Mast cells were found more in the areas of the kidney where the perivascular area and intense connective tissue were located, and less than between kidney tubules. Mean mast cells number were determined as 1.611±1.99 / mm^2.

As a result of this study, localization and numerical distribution of mast cells in kidney tissue of geese were determined. It is thought that this study will contribute new studies will be done on kidney and urinary system of poultry.

Key Words: Goose; Kidney; Mast Cell

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Use of Intravenous Analgesic Drug (Metamizole Sodium) in the Horses

Cafer Tayer İŞLER[1*]

[1]Mustafa Kemal Üniversity, Veterinary Faculty, Depermant of Surgery, Hatay-TURKEY
*Corresponding author: cafer.isler@gmail.com

Abstract

This clinical study was planed for dosage of analgesic drug in the horse. Eight horses shown clinical colic symptoms in a horse company were performed. In this study, therapy was evaulated that use of intravenous metamizole sodıum in colic of horses. All of patient horses with colic symptoms were administrated intravenous metamizole sodıum as dosage of 10ml/100kg. Following the injection, all patient horses were swimlaned in the manage during 30 minutes. After the time colic symptoms dissappeared and diseases caused colic symptoms were detected the using other clinical examinations and technics (two cecal constipation, three gase of colic, three sand colic) and therapy was done with succesfully. There are different knowledge on dosage of metamizole sodium. In our study, the dossage of metamizole sodium was used intravenous administration of 10ml/100kg body weight calculation and this dosage was determined as sufficient to eliminat the colic symptoms.
As a resullt; metamizle sodium with high doses does not need to use in horses, if the metamizle sodium dose is used as 10ml/100kg body weight for aplication of right treatment protocol, colic cases was cured successfully.

Key Words: Horse, Analgesic, Colic, Metamizole sodium

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Clinical Evaluations of Claw Horn Disruption Lesions in Dairy Cattle

Mehmet AKKÖSE[1*], Celal İZCİ[2]

[1]General Directorate of Agricultural Enterprises (TIGEM), Ceylanpinar Agric. Enterprise, Sanliurfa-TURKEY
[2]University of Selcuk, Department of Surgery, Konya-TURKEY
*Corresponding author: akkosem2012@gmail.com

Abstract

Lameness is one of the most important welfare, health, and productivity problems in dairy production. The most common and intractable cause of lameness in dairy cattle is claw horn disruption (CHD) lesions. The objective of this study was evaluate CHD lesions of dairy cattle which in the same feeding and housing conditions. In the study, cadaveric feet of lame dairy cattle with CHD lesions were used. The study was carried out in 5 groups with 6 animals each (G1: heifers; G2: parity 1 cows; G3: parity 2 cows; G4: parity 3 cows and G5: parity >3 cows). Thus, 120 cadaveric feet (240 claws) of 30 dairy cattle were used as material in the study. It was observed that the prevalence of CHD lesions were different between the groups (33.3 %, 45.8 %, 18.8 %, 20.8 %, 56.2 % respectively), which was also statistically significant ($P < 0.05$). The highest CHD prevalence was found in G2 and G5 (parity 1 and parity >3). The differences between the front-rear feet and lateral-medial claw distribution of the lesions were not statistically significant ($P > 0.05$). It is interesting that the differences between the distributions of CHD lesions determined in the groups are not statistically significant. This contradicts the classical knowledge known as “the lesions occur mostly in the rear feet and the lateral claws”. It is thought that this is caused by the fact that almost all the feet and claws are affected as a result of long-term exposure of animals to the same etiologic factors. In conclusion, the prevalence of CHD lesions was effected by parity and the distribution of CHD lesions between the front-rear feet and lateral-medial claw was not differ when long-term exposure of animals to the same etiologic factors.

Key Words: Claw horn disruption lesions; Dairy cattle, Lameness

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of Serum IGF-1 in Infertile Cows with Subclinical Endometritis and Health

Birten EMRE[1*]

[1]Department of Obstetrics and Gyneacology, Veterinary Faculty of Harran Univ., 63200 Sanliurfa, TURKEY
*Corresponding author: birten@gmail.com

Abstract

IGF-1 is highly associated to energy balance, follicular growth, resumption of ovarian cyclicity and predicting reproductive performance in cattle. In this study, it was aimed to investigate insulin IGF-1 in healthy and infertile cows. Endometrial smear specimens were taken from 40 cows with fertility problems for cytological examination, and the cows were randomly divided into two groups. Group I (n = 20) was subjected to intrauterine administration of 40 mL (0.25 g/mL) of MC extract, group II (n = 20) was subjected to intrauterine administration of 40 mL of pure olive oil. The control group; group III (n = 20) was formed from a heifer without any gynecological abnormalities. Blood samples were taken to determine the level of IGF-1, starting with the day of intrauterine administration (day 0) and then for two weeks at weekly intervals (days 7, 14). Smear samples were stained with Giemsa to determine cytological changes. According to cytological findings, subclinical endometritis was a prevalent disorder in cows with infertility problem (82.5%; 33/40). There was statistically significant difference between groups for IGF at all weeks ($p<0.05$). Also in groups II and III; the change in the measured values according to week was statistically significant ($p<0.05$). Results herein remark the impotant role of the IGF-1 in the fertility of dairy cows and MC application may affect treatment.

Key Words: Cow, Infertility, Insulin-like growth factor 1, *Momordica charantia* L.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Current Invasive and Non-Invasive Surgical Techniques in Displacement of the Abomasum

Semih ALTAN[1*]

[1]Department of Surgery, Faculty of Veterinary Medicine, Dicle University, 21280, Diyarbakır-TURKEY
*Corresponding author: semih.altan@dicle.edu.tr

Abstract

Abomasum normally lies at right ventral side of abdomen floor. If it filled with gas or fluid, abomasum may be displaced to the between right flank and intestines (LDA) or between left flank and rumen (RDA). It is one of the most important problems of dairy cattle in early lactation period after calving because of serious economic loss. In this presentation, it was aimed to be given recent knowledges about treatment options of DA with invasive and non-invasive surgical techniques. In rare cases, abomasum spontaneously returns to its physiological position. In addition, rolling is used as conservative. However, in majority of cases, affected animal should be treated with invasive and non-invasive surgical techniques because of risk of the recurrence. In the LDA, non-invasive surgical techniques are fixing the abomasum to the abdominal wall percutaneous blindly with a bar suture or toggle-pin, one-step standing or dorsal recumbent laparoscopic abomasopexy or two-step laparoscopic abomasopexy. Invasive surgical techniques are right flank omentopexy, right paramedian abomasopexy, left flank abomasopexy. In the RDA, invasive techniques such as right paralumbar fossa omentopexy or right paramedian abomasopexy should be used.
In conclusion, although current scientific findings favor laparoscopic correction of uncomplicated LDA over other surgical procedures due to being less invasive, reduced risk of infection, quicker completion of surgery, less complications, quicker return to productivity, it is very important to determine the most appropriate techniques according to current conditions.

Key Words: Abomasum, LDA, RDA, Surgery, Treatment

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Pharmacokinetic and Pharmacodynamic Integration of Antimicrobial Drugs in Veterinary Medicine

Feray ALTAN[1*]

[1]Univ. of Dicle, Faculty of Vet. Medicine, Department of Pharmacology and Toxicology, Diyarbakir-Turkey
*Corresponding author: feray.altan@dicle.edu.tr

Abstract

Clinical pharmacology is based on the idea that the intensity of the pharmacological effect is a function of the amount of drug in the body, or more specifically, the concentration of the drug in the effect site. The information relevant to explanation of the rational dosing of antimicrobial drugs can be obtained from integrating pharmacokinetic (PK) and pharmacodynamic (PD) data. These data can also supply a base for choosing clinically thematic dosage regimens in disease models and clinical trials. The principles foundations and use of PK–PD integration are shown in this review.

PK/PD integration is explained how brings together data from separate or the same PK and PD studies. PK is defined as the drug concentration-time course of different body fluids, while PD is defined as the severity of the effect resulting from a given drug concentration assumed to be at the site of action. The most important pharmacodynamic parameter used to determine the effectiveness of an antibacterial drug against an infection-induced pathogen is the minimum inhibitor concentration (MIC) value. Information about the dosage regimen of the antibacterial drug can be given by integrating the values the concentration-time curve area (AUC) and peak plasma concentration (C max) with MIC of the antibacterial drug. For a long time pharmacologic locations of PK and PD were handled separately. PK/PD integration is combined the relationship between the concentration of the response obtained through the PD and the drug concentration at the site of action determined via PK.

In conclusion, the pharmacokinetic and pharmacodynamic parameters must be evaluated with together in order to predict the efficacy of antimicrobial drugs, to minimize the development of resistance and to determine the appropriate dosage regimen.

Key Words: Pharmacokinetic; Pharmacodynamic, Pharmacokinetic/pharmacodynamic integration; antimicrobial drugs

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Prevalence of Hydatidosis and Fasciolosis Among Sheep in Van Province and Its Economic Importance

Vural DENİZHAN[1*]

[1] Yüzüncü Yıl University, Özalp Vocational School, Van-TURKEY
*Corresponding author: vdenizhan@yyu.edu.tr

Abstract

This study was carried out to investigate the frequency of hydatidosis and fasciolosis infections in sheep slaughtered in a private abattoir in Van and to investigate the size of the losses to relieve these infections. The research was carried out between June-November, 2017, and 2444 sheep were examined for their internal organs. According to the results, 1053 (43,08%) of the sheep were infected with hydatidosis and fasciolosis. Hydatic cysts were found in 518 (49 %) of these infected animals, and it was seen in the lung of 94 (18,14 %), in the liver of 73 (14,09%), and both in the liver and lung of 347(%67,11) sheep. In the examination of liver bile ducts, in 343 (32,45%) of the infected sheep, fasciolosis and in 192(18,16%) of them hydatidosis and fasciolosis were detected. In the slaughterhouse where the survey is conducted, annual sheep cuts vary between 35,000 and 40,000. The number of sheep surveyed in this slaughterhouse constitutes only 3.1% to 3.5% of the annual cuts. Assuming that all of the infected livers are destroyed, it is estimated that a total of 955 liver units will be destroyed and 28 820 TL will be lost due to hydatidosis and fasciolosis. Considered annually, these economic losses can reach up 932 903 TL to 826 825 TL. In conclusion, the data obtained from a private slaughterhouse in Van proved that the prevalence of hydatidosis and fasciolosis in sheep poses a potential risk for human and animal health and lead to a significant economic loss.

Key Words: Hydatidosis, Fasciolosis, Sheep, Van

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Macroanatomic Investigation of the Nerves Innervation of the Shoulder and Elbow Joint Capsule in the Gazelle (*Gazella subgutturosa*)

İsmail DEMİRCİOĞLU[1*], Bestami YILMAZ[1], Rahşan YILMAZ[2], İsmail Şah HAREM[3]

[1]Harran University, Faculty of Vet. Medicine, Department of Anatomy, Sanliurfa-TURKEY
[2]Harran University, Faculty of Veterinary Medicine, Department of Pathology, Sanliurfa-TURKEY
[3]Harran University, Faculty of Vet. Medicine, Department of Histology an Embriology, Sanliurfa-TURKEY
*Corresponding author: idemircioglu@harran.edu.tr

Abstract

This study was aimed to determine the nerves involved in the innervation of the shoulder and elbow joint capsules of the gazelles (*Gazella subgutturosa*). In the study, the gazelle cadavers that brought to Harran University Veterinary Faculty Clinics for therapeutic purposes but not rescued or to Pathology Department for necropsy were used. Macroscopical and subgross dissection of the shoulder and elbow areas was performed by removing skin, superficial fat and connective tissues of the joint area. The ligaments of the shoulder girdle muscles were cut from the legs and the front extremities were separated from the body. For macroscopic examination of the nerve ending in the joint capsule, the nerves separated from the brachial plexus were obtained from both sides of the body and from the medial and lateral joints on each side. It was found that the articular capsule of shoulder joint was innerved by axillary and suprascapular nerve while articular capsule of elbow joint was innerved by musculocutaneous, median, ulnar and radial nerve. As a result, it was observed that the shoulder and elbow joint capsule was innerved by numerous nerves, and it was concluded that this strong innervation may be related to the ability of the gazelles to move quickly and agile.

Key Words: shoulder joint, elbow joint, joint capsule, innervation, anatomy

Acknowledgements: This study was supported by Harran University BAP Office (Coordinating Office of Scientific Research Projects-HÜBAK, Project No:15089).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Histological and Immunohistochemical Investigation of the Nerves Innervation of the Shoulder and Elbow Joint Capsule in the Gazelle (*Gazella subgutturosa*)

İsmail DEMİRCİOĞLU[1*], Bestami YILMAZ[1], Rahşan YILMAZ[2], İsmail Şah HAREM[3]

[1]Harran University, Faculty of Veterinary Medicine, Department of Anatomy, Sanliurfa-TURKEY
[2]Harran University, Faculty of Veterinary Medicine, Department of Pathology, Sanliurfa-TURKEY
[3]Harran University, Faculty of Vet. Medicine, Department of Histology an Embriology, Sanliurfa-TURKEY
*Corresponding author: idemircioglu@harran.edu.tr

Abstract

This study was aimed to determine the nerves involved in the innervation of shoulder and elbow joint capsule and to determine the mechanoreceptors assigned to the innervation in gazelle. In the study, the gazelle cadavers were used that brought to Harran University Veterinary Faculty Clinics for therapeutic purposes but not rescued and brought for necropsy in Pathology Department. Specimens taken for histological examination from the nerves ending in the shoulder and elbow joint capsule revealed as subgros were fixed in 10% buffered formaldehyde (pH 7.2-7.4) solution. After routine tissue application, 4 µ thick sections were taken from the tissue blocks embedded in paraffin. After staining with hematoxylin-eosin, the light was microscopically evaluated. Polyclonal anti-S100 antiserum (S100), Polyclonal rabbit anti-p 75 antiserum (p75) and Polyclonal rabbit anti-PGP 9.5 antiserum (PGP 9.5) antibodies were used for immunohistochemical studies. In the semiquantitative evaluation of nerve endings in the joint capsules, the intensity was observed the free nerve endings, Ruffini, Golgi-like and Pacini nerve endings, respectively. The intensity of nerve endings was semiquantitatively determined to be slightly higher in the elbow joint than in the shoulder joint.

Key Words: articular joint, mecanoreceptor, histology, immunohistochemistry, gazelle

Acknowledgements: This study was supported by Harran University BAP Office (Coordinating Office of Scientific Research Projects-HÜBAK, Project No:15089).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Genetic Diversity and Prevalence of Piroplasm Species in Equids from Turkey

Sezayi ÖZÜBEK[1*], Münir AKTAŞ[1]

[1]Department of Parasitology, College of Veterinary Medicine, Firat University, 23119 Elazığ-TURKEY
*Corresponding author: sozubek@firat.edu.tr

Abstract

Equine piroplasmosis (EP) is a protozoon disease caused by Babesia caballi and Theileria equi transmitted by ticks from the Ixodidae family. This study investigated the genetic heterogeneity and diversity of piroplasm genotypes using the Reverse Line Blotting (RLB) technique for piroplasm species in equids in Turkey. A total of 233 blood samples from 142 horses and 91 donkeys were collected in Şanlıurfa, Tunceli, and Iğdır. The RLB assay was performed for simultaneous detection of piroplasm species. The prevalence of piroplasm infection was 33.5% (95% CI; 27.4-39.9). T. equi was the most common species (%20.2; 95% CI 15.2-25.9), whereas B. caballi infection was not detected. Nine samples hybridized to the Theileria/Babesia and Theileria catch-all probes but did not hybridize to any species-specific probe tested, suggesting the presence of unrecognized Theileria variants or genotypes. Nine samples that gave Theileria spp. signal and two samples that gave T. equi specific signal were sent for sequence analysis and the A and D genotypes of T. equi were found. In addition, T. annulata, B. ovis, and B. canis species were detected in the samples and verified by sequence analysis in Turkey. More research is needed to understand the clinical impact of atypical piroplasm infections in equids.

Key Words: Piroplasms, Theileria equi, Reverse line blot, 18S rRNA gene, Equids, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Fe, Cu and Zn Levels in Some Unpackaged Sold Spices in Van Province

Ufuk MERCAN YÜCEL[1*]

[1]Van Yüzüncü Yıl Univ., Vet. Medicine Faculty, Pharmacology and Toxicology Department, Van-TURKEY
*Corresponding author: umercan@yyu.edu.tr

Abstract

The aim of this study is to determine the levels of Fe, Cu and Zn in black pepper, cumin and red pepper varieties used as spices for add flavor to food in Van province. Analysis of Fe, Zn and Cu levels in 25 red pepper, black pepper and cumin samples obtained from the market and spice store in Van province were done in ICP-MS. As a result of the analysis, the average Fe level was 557.5 µg g-1, Cu level was 19.4 µg g-1 and Zn level was 17.6 µg g-1 in pepper, the average Fe level was 467 µg g-1, Cu level was 12.3 µg g-1 and Zn level was 11.9 µg g-1 in the cumin, the average Fe level was 122.5 µg g-1, Cu level was 11.9 µg g-1 and Zn level was 11.9 µg g-1 in red pepper. The highest levels of Fe, Cu and Zn were found in black pepper and the lowest levels of Fe, Cu and Zn were found in red pepper. While the levels of Cu and Zn detected in black pepper, cumin and red pepper are below the limits approved WHO, the level of Fe detected in black pepper and in cumin is above the limits approved by WHO. For this reason, it is important to carry out continuous heavy metal analysis for human health, especially in terms of Fe level in black pepper and cumin.

Key Words: Spices, iron, copper, zinc

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Oxytocin Receptor Immunoreactivity in the Diabetic Mouse Kidney

Seyit Ali BINGOL[1*]

[1]Kafkas University, Medicine Faculty, Department of Histology and Embryology, Kars-TURKEY
*Corresponding author: seyitali.bingol@gmail.com

Abstract

Kidney is an important organ for survival. Blood comes into the kidney then it filters blood and sends it back into the body. Oxytocin receptor is necessary for oxytocin function. Oxytocin receptor was found in the kidney. The aim of this study was to research immunoreactivity of oxytocin receptor in the kidney of the diabetic mouse. Eighteen male mice were used in this study. Animal divided into three groups; control, sham and diabetic. Streptozotocin (100mg/kg) was injected introperitoneally into the diabetic group. Mice whose blood glucose was equal or above 200 mg/dl were accepted diabetic 72 hours after injection. Formol solution (10%) was used to fixate kidneys and then the specimens passed from routin histologic processes. Then those tissues were blocked in paraffin. After that the Avidin-Biotin-Peroxidase Complex (ABC) technique was used to find out the immunohistochemical localization of oxytocin receptor. The sections were counterstained with hematoxylin. Oxytocin receptor immunoreactivity was observed in cortex and medulla of the kidney but it is stronger in medulla than in cortex. The oxytocin immunoreactivity was stronger in kidney of the control and shame groups than that of the diabetic group. There was weak oxytocin receptor immunoreactivity in glomerulus of all groups but strong immunoreactivity in proximal and distal tubules and especially in the surround of them. It was concluded that diabetes decreased oxytocin receptor in the kidney when it was compared between groups.

Key Words: Immunohistochemistry, Kidney, Mouse, Oxytocin receptor

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Calf Losses and Some Health Problems During the Early Period after the Birth in Dairy Herds in Erzincan Provinces in Turkey

Ahmet Şener YILDIZ[1*]

[1]Dept. of Animal Health Economics and Mang. of Faculty of Vet. Medicine, Dicle Univ., Diyarbakır-TURKEY
*Corresponding author: ahmetsener@hotmail.com

Abstract

The aim of this study was to determine calf losses within the first month after the birth in dairy herds in Erzincan Provinces in Turkey. For this purpose, a total of pregnancy 683 data were obtained from four interview surveys which carried out in randomly selected 63 dairy herds out of 910 Erzincan Dairy Breeding Association herds during the 2016-2017. Among the 683 pregnancy data, there were 11.27 % dystocia cases. After eliminated abort (2.64%) and stillbirth (1.03 %) cases, a total of 661 healthy calves were born from 683 pregnancy cases. Among those cases, calf losses within the first month after the birth were calculated as 7.11%. Diarrhea cases (36.28%) were the most frequently occurred problems in calf within the first month after the birth. It was also reported respiratory system diseases (5.82%), tympani (5.79%), constipation (1.76%) and foot disease (1.35%) for calves. Furthermore, compared to general average, a few number of the calf losses were observed in small-scale of herds (5.86%), semi-open and open type of herds (5.79%), herds hired educated staff for dairy herds (2.04%), herds routinely taken counseling service (1.76%), and herds feed the calf with colostrum (6.65 %). ($p<0,05$)

Key Words: calf losses, health problems, dairy, incidence, abort

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Incidence of Postpartum Clinical Mastitis and Some Factors that Influence This Incidence in Dairy Herds in Erzincan Provinces in Turkey

Ahmet Şener YILDIZ[1*]

[1]Dept. of Animal Health Economics and Mng. of Faculty of Vet. Medicine, Dicle Univ., Diyarbakır-TURKEY
*Corresponding author: ahmetsener@hotmail.com

Abstract

The aims of this study were to determine the incidence of clinical mastitis cases, which are important endemic diseases of the postpartum period. In addition, some factors that influence this incidence such as the producer & dairy herds characteristics and preventive medicine choses of the producer were also examined. A total of 683 postpartum data were obtained from four interview surveys which carried out in randomly selected 63 dairy herds out of 910 Erzincan Dairy Breeding Association herds during the 2016-2017. The weighted average of the incidence of mastitis was calculated as 10.68%. The distribution of the incidence of mastitis was calculated as percentage following 6.20% in Montafon breed, 10.48% in Simmental breed and 15.65% in Holstein breed. The incidences of mastitis in small-scale of herd sizes, closed type of herd and non- free-roaming herd were %13.29, %11.44 and %12.12 respectively. Those percentages were higher than general average of incidence of mastitis ($P<0.05$). On the other hands, the incidences of mastitis were also calculated according to the producers criteria such as educated for dairy herds (%7,39), routinely taken counseling service (4.31%), applied teat Deeping (8.77%), applied dry season intermammary antibiotics (8.03%), regularly made California Mastitis Test (3.50%). The dairy herds which had the producer criteria mentioned above had lower incidence of mastitis compared to general average of incidence of mastitis ($P<0.05$).

Key Words: clinical mastitis, dairy, incidence, endemic, mastitis control

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of the Effect of Some Herbal Extracts on Erythrocyte Distribution Widths of Broiler Induced by Heat Stress

Bülent BAYRAKTAR[1*], Emre TEKCE[2], Mehmet GÜL[3], Kübra ÇINAR[4]

[1]Bayburt University, Faculty of Health Sciences, Dept. of Phsiotherapy and Rehabilitation, Bayburt-TURKEY
[2]Bayburt University, School of Applied Sciences, Bayburt-TURKEY
[3]Atatürk University, Faculty of Veterinary Medicine, Department of Animal Nutrition, Erzurum-TURKEY
[4]Bayburt University, Faculty of Food Engineering, Bayburt-TURKEY
*Corresponding author: bulentbayraktar@bayburt.edu.tr

Abstract

In this study, it was aimed to determine the effect of some herbal extract (Herbofloxacin oil, thyme oil, Citronella oil, clove Oil) on erythrocyte dispersion width (RDW), which is a reliable inflammation and oxidative stress indicator in various diseases, especially heart and vascular diseases. In the study, 400 specimens were used as animal material at the age of 1 day and Ross-308 etlik chicks were used at the age of 1 day. The study was divided into 8 different groups with 50 animals in each group. In each group, 10 animals in each pod were divided into 5 subgroups, 22 ℃ and 36 ℃ (Control (K), K+250 ml/l, k+500ml/l, k+750ml/l).At the end of the trial, a total of 80 animal cervical dyslocations including 10 randomly selected animals of each individual group were applied and biochemical and hematological values were investigated by taking the blood sample taken into the EDTA tubes. There was a significant decrease in RDW-SD ($p<0.05$) and RDW-CD ($p>0.05$) in the groups with 22 ℃ temperature stress. There was a significant decrease in RDW-SD ($p>0.05$) values in groups with 36 ℃ temperature stress and no effect on RDW-CD ($p>0.05$) values. The results of this study concluded that some herbal extracts used at different rates in broiler induced by temperature stress did not affect erythrocyte distribution width as a result of erythrocyte maturation process.

Key Words: Erythrocyte distribution volume, Brolier, Essantial Oil Mixture

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fibroblast Growth Factor-2 and Vascular Endothelial Growth Factor Expression in the Oviduct of Quail (Coturnix coturnix japonica)

İsmail Şah HAREM[1*], Ebru Karadag SARI[2], Melek KOÇAK HAREM[3], Mahmut SÖZMEN[4]

[1]Harran University, Faculty of Veterinary Medicine, Dept. of Histology and Embryology, Sanliurfa-TURKEY
[2]Kafkas University, Faculty of Veterinary Medicine, Department of Histology and Embryology, Kars TURKEY
[3]Namık Kemal Univ., Faculty of Veterinary Medicine, Dept. of Histology and Embryology, Tekirdag-TURKEY
[4]Kafkas University, Faculty of Veterinary Medicine, Department of Pathology, Kars-TURKEY
*Corresponding author: harem63@hotmail.com

Abstract

This study was aimed at determining the immunolocalization of VEGF and FGF-2 in the quail oviduct. The avidinbiotin peroxidase method was applied as an immunohistochemical technique. Immunostaining for VEGF and FGF-2 was rather intense in the luminal epithelium of caudal region of the infundibulum and of the isthmus , and it was observed that immunostaining was localized mostly in the apical cytoplasm. The epithelial cells lining the isthmus displayed diffuse cytoplasmic reactions for VEGF and FGF-2. While the reaction for VEGF was very intense, the reaction for FGF-2 was very weak in the luminal epithelium and moderate in the invaginated epithelium. In the magnum, VEGF (+) cells were present in the epithelium lining the mucosal folds, which were situated in regions with higher activity of the proprial glands. In the uterus and vagina, moderate to weak immunostaining for FGF-2 was detected in only the smooth muscle of the muscularis layer. The expression of FGF-2 and VEGF in the oviduct of healthy quails demonstrates that the reproductive physiology of these animals is regulated not only by hormonal mechanisms, but also by other molecular mechanisms.

Key Words: Quail, expression, FGF-2, oviduct, VEGF

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Evaluation of Fat and Fatty Acid Contents of Meats Obtained From Angus, Charolais and Hereford Breeds

Aydın DAŞ[1*], Ömer AKBULUT[2], Faruk BOZKAYA[1]

[1]Department of Livestock, Faculty of Veterinary Medicine, Harran University, Şanlıurfa-TURKEY
[2]Department of Animal Science, Faculty of Agriculture, Atatürk University, Erzurum-TURKEY
*Corresponding author: adas@harran.edu.tr

Abstract

This study was conducted to evaluate the fat and fatty acid contents of meat obtained from Angus, Hereford and Charolais raised in Şanlıurfa. Meat samples from beef cattles of 52 Angus, 21 Charolais and 27 Hereford breeds were used. Measurements of slaughter weight (SW) and carcass weight (CW) were obtained from the farm records, while those of the Musculus Longissimus Dorsi area (MLD) and back fat thickness (BFT) were assessed by images taken during the carcass shredding process. Total Fat (TF) amounts of MLD samples were determined by Folch method. The rates of saturated (SFA), monounsaturated (MUFA), polyunsaturated (PUFA) and unsaturated fatty acids (UFA) were determined by gas chromatography analysis. Significant differences in terms of MUFA and PUFA among breeds were observed, while no difference between breeds was determined in terms of other characteristics. The findings of the study indicated that Charolais breed had the highest ratio of PUFA (13.5%) and the lowest ratio of MUFA (32.6%). It was observed that Hereford (4.6 g / 100 g) and Angus (4.4 g / 100 g) breeds showed higher and Charolais (3.6 g / 100 g) breed showed lower values in terms of total fat amount in the meat. Significant positive and negative correlations TF amount in meat and MUFA (0,453) as well as PUFA (-0,494) were found respectively. As a result, it was determined that the Charolais breed produced a higher level of PUFA which is important in terms of human health compared to Angus and Hereford breeds.

Key Words: Beef cattle, Meat Quality, Back Fat Thickness, Total Fat, PUFA

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of Fattening and Carcass Characteristics of Beef Cattle Raising in Şanlıurfa Province and Effective Factors on These Features

Aydın DAŞ[1*], Ömer AKBULUT[2], Faruk BOZKAYA[1]

[1]Department of Livestock, Faculty of Veterinary Medicine, Harran University, Şalıurfa-TURKEY
[2]Department of Animal Science, Faculty of Agriculture, Ataturk University, Erzurum-TURKEY
*Corresponding author: adas@harran.edu.tr

Abstract

This study was carried out to compare the effects of factors on fattening and carcass characteristics of beef cattles raised in Şanlıurfa conditions. Records from 145 Angus, 54 Charolais, 112 Hereford, 36 Black Hereford, 34 Limousin and 24 Brahman beef cattle raised in a private farm were used. Body weight gain (BWG), daily live weight gain (DWG), carcass weight (CW) carcass yield (CY), slaughter weight (SW), fattening start weight (FSW) and body length (BL) were obtained from records of the farm. Area of Musculus Longissimus Dorsi (MLD) and back fat thickness (BFT) measurements were obtained from the images taken during the carcass fragmentation procedure. The effects of fattening age, fattening start weight (FSW), length of fattening period on DWG, BWG and SW parameters were found to be statistically significant. Furthermore, significant differences in CW, MLD area and CY were determined among breeds while not in BFT. The highest values of SW (500,7 kg), CW (272,9 kg), CY (%56,7), BWG (318,9 kg) and DWG (1,340 kg) were observed in the Charolais cattle, while the highest value for the MLD area (70.1 cm2) was found in the Limousine cattle. Breedes showed no significant difference in terms of BFT. High correlations were found between FSW and SW/BL (0,985), SW and CW (0,963) as well as SW and BWG (0,815). The results indicated that Charolais was the most suitable breed in terms of fattening and carcass characteristics under the environmental conditions in Şanlıurfa province.

Key Words: Beef Cattle, Fattening Performance, Carcass Characteristics, MLD Area, Back Fat Thickness

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Study of the Qualities of Lenox (*Brassica rapa* L.) Plant Silages which has Added Dried Sugar Beet Pulp and Molasses

Besime DOĞAN DAŞ[1*], Nihat DENEK[1], Mehmet SAVRUNLU[2], Sadık Serkan AYDIN[3]

[1]Dept. of Animal Nutr. and Nutritional Diseases, Faculty of Vet. Medicine, Harran Univ., Şanlıurfa-TURKEY
[2]Ministry of Food, Agrıculture and Lıvestock, Sanliurfa Food Control Laboratory-TURKEY
[3]Agricultural and Rural Development Support Organization, Coordinatorship of Şanlıurfa-TURKEY
*Corresponding author: bdas@harran.edu.tr

Abstract

This study was aimed to investigate the content of nutrient, in vitro organic matter digestion (IVOMD) and metabolic energy (ME) level of Lenox (*Brassica rapa* L.) plant silage which added different levels of dried sugar beet pulp (DSBP) and molasses. For this purpose, silages prepared control lenox plant silage, and adding 7%, 10%, 15% DSBP and 1%, 2%, 3% molasses. Lenox plant was harvested in encapsulation period, in after the bloom and prepared in the 1,5 L glass jar and 16 different silage groups. The silages were analyzed for the nutrient composition, fermantation kinetics, IVOMD and ME after 60 days of fermentation. According to results, the dry matter content of DSBP silages higher than control silages ($P<0.05$). Addition of DSBP and molasses was increased values of IVOMD and ME contents. The best values of IVOMD and ME were obtained by the group which had 15% DSBP and 2% molasses ($P<0.05$). The addition of the DSBP reduced the amount of ammonia nitrogen (NH3-N), also aerobic stability values were determined in low levels at non-molasses added groups. Higher lactic acid values were determined in the group of only molasses addition, also observed the increase of acetic acid values addition of DSBP and molasses. Highest butyric acid value was obtained control group and the lowest butyric acid levels was determined the group of 10% DSBP and molasses addition. As a result, lenox plant can be ensiled with 10-15% of DSBP and 2% of molasses.

Key Words: Lenox, Dried Sugar Beet Pulp, Molasses, Silage

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Could the Aglepriston Application Cause Mass Formation in the Mammary Glands?

Tuğra AKKUŞ[1*], Abuzer Kafar ZONTURLU[1], Ömer KORKMAZ[1], Birten EMRE[1]

[1]Harran University Veterinary Faculty Department of Obstetrics and Gynecology, Şanlıurfa-TURKEY
*Corresponding author: tugraakkus08@harran.edu.tr

Abstract

In this case report, a 20-month-old Labrador retriever that was brought to our clinic with a complaint of swelling in the breast lobes for a month is presented. It was noted that the patient did not give any birth, had mated and conceived during her first estrous (1 year), and was given aglepriston to terminate the pregnancy, and that her estrous cycles were regular. Physical examination revealed that both caudal inguinal (I2) mammary glands were swollen and other mammary glands were normal in size. In palpation, mammary glands were found to be soft, irreducible and consisted of masses with size of a rice grain. Ultrasound examination of the mammary gland revealed a solid mass lesion with a suspicious calcification and a hyperplastic gland structure, and no signs suggesting possible herniation were found. A medical approach for the treatment was chosen because of the young age of the animal. The Tarantula cubensis extract and levamisole were applied weekly as three sessions through subcutaneous and oral respectively. On weekly controls, it was determined that the swelling of the mammary had decreased and the mass was disappeared. As a result, detailed examinations of breast glands in female dogs have been found to play a major role in the early diagnosis of mass lesions. It is also stated that cases with mass can be seen at younger ages and it is suspected that any application which is given externally that can distort the hormonal balance may increase the incidence of mass formation.

Key Words: Mammary tumor, aglepriston, dog

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Macroanatomical Study of Front Leg Arteries in Guney Karaman Sheeps

Hülya KARA[1*], Hülya BALKAYA[1], Zekeriya ÖZÜDOĞRU[1], Derviş ÖZDEMİR[1]

[1]Department of Anatomy, Faculty of Veterinary Medicine, Ataturk University, Erzurum-TURKEY
*Corresponding author: h.goktas@atauni.edu.tr

Abstract

Güney Karaman Sheep which is prefered for livestock raising in Antalya, Mersin, Hatay ve Gaziantep is known as a native sheep race. It is very efficient in terms of meat and milk. Arterial feeding of the front legs is provided by a. axillaris which is a follow up of a. subclavia. In this study, it was aimed to investigate the morphological structure of the front legs' arteries in Güney Karaman Sheep. In the present study 8 male Güney Karaman Sheeps were used that they were bought from Konya Bahri Dağdaş International Agriculture Institute. All sheeps were sacrificed under anesthesia. After that, the arteria carotid communis were cut in the neck region of the anesthetized sheeps and the blood was drained off. The internal organs were extracted out by opening the body cavity along the median line of the materials. The front legs were separated from the body of the sheeps and were fixed in 10% formaldehyde solution. And then the arteries were examined by dissection. It was determined that a. axillaris divided into proximal and distal two branches were named a. brachialis and a. supscapularis at the articulatio humeri level. During the course of a. brachialis, a. profunda brachii, a. bicipitalis, a. nutricia humeri, a. collateralis ulnaris, a. transversa cubitis and a. interossea communis were separate from its. It was determined that a. mediana which is the continuation of a. brachiais had two branches named a. profunda antebrachii and a. radialis. It was observed that a. subscapularis had three branches named as a. toracodorsalis, a. circumflexa humeri caudalis ve a. circumflexa scapula. In conclusion; in this race it was found that the formation of front legs' arteries are similar to each other and with many sheep races, it was also found that there were some differences in terms of the course of some branches of these arteries.

Key Words: Guney Karaman, Sheep, Front Leg, Artery

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparative Macroanatomical Study on the Lumbar Plexus of the Magpie (*Pica pica*) and Chukar Partridge (*Alectoris chukar*)

Hülya KARA[1*], Derviş ÖZDEMİR[1]

[1]Department of Anatomy, Faculty of Veterinary Medicine, Ataturk University, Erzurum-TURKEY
*Corresponding author: h.goktas@atauni.edu.tr

Abstract

In poultry, the nervous system has many differences between species. Medulla spinalis has two thicknesses in the canalis vertebralis. Intumescentia lumbalis is one of them that the nerves named as lumbosacral plexus which are responsible for the innervation of the pelvic region with the back extremities originate from here. In this study it was aimed that comparatively determination the Lumbar plexus and its branches of magpie (*Pica pica*) and chukar partridge (*Alectoris chukar*) and anatomic differences between two species. In the present study, 20 magpies (*Pica pica*) and 20 chukar partridges (*Alectoris chukar*) were used. All animals were sacrificed under anesthesia and the blood was drained off and then the body was fixed in 10% formaldehyde solution. The nerves forming lumbar plexus were separately dissected and photographed in the both species. It was found that in both studied species the ventral arms of the 2nd, 3rd, 4th synsacral spinal nerves were created the lumbar plexus at the ventrolateral part of the synsacrum. İt was noted that nervus (n.) cutaneus femoris, n. coxalis cranialis, n. femoralis, n. saphenus, n.obturatorius originate from this plexus. It was found that n. ilioinguinalis exists only in the chukar partridge. In conclusion; in both species it was found that the formation of lumbar plexus and the nerves which is originate from this plexus are similar to each other and with many winged species, on he other hand it was found that there are some minimal differences.

Key Words: *Alectoris chukar*, Chukar partridge, Lumbar plexus, Magpie, *Pica pica*

Acknowledgements: This study is summarized a part of the Ph.D. Thesis, on which entitled 'Comparative Macroanatomical Study on the Lumbosacral Plexus of the Magpie (*Pica pica*) and Chukar partridge (*Alectoris chukar*)'.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Invesigation of the Infectious Agalactiae Infection in Sheep and Goat Milk Samples

Ayşe KILIÇ[1*], Nurgül BİRBEN[2], Fatma TÜRKARSLAN AKBABA[3], Muhammed Fatih TURSUN[2], Osman KOÇ[2], Aslıhan ARSLAN[2]

[1]Sivrice Vocational High School, University of Firat, Elazig-TURKEY
[2]Veterinary Control Institute, Elazig-TURKEY
[3]Konya Veterinary Control Institute, Konya-TURKEY
*Corresponding author: akilic23@gmail.com

Abstract

Mycoplasmas known to be responsible for many infections in ruminants causes vast economic losses in cattle, sheep and goat farming all over the world mainly in Europe and North America. Stress, immunodeficiency, incorrect antibiotic treatment, animal transports, mating, artificial insemination via infected sperm are important for increasing of number of mycoplasma cases. In this study total of 300 milk samples were collected from herds of sheep and goats around Elazığ and Malatya provinces. 300 milk samples were examined diagnosis of Contagious Agalactiae by molecular methods (specific PCR). According to molecular analysis of 300 milk samples positivity of *Mycoplasma* sp. was 45 % by using specific PCR. *Mycoplasma agalactiae* was found positive in 99 samples among 135 *Mycoplasma* sp. positive milk PCR samples.

Key Words: Sheep; Goat; *Mycoplasma*; Milk; PCR

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Determination of *Mycoplasma mycoides* subsp. *capri* and *Mycoplasma agalactiae* by the Serological Methods and PCR, Culture in Sheep and Goats

Ayşe KILIÇ[1*], Nurgül BİRBEN[2], Fatma TÜRKARSLAN AKBABA[3], Muhammed Fatih TURSUN[2], Osman KOÇ[2], Aslıhan ARSLAN[2]

[1]Sivrice Vocational High School, University of Firat, Elazig-TURKEY
[2]Veterinary Control Institute, Elazig-TURKEY
[3]Konya Veterinary Control Institute, Konya-TURKEY
*Corresponding author: akilic23@gmail.com

Abstract

The aim of this study was diagnosis of Contagious Agalactiae by bacteriological, serological and molecular methods in sheep and goats. Total of 300 ear swabs and serum samples were collected from herds of sheep and goats around Elazığ and Malatya provinces. 300 ear swabs were examined by using bacteriological and molecular methods (Group specific PCR), while 300 blood serum were investigated by serological methods (ELİSA). 87 (29 %) of 300 ear swabs were found as positive for *Mycoplasma* sp. according to bacteriological examination results, while positivity for *Mycoplasma* sp. was found 46.33 % among samples by using molecular diagnosis method which is group specific PCR. 69 of 139 *Mycoplasma* sp. positive culture PCR samples were positive for *Mycoplasma agalactiae*. Comparison of bacteriological and PCR results in swabs showed that 52 swab samples were positive for *Mycoplasma* sp. with specific PCR method, but none of them were found positive by using bacteriological diagnosis methods. Serum samples collected from herds of sheep and goats around Elazığ and Malatya, which shows symptoms of Contagious Agalactiae or without any symptoms, were investigated by *M.agalactiae* specific commercial ELISA according to the manufacturers' specification.10 of 300 serum samples were found seropositive (3.33 %) for *M.agalactiae.* In this study presence of *Mycoplasma agalactiae* and *Mycoplasma mycoides* subsp. *capri* in healthy and diseased herds of sheep and goat were investigated by using bacteriological, serological and molecular methods and *Mycoplasma agalactiae* was found as a major agent causing disease. *Mycoplasma mycoides* subsp.*capri* was not found in samples.

Key Words: Sheep; Goat; *Mycoplasma*; Culture; ELISA; PCR

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of the Effect of Some Plant Extracts on Serum Lipase Used in Drinking Waters at Different Rates in Heat Stress Induced Broilers

Bülent BAYRAKTAR[1*], Emre TEKCE[2], Mehmet GÜL[3], Kübra ÇINAR[4]

[1*]Bayburt Univ., Faculty of Health Sciences, Department of Phsiotherapy and Rehabilitation, Bayburt-TURKEY
[2]Bayburt University, School of Applied Sciences, Bayburt-TURKEY
[3]Atatürk University, Faculty of Veterinary Medicine, Department of Animal Nutrition, Erzurum-TURKEY
[4]Bayburt University, Faculty of Food Engineering, Bayburt-TURKEY
*Corresponding author: bulentbayraktar@bayburt.edu.tr

Abstract

Lipase, secreted from the pancreas and weighing about 42 kDa triglycerides 1. and 3. it is a digestive enzyme used in the diagnosis of pancreatic diseases, which hydrolyze and leaves monoglycerides behind. All kinds of damage to the pancreas tissue causes serum lipase activity to rise. Therefore, serum lipase activity is often referred to in the diagnosis of acute pancreatitis. Renal failure, enteritis and gastroenteritis, some liver diseases, bile duct carcinomas and lymphosarcoma in the gastrointestinal tract are other cases of non-panreatic origin and characterized by high lipase activity.

Chicks and piglets grown under the conditions of temperature stress have more body fat than those raised under thermostrual conditions. In vitro studies have shown that hyperthermia reduces hormone-sensitive lipase (HSL) activity in adipocytes (a circular cell between 10 and 200 ^m diameter) and increases lipoprotein lipase activity, although the mechanism of how high temperature promotes lipid deposition or protects it from lipolysis is not known for certain reasons. These enzymatic changes stimulate lipogenesis and prevent lipolysis. These changes show that the body temperature regulates the use of fat, whereas hypothermic and hyperthermic animals use adipose tissue reserves differently.

In this study, the effect of essential fatty acid mixture (EOM) (Eucalytus glabutus labii, tymus vulgaris, cymbopogon nardus and Syzgium aromaticum) on serum lipase activity in broiler drinking water fed under temperature stress was investigated. In the study, 400 male chicks were used as animal material at the age of 1 day and the experiment was divided into 8 different groups with 50 animals in each group. The groups were divided into 5 subgroups (22 ºC (control (k), k+250 ml/L, K+500 ml/l, k+750 ml/L), 36 ºC (stress control (SK), sk+250 ml/L, sk+500 ml/L, SK+750 ml/l) with 10 animals in each pod. At the end of the trial, 10 animals were selected depending on the chance of each individual group and 80 animal cervical dislocation methods were applied in total and the blood flow was taken into EDTA tubes and examined as biochemical and hematological.

Stress is a process that changes physiologically. The results of this study were determined that serum lipase activity was not affected by some herbal extracts used at different rates in broiler with temperature stress.

Key Words: Serum Lipase, Brolier, Essential Fatty Acid Mix941

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Seroprevalence of Bluetongue Virus in Sheep in Siirt Province

Özgür Yaşar ÇELİK[1*]

[1]Siirt University, Faculty of Veterinary, Department of Internal Medicine, Siirt-TURKEY
*Corresponding author: oyc@siirt.edu.tr

Abstract

Bluetongue is an arthropod-transmitted viral disease affecting domestic and wild ruminants. This study was carried out in order to determine Bluetongue disease seroprevalence among sheep in Siirt district. During the study blood sample was taken from 465 sheep. Samples were centrifuged for 10 minutes in 3000 cycle and serums were transferred to eppendorf tubes and stored at -20oC until they are used. Detection of Bluetongue Virus antibodies in serum samples was done with ELISA kit (Bluetongue Competition Ab Test, IDEXX). The study was carried out with ELISA method according to the suggestions of business firm. As a result of the study, 340 (73%) of samples were determined as seropositive.

Key Words: Sheep, Bluetongue, Seroprevalence, ELISA, Siirt

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Antibacterial Influence of Herbal Infusions on *Staphylococcus Aureus*, *Staphylococcus Epidermidis* and *Pseudomonas Aeruginosa In Vitro*

Volodymyr ZAZHARSKYI[1*], Tetyana FOTINA[2], Pavlo DAVYDENKO[1], Oleg KULISHENKO[1], Iryna BOROVIK[3], Viktor BRYGADYRENKO[4]

[1]Dept. of Epizoo. and Infectious Des., Faculty of Vet. Med., Dnipro State Agr.-Eco. Univ., Dnipro-UKRAINE
[2]Dept. of Vet.-Sanitary Ex., Microbio., and Zoohyg. and Food Safety and Quality, Sumy Nat. Agr. Univ., Sumy-UKRAINE
[3]Dept. of Bacteriology, Dnipropetrovsk Region State Laboratory of Veterinary Medicine, Dnipro- UKRAINE
[4]Dept. of Zoology and Ecology, Fact. of Bio. and Ecology, Oles Honchar Dnipro Nat. Univ., Dnipro- UKRAINE
*Corresponding author: zazharskiyv@gmail.com

Abstract

Objective: determining the antibacterial impact of herbal infusions on etalon cryogenic reference strains of *Staphylococcus aureus* ATCC 25923, *Staphylococcus epidermidis* ATCC 14990 and *Pseudomonas aeruginosa* 27/99 in vitro. Compared to the control, *S. aureus* was most strongly inhibited by *Eleutherococcus senticosus* (by 1.46 times compared to the control), *E. sieboldianus* (1.61), *Ficus benjamina* (1.35); *S. epidermidis* – *Punica granatum* (3.53); *P. aeruginosa* – *Yucca filamentosa* (1.10), *Rhododendron ferrugineum* (1.00), *Ceratonia siliqua* (1.21), *Trigonella foenum-graecum* (0.97), *Punica granatum* (5.46) and *Picea abies* (1.51), which could be recommended for use against poly-resistant strains of the abovementioned microorganisms.

Key Words: Antibacterial activity, Herbal infusions, Poly-resistant strains, *Staphylococcus*, *Pseudomonas*

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Antibacterial and Antioxidant Properties of Licoriece (*Glycyrrhiza glabra L.*)

Hisamettin DURMAZ[1], Mehmet HÜLÜL[2*], Hakim CELIK[3]

[1]Harran University, Veterinary Faculty, Department of Food Hygiene and Technology, Şanlıurfa-TURKEY
[2]Directorate of Rural Development and Organization Branch, Şanlıurfa-TURKEY
[3]Harran University, Faculty of Medicine, Department of Physiology, Şanlıurfa-TURKEY
*Corresponding author: mh_1387@hotmail.com

Abstract

In the presented study, it was aimed to determine antioxidant capacities and antibacterial features of extracts obtained from *Glycyrrhiza glabra* L., which were grown around the province of Hatay. Antibacterial effects of the plants were conducted on strains such as *Bacillus cereus*, *Bacillus subtilis*, *Staphylococcus aureus* Cowan I, *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Salmonella Enteritidis* and *Salmonella Typhimurium*. Antibacterial and antioxidant effects of the extracts of the plant were determined with an automated method and Disc Diffusion method, respectively. The ethanol extracts of the plant against *B. cereus* showed high inhibition zones. Ethanol extracts of the plant can be used as natural antibacterial additives against *B. cereus* for various food products. The TAC values are lower than the results obtained in other studies. The TOS of the water extract of the plant appears higher than the value of the ethanol of *Glycyrrhiza glabra* L. According to the TOS level of water extract of the plant found by our study may be considered that the consumption of the plant juice may contributed to increase of the TOS in cases of the failure of antioxidant defense system during the disorders.

Key Words: *Glycyrrhiza glabra* L., Antibacterial and antioxidant activity

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Antimicrobial Potential of Eucalyptus Essential Oil Against Common Food Spoilage Microorganisms and Its Cytotoxic Activity on NIH-3T3 Cells

Taçnur BAYGAR[1*], Tuba BAYGAR[2], Nurdan SARAÇ[3], Aysel UĞUR[4]

[1]Department of Seafood Processing Technology, Faculty of Fisheries, Mugla Sitki Kocman University, Turkey
[2]Material Research Laboratory, Research Laboratories Center, Mugla Sitki Kocman University, Turkey
[3]Department of Biology, Faculty of Science, Mugla Sitki Kocman University, Turkey
[4]Section of Medical Microbiology, Department of Basic Sciences, Faculty of Dentistry, Gazi University, Turkey
*Corresponding author: baygar@mu.edu.tr

Abstract

There is a growing interest in the discovery and development of new antimicrobial agents against multi-drug resistant bacteria. Pathogenic and food spoilage microorganisms are considered to be the main cause of food-borne diseases. To prevent the food quality, additions of chemical preservative agents or physical, chemical or biological decontamination treatments have been applied all over the world. Consumers demand less chemical agents and more natural foods for their health.

This study is aimed to determine the biological activities of *Eucalyptus globulus* essential oil (EEO). Antimicrobial activity was determined against common food spoilage microorganisms Candida albicans, *Bacillus cereus*, *Escherichia coli*, *Salmonella typhimurium*, *Staphylococcus aureus* and *Listeria monocytogenes* by agar well diffusion assay. Minimal Inhibiton Concentrations (MIC) and Minimal Lethal Concentrations (MLC) for microorganism were also measured by tube dilution assay. To assess the cytotoxicity of EEO, the MTT (3- [4, 5 dimethylthiazol-2-yl]-2, 5 diphenyltetrazolium bromide)-colorimetric cytotoxicity assay was evaluated using cultured fibroblast cell line, NIH-3T3 and IC50 value was calculated.

The highest antimicrobial activity was found on S. aureus (29.33±0.58 mm) which was followed by *C. albicans* (27.33±1.15 mm), *E. coli* (23.33±1.15 mm), *L. monocytogenes* (19.67±1.53 mm), *S. typhimurium* (19.33±0.58 mm), and *B. cereus* (17.67±1.53 mm). MIC values of EEO against *C. albicans*, *B. cereus*, *E. coli*, *S. typhimurium*, *S. aureus* and *L. monocytogenes* were found to be <1.5625 µg/mL, 6.25 µg/mL, <1.5625 µg/mL, >50 µg/mL and 12.5 µg/mL, respectively. The results of the study revealed out that EEO has a great potential to be used against food spoilage microorganism effectively.

Key Words: Eucalyptus; antimicrobial; food spoilage; cytotoxicity; cell culture

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fatty Acid Profile of Fish Crackers Made from *Luciobarbus esocinus*

Nermin KARATON KUZGUN[1*]

[1]Fisheries Faculty, Munzur University, Tunceli, Turkey
*Corresponding author: nerminkaraton@hotmail.com

Abstract

In this study, the aim was to study the production of fish crackers with Luciobarbus esocinus and to investigate fatty acid profile of these crackers. The dough was produced using 20 % fish meat, 1.10 % salt, 1.90 % sugar, 13 % sunflower oil, 1.63 % egg, 0.90 % vinegar, 13 % butter, and 48.47 % flour. The ingredients were stirred until a homogeneous mixture was obtained. The homogeneos mixture was compressed in an extractor and baked. The n6/n3 ratio of crackers was 1.36±0.04, the PUFA/SFA ratio 1.58±0.05 and the DHA/EPA ratio 1.73±0.01.

Key Words: Fish cracker; *Luciobarbus esocinus*; baking; snack food; fatty acid.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Investigation of the Chemical Changes at 2 ± 1 °C of *Luciobarbus esocinus* Fillets Packaged with Films Prepared with the Addition of Different Essential Oils and Chitosan

Nermin KARATON KUZGUN[1*], Ayşe GÜREL İNANLI[2]

[1]Fisheries Faculty, Munzur University, Tunceli, Turkey
[2]Fisheries Faculty, Fırat University, Elazığ, Turkey
*Corresponding author: nerminkaraton@hotmail.com

Abstract

In this study, the chemical changes during storage at 2 ± 1°C of *Luciobarbus esocinus* fillets coated with edible films prepared with chitosan and thyme, clove, rosemary essential oils were examined. To create the experimental samples, a total of six groups of *Luciobarbus esocinus* fillets coated with different edible films (normal, vacuum-packed, chitosan, chitosan with added thyme oil, chitosan with added clove oil, and chitosan with added rosemary) were used. The food composition of the fillets and experimental samples were determined after they had been coated with films. This study was performed as three replications, in two parallel analyses. The result of analysis showed that, the preservation period of fresh fillets ended on day 12, that of vacuum-packed fillets on day 15, that of fillets coated with chitosan and rosemary+chitosan on day 27, that of fillets coated with thyme+chitosan and cloves+chitosan on day 30. In comparison with the control group, fish spoilage was significantly delayed in samples coated with thyme+chitosan and cloves+chitosan ($P < 0.05$). The lowest PV, TBA and TVB-N content were obtained in fish samples coated with thyme+chitosan and cloves+chitosan.

Key Words: Chitosan, Edible Film, *Luciobarbus esocinus*, Essential oil, Shelf-Life.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Meat Species in Şiş Meatballs, Şiş Kebab and Lahmacun in Şanlıurfa and Mardin

Semra GÜRBÜZ[1*], Serap KILIÇ ALTUN[2]

[1] Mardin Artuklu Univ., Higher School of Tou. and Hotel Mang., Gastronomy and Cul. Art, Mardin, TURKEY
[2]Univ. of Harran, Faculty of Veterinary Medicine, Dept. of Food Hygiene and Technology, Şanlıurfa, TURKEY
*Corresponding author: semragurbuz@gmail.com

Abstract

Adulteration can be found frequently in food items with high economic value offered to human consumption. These adulteration are important for economic, religious, moral and health reasons. In this research, it was aimed to investigate the presence of meat species other than those declared to be in şiş meatballs, şiş kebabs and lahmacun mixture made from sheep and beef meat, which were served in Şanlıurfa and Mardin cities restaurants. A total of 65 samples consisting of 31 samples (17 şiş meatball, 4 şiş kebab and 10 lahmacun mixture) from Şanlıurfa and 34 samples (23 şiş meatball, 2 şiş kebab and 9 lahmacun mixture) from Mardin were purchased from the restaurants. The samples were tested for the presence of horse, pig and poultry meat using the ELISA-TEK-The Cooked Meat Species Identification Kit. Poultry meat was detected in 2 (5%) of 40 şiş meatball. The results of this study have shown that frequent and regular controls are of importance because the adulteration in the meat and meat based products may pose health risk and results in deceiving of the consumer and the unfair competition.

Key Words: Adulteration, ELISA, meat, detection of meat species

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Application of the Quantum Dots in Food Analysis

Burak DEMİRHAN[1*]

[1]Gazi University, Faculty of Pharmacy, Department of Food Analysis, Ankara, Turkey
*Corresponding author: burakdemirhan@hotmail.com

Abstract

Development of the reliable and economic methods in order to fast and sensitive detection in food analysis is the widespread issue in the World. Recently, quantum dots (QDs) have been used in a wide range of sciences such as environmental, biology, medicine and food sciences. QDs known as colloidal semiconductor nanocrystals are the important development in the rapidly growing nanotechnology world. QDs are inorganic semiconductor luminescent nanoparticles and they have 1-10nm size. QDs contain luminescent semiconductor nanocrystals which can be formed from group II-VI and III-V. The emission wavelength of the QDs can be adjusted by controlling the chemical compounds and particles size. These nanocrystals which formed from inert inorganic substance have good photochemical stability. Researches show that the ability of the CdSe/ZnS QDs against the photobleaching is higher (more than 10-100 fold) than those compared to the conventional fluorophores. QDs have many semiconductor combinations and these combinations could be successfully used in the foods in order to determine pathogens, proteins, and food contaminant and food additives.
As a result, there is a need for the development of rapid, sensitive and specific techniques in terms of food safety. QDs which known as multifunctional, intelligent, less toxic or non-toxic nanoparticles are important as a new technique in the food analysis.

Key Words: Food analysis, Food safety, Quantum dots

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Microbiological Quality of Traditional Mardin Sucuk

Semra GÜRBÜZ[1*], Aslı ÇELİKEL[1]

[1] Mardin Artuklu Univ., Higher School of Tou. and Hotel Manag., Gastronomy and Cul. Art, Mardin, TURKEY
*Corresponding author: semragurbuz@gmail.com

Abstract

In recent years, there has been an increasing interest in traditional products due to a general tendency that homemade products are more nutritious and healthier than industrial-type products. The Mardin Sucuk, which is a traditional meat product produced during the winter season in butcher shops or houses. It is fermented and dried under natural conditions and supplied for consumption. This study was performed to investigate the microbiological quality of sucuks that are produced with traditional methods and sold in small butcher shops in Mardin province. A total of 24 sucuk samples consisting of 19 with intestine casing, 4 with fabric casing and 1 with şirden casing were purchased from butchers in the city center of Mardin on the same day. All of the samples were analyzed for total mesophilic aerobic bacteria, coagulase-positive staphilococci, coliform, yeast and molds. Microbiological analyses were performed by petri plaque method. Out of 24 samples, 16 (66.6%) were found positive for coagulase-positive staphylococci. The average counts were $7.9x10^5$ CFU / g, $6.7x10^6$ CFU / g and $3.6x10^8$ CFU / g for mold yeast, coliform and mesophilic bacteria respectively. These products, which are produced under uncontrolled conditions by a non-standardized method, can pose health risks. For this reason, it is important that the enterprises producing such products should be strictly controlled for microbiological quality assurance and supervised to increase the awareness for producing healthy products.

Key Words: Food safety, Mardin Sucuk, microbiological quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Implementation of HACCP in Food and Beverage Businesses in Mardin

Semra GÜRBÜZ[1*], Aslı ÇELİKEL[1], Tuğba ARIK YÜKSEL[2], Lokman TOPRAK[2]

[1]Mardin Artuklu Univ., Higher School of Tou. and Hotel Manag., Gastronomy and Cul. Art, Mardin, TURKEY
[2]University of Mardin Artuklu, Higher School of Tou. and Hotel Manag., Hospitality Manag., Mardin, TURKEY
*Corresponding author: semragurbuz@gmail.com

Abstract

The purpose of this study was to determine the application level of HACCP implementation and to determine barriers for HACCP implementation in food and beverage businesses in Mardin.
In the study, a total of 87 catering managers (hotels, restaurants, kebab shops, fast food restaurants, patisseries, cafes) were interviewed face to face in Mardin province. A questionnaire was used to determine whether or not they had a HACCP system, the level of knowledge they have about the system, problems encountered in HACCP practices and the benefits of implementation.
Of the total 87 businesses, 18 (20.6%) were found to have the HACCP system and 69 (79.3%) did not. However, it has been determined that 72.4% of the managers think it is important to have a system of food safety. The 32.6% of the managers implementing HACCP systems have reported that the system provide order and discipline in the employees. Businesses that do not apply HACCP have reported that the main difficulties concerning the system were the insufficient information on the HACCP system (47.6%) and inadequate support guidelines and the complexity of implementation (38.9%).
The results of this study have shown that the number of businesses that implement HACCP is extremely small and that efforts to develop models that will increase the level of implementation should be made.

Key Words: HACCP, food safety, food businesses

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Different Thawing Methods on Microbiological Quality of Lahmacun

Hisamettin DURMAZ[1], Serap KILIÇ ALTUN[1], Mehmet Emin AYDEMİR[1*]

[1]Harran University, Veterinary Faculty, Department of Food Hygiene and Technology, Şanlıurfa-TURKEY
*Corresponding author: aydemiremin23@gmail.com

Abstract

In this study, the effects of different thawing processes on microbiological quality of frozen lahmacun samples were investigated. For this purpose, lahmacun samples prepared from raw calf meat were cooked at 240-260 ° C in a masonry oven and then they were kept at -18 ° C for 24 hours. Thawing process was done in a microwave oven, conventional oven, pan and at room temperature and then samples were taken from each thawing method. Plate Count Agar was used for total aerobic mesophilic bacteria count and Chromocult TBX Agar was used for E. coli count. Mean total aerobic mesophilic bacteria counts were 5.380 ±0.869, 2.683±0.710, 2.163±0.710, 2.231±0.710, 2,793±0.710 and 3.233±0.710 log10 cfu/g and mean E. coli counts were found 4.905±0.869, 0.667±0.710, 0.667±0.710, 0.0±0.710, 0.667±0.710 and 1.10±0.710 log10 cfu/g in raw, freshly cooked, microwave oven, conventional oven, respectively. No statistical difference was found among different thawing processes for microbiological quality of lahmacun samples. The lack of differences among the groups may be due to the very low initial microorganism load. As a result, our findings show that different methods such as microwave oven, conventional oven, pan and room temperature for thawing frozen lahmacun samples can be used safely in terms of microbiological quality.

Key Words: Lahmacun, Bacteria, Public health

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Detection of *Brucella* spp. and Brucella Specific Antibody from Milk of Livestock from Eastern Part of Turkey

Serap KILIÇ ALTUN[1*], Akın YİĞİN[2], Sevil ERDENLİĞ GÜRBİLEK[3], Hisamettin DURMAZ[1]

[1]Dept. of Food Hygiene and Technology, Faculty of Veterinary Medicine, Univ. of Harran, Şanlıurfa-Turkey
[2]Department of Genetics, Faculty of Veterinary Medicine, University of Harran, Şanlıurfa-Turkey
[3]Department of Microbiology, Faculty of Veterinary Medicine, University of Harran, Şanlıurfa-Turkey
*Corresponding author: skilicaltun@harran.edu.tr

Abstract

Brucellosis is an endemic disease in Turkey both for animals and human beings. The aim of this study was to investigate the presence of *Brucella* spp. DNA and anti-Brucella antibody in sheep, cow and goat milk gathered from bazaars and grocery stores in Şanlıurfa, Elazığ, Mardin, Erzurum and Adıyaman located in eastern Turkey. A total of 324 milk samples consisting of 180 sheep milk, 104 cow milk, 40 goat milk were analyzed. The presence of *BCSP31 gene* was examined by real-time polymerase chain reaction (RT-PCR) and anti-Brucella antibody was detected by indirect ELISA (i-ELISA). In total, 86 milk samples were found as positive for *Brucella* spp. by RT-PCR assay and 137 (42.28 %) of milk samples were found as positive for Brucella antibodies by indirect ELISA. This study indicates that milk consumed in eastern Turkey may pose a threat to the consumer health in terms of brucellosis. For detection of *Brucella* spp. jointly usage of both RT-PCR and i-ELISA methods should be performed more reliable results from milk samples.

Key Words: *Brucella* spp., milk, i-ELISA, RT-PCR

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Detection of Cow's Milk in Ovine Cheese Consumed in Şanlıurfa Province

Serap KILIÇ ALTUN[1*], Hisamettin DURMAZ[1]

[1]Dept. of Food Hygiene and Technology, Faculty of Veterinary Medicine, Univ. of Harran, Şanlıurfa-TURKEY
*Corresponding author: skilicaltun@harran.edu.tr

Abstract

Ovine cheese is a preferred type of cheese in our country. Because ovine milk is more expensive and difficult to obtain, cow milk is added in the production of ovine cheese. The aim of this study was to determine the presence of cow's milk by ELISA method in 90 ovine cheese samples including 45 packaged and 45 unpackaged samples which are offered for retail sale in Sanliurfa province. The proportion of cow's milk contained in ovine cheese samples was classified as below 0.1%, below 1% and over 1% according to the ELISA method. In 7 (7.7%) of 90 ovine cheese samples, it was below 0.1%, 53 (58.8%) in sample below 1% and in 30 (33.3%) over 1% cow milk was detected. To prevent adulteration in milk and dairy products, analytical procedures that can protect consumers from misleading labeling should be widespread.

Key Words: Ovine cheese, Cow milk, Bovine IgG, ELISA

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Isolation and Identification of Yeast from White Cheese

Sevda URÇAR GELEN[1*], Ziya Gökalp CEYLAN[1]

[1]Ataturk University, Department of Food Hygiene and Technology, Erzurum, Turkey
*Corresponding author: surcar@atauni.edu.tr

Abstract

In this study, yeast was isolated from fifty white cheese samples, produced by traditional methods, and then identified in VITEK2 Compact system. Cheese samples were analyzed by conventional methods. Fifty samples of the traditional white cheese were prepared appropriately and was inoculated to Rose Bengal Chloramphenicol (RBC) Agar, then microorganisms were examined morphologically. Species, that determined to be yeast were identified according to their biochemical characteristics with the VITEK2 Compact system. The most predominant species isolated were *Candida sake, Candida zeylanoides, Candida famata* and *Candida kefyr*. Other appearing species were *Candida sphaerica, Candida colliculasa, Candida boidinii, Candida lusitaniae, Candida parapsilosis, Candida sphaerica, Cryptococcus laurentii, Candida krusei* and *Saccharomyces cerevisiae*. Yeast found in many foods are known as a saprophyte, but that positively contribute to the fermentation and maturation by supporting the functions used of starter culture during the manufacture of certain dairy product. In this study were isolated some yeasts species could be considered as support culture.

Key Words: White cheese, Yeast, Vitek2

Acknowledgements: This study is in part of Miss Sevda URÇAR GELEN's Ph.D. thesis.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Simultaneous Determination of Aflatoxins in Some Dried Foods by HPLC-FD

Hisamettin DURMAZ[1*], Serap KILIÇ ALTUN[1], Mehmet SAVRUNLU[2]

[1]Dept. of Food Hygiene and Technology, Faculty of Veterinary Medicine, Univ. of Harran, Şanlıurfa/Turkey
[2]Şanlıurfa Food Control Laboratory Directorate, Şanlıurfa/Turkey
*Corresponding author: hdurmaz@harran.edu.tr

Abstract

Aflatoxins are a group of toxins that are secondary metabolites produced by various fungi that are growing on agricultural commodities. The aim of this study was to determine the contamination of total aflatoxins (AFs) in some dried foods. A sensitive, simple and fast method using high-performance liquid chromatography with fluorescence detector was conducted for the determination of aflatoxins (AFB1, AFB2, AFG1, AFG2). A total of 120 samples of dried fig, hazelnut, mixed nuts, peanut, pistachio and red pepper flakes samples were randomly collected from local markets and touristic bazaars in Şanlıurfa, Turkey. The average levels of AFs contents in the analyzed dried fig, hazelnut, mixed nuts, peanut, pistachio, and red pepper flakes samples were 0.28±0.08, 9.62±8.71, 0.38±0.20, 18.43±10.57, 4.34±4.21, and 13.31±3.02 µg kg-1, respectively. Limits of detection (LOD) and quantification (LOQ) ranged from 0.02-0.22 to 0.08-0.73 µg kg-1, respectively. The mean recoveries of AFs in spiked dried food ranged between 76.63% and 97.51%. As a result, it was found that the highest risk of AFs contamination in this study materials were dry peanuts and AFB1 is the most common aflatoxin which was found as a contaminant in dried foods.

Key Words: Aflatoxins, dried foods, HPLC

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Some Pathogenic Bacteria of Chicken Meat Presented for Sale in Erzurum

Serap KILIÇ ALTUN[1*], Mustafa ATASEVER[2]

[1]Dept. of Food Hygiene and Technology, Faculty of Veterinary Medicine, Univ. of Harran, Şanlıurfa-TURKEY
[2]Atatürk University, Vet. Medicine Faculty, Dept. of Food Hygiene and Technology., Erzurum-TURKEY
*Corresponding author: skilicaltun@harran.edu.tr

Abstract

Chicken meat; is a type of meat with high biological value. Microbiological studies with chicken meat, a protein-rich food, have shown that chicken meat can be contaminating with different pathogenic bacteria. This study aimed to isolate some bacterial pathogens on chicken meats which were presented for sale in Erzurum province using the conventional test methods. Using total of 60 samples consisting of 15 breasts without skin, 15 drumsticks without skin, 15 wings without skin, 15 skins of chicken carcasses were examinated. In 15 (25 %) out of 60 samples *Campylobacter* spp., 5 (8.3 %) out of 60 samples *Clostridium perfringens*, 46 (76.6 %) out of 60 samples *Escherichia coli*, 22 (36.6 %) out of 60 samples *Listeria* spp. were isolated. *Salmonella* spp. and *Staphylococcus aureus* were not isolated from samples. Average numbers of *Escherichia coli*, *Clostridium perfringens*, total mesophilic aerobic bacteria, total psychrotrophic aerobic bacteria and mold-yeasts were 2.9 x 102 cfu g-1, 6.8 x 102 cfu g-1, 3.8 x 104 cfu g-1, 1.9 x104 cfu g-1, 1.1 x 104 cfu g-1 in tested chicken meat samples, respectively. Besides, the average values of pH and water activity of chicken meat samples were determined 0.9220 and 6.58, respectively. It was concluded that the chicken meats offered for sale in Erzurum were contaminated with some pathogens and appropriate heat treatment is very important for public health.

Key Words: *Campylobacter* spp., Chicken meat, *Clostridium perfringens*, *Escherichia coli*, *Listeria monocytogenes*

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Methicillin Resistance Coagulase Positive *Staphylococci* and *Staphylococcus aureus* Isolated from Raw Milk and Cheese

Belgin SIRIKEN[1*], Gökhan İNAT[2], Tuba YILDIRIM[3], Ceren YAVUZ[3], Alper ÇİFTCİ[4]

[1]Dept. of Aquatic Animal Diseases, Faculty of Vet. Medicine, Ondokuz Mayıs University, Samsun-TURKEY
[2]Dept. of Food Hygiene and Tech., Faculty of Vet. Medicine, Ondokuz Mayıs University, Samsun-TURKEY
[3]Department of Biology, Faculty of Science, University of Amasya-TURKEY
[4]Department of Microbiology, Faculty of Veterinary Medicine, Ondokuz Mayıs University, Samsun-TURKEY
*Corresponding author: bsiriken@yahoo.com; bsiriken@omu.edu.tr

Abstract

In the present study, 100 CPS isolates recovered from raw cow milk and cheese samples were determined for *Staphylococcus aureus (S. aureus)* and methicillin-resistant (MR) properties. Today, MRSA is among the most important causes of antimicrobial-resistant health care-associated infections worldwide. For this, a single target PCR assay was performed to detect the *nuc* gene and another the mecA gene in the isolates for determination of S. aureus and MR isolataes. As a result; *mecA* was determined 15 out of 100 (15%-4 milk and 11 cheese origin) CPS isolates and the 15 isolates evaluated as MRCPS. While the 5 out of 15 (5%) isolates contained *nuc* evaluated as MRSA, the remaining 10 (%10) isolates were evaluated as MRCPS. In conclusion, raw cow milk and cheese have potential health risk for MRSA or MRCPS. These results confirm that MRSA is present in raw cow milk and cheese, which is a concern to human health.

Key Words: Milk, cheese, coagulase positive staphylococci, *S. aureus*, methisilline resistance

Acknowledgements: This study is a part of research studies, supported by the Scientific Research Project Program (Project Nr: PYO.VET.1901.16.001) of Ondokuz Mayis University, Samsun, Turkey.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Isolation, Determination of Antibiotic Resistance Profile and Extended Spectrum Beta-Lactamase (Esbl) Activity of the Enterobacterıaceae Isolates from Ground Beef and Chicken Meat Samples Consumed in Samsun Province

Belgin SIRIKEN[1*], Gökhan İNAT[2], Tuba YILDIRIM[3], Ceren YAVUZ[3], Alper ÇİFTCİ[4]

[1]Dept. of Aquatic Animal Diseases, Faculty of Vet. Medicine, Ondokuz Mayıs University, Samsun-TURKEY
[2]Dept. of Food Hygiene and Tech., Faculty of Vet. Medicine, Ondokuz Mayıs University, Samsun-TURKEY
[3]Department of Biology, Faculty of Science, University of Amasya-TURKEY
[4]Department of Microbiology, Faculty of Veterinary Medicine, Ondokuz Mayıs University, Samsun-TURKEY
*Corresponding author: bsiriken@yahoo.com; bsiriken@omu.edu.tr

Abstract

The aim of the study was to determine of Enterobacteraceae using classic culture technique (violet red bile glucose agar) in 80 chicken meat and ground beef samples (40 of which) consumed in Samsun province. In this study, it was determined in antibiotic resistance profile of the isolates using disk diffusion technique. The isolates were also evaluated ESBL properties using double disk diffusion technique. As a result, 80 isolates were evaluated as Enterobacteraceae. The isolates were resistance to ampicillin (47.5%), gentamicin (32.5%), imipenem(35%), streptomycin (27.5%), cefotaxime (22.5%), ceftriaxone (21.25%) chloramphenicol (21.25%), tetracycline (18.75%) nalidixic acid (16.25%) and ceftazidime (13.75).According to multidrug resistance (MDR) properties of the isolates, 15 (18.75%) isolates resistant to against 2 antibiotics, 18 (22.5%) against 3, 10 (12.5%) isolates against 4, 3 (3.75%) isolates against 5, 2 (2.5%) isolates against 6, 2 (2.5%) isolates against 7, 2 (2.5%) isolates against 9 and 1 (1,25) isolate resistant to against 10 antibiotics. In addition this findings, a total 6 out of 80 isolates were ESBL; 2 of which were belong to ground beef, and 4 of which were chicken meat origin isolates.

Key Words: Ground beef, chicken meat, Enterobacteriaceae, antibiotic resistance, expanded Spectrum beta-lactamase

Acknowledgements: This study was a part of the project supported by the Scientific Research Project Program (PYO.VET.1901.17.001) of Ondokuz Mayis University, Samsun, Turkey.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Nutrition and Epigenetic

Belgin SIRIKEN[1*], Fatih SIRIKEN[2], Cengiz ÜNSAL[2], Gülay ÇİFTCİ[3]

[1]Dept. of Aquatic Animal Diseases, Faculty of Veterinary Medicine, Ondokuz Mayıs Univ., Samsun-TURKEY
[2]Department of Physiology, Faculty of Veterinary Medicine, Adnan Menders University, Aydın-TURKEY
[3]Department of Biochemistry, Faculty of Veterinary Medicine, Ondokuz Mayıs University, Samsun-TURKEY
*Corresponding author: bsiriken@yahoo.com; bsiriken@omu.edu.tr

Abstract

Epigenetics is the study of mitotically heritable yet potentially reversible, molecular modifications to DNA and chromatin without alteration to the underlying DNA sequence. Many types of epigenetic processes have been identified such as methylation, acetylation, phosphorylation, ubiquitylation, and sumolyation. Among these, DNA methylation is the best known epigenetic process. Another significant epigenetic process is chromatin modification. Chromatin is the complex of proteins (histones) and DNA that is tightly bundled to fit into the nucleus. The complex can be modified by substances such as acetyl groups, enzymes, and some forms of RNA such as microRNAs and small interfering RNAs. This modification alters chromatin structure to influence gene expression. Epigenetic modifications provide a potential link between the nutrition status during critical periods in development and changes in gene expression that may lead to disease phenotypes. Increasingly, it is recognized that epigenetic marks provide a mechanistic link between environment, nutrition, and disease. Nutrients and bioactive food components can ifluence epigenetic phenomena either directly inhibiting enzymes that catalyze DNA metylation, histone modifications, or by altering the availability of substrates necessary for thos enzymatic reactions. For example, folate from green leafy vegetables, cinnamic acids from coffee, grain cereals, plums and kiwifruit, polyphenols such as epigallocatechin-3-gallate (EGCG) from green tea, resveratrol from red grapes and their products, sulforaphane and isothiocyanates from cruciferous vegetables, lignans from linseed, selenium and vitamin are considered as epigenetic nutritions.

Key Words: Epigenetic, nutrition, diet, health

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Incidence of Aflatoxin M1 in Mare's Milk from North of Kyrgyzstan

Meryem AYDEMİR ATASEVER[1*], Hayrunnisa ÖZLÜ[2], Mustafa ATASEVER[1], Fatih Ramazan İSTANBULLUGİL[3]

[1]Dept. of Food Hygiene and Technology, Faculty of Veterinary Medicine, Ataturk Univ., Erzurum, Turkey
[2]Department of Nutrition and Dietetics, Faculty of Health Science, Ataturk University, Erzurum, Turkey
[3]Dept. of Food Hygiene and Tech., Fact. of Vet. Medicine, Kyrgyz-Turkish Manas Univ., Bishkek, Kyrgyzstan
*Corresponding author: meryematasever@atauni.edu.tr

Abstract

Mare's milk, is one of the most important basic foodstuffs for the human populations in the areas of central Asia. There has been an increasing interest for the use of MM in human nutrition. MM similar to human milk in terms of some components (lactose, K, Na, and Mg). Aflatoxin M1 (AFM1) as a metabolite of AFB1 is created in body of human and some mammalian animals. The occurrence of AFM1 in milk makes it a particular risk for humans because of its importance as a foodstuff for adults and especially for children. There are several studies in the literature that determine the chemical and microbiological properties of MM. However, there was no study to determine the AFM1 content of MM in the literature. The aim of this study was to investigate the AFM1 content of MM collected from the dairy farm of Naryn, Issyk-Kul, Bishkek, Talas from Kyrgyzstan in milking season. A total of 75 MM samples were collected from mares in May, June, July 2017. The collected samples were kept at 4°C in sterile glass containers and were frozen within 24 h at -80 °C until the analysis. The samples' AFM1 content and concentrations were examined by competitive ELISA method. AFM1 was detected in 13.3% (10/75) of MM samples above the detectable level of 5 ng/l. The concentrations of AFM1 in MM samples were in the range of 6.48-25.45 ng/l. None of the samples exceeded the limit set by European Union. Since the level of AFM in the milk is low, it seems that there is no serious risk in terms of public health but new work is needed to determine AFM1 levels in milk.

Key Words: Aflatoxin M1, Mare's Milk, ELISA

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation on the Histopathology of Testes Anomaly in the Bull Slaughtered at the City of Van

Ahmet UYAR[1*], İbrahim YURDAKUL[2]

[1]Departments of Pathology, Faculty of Veterinary Medicine, Mustafa Kemal University, 31060-Antakya, Hatay
[2]Departments of Surgery, Faculty of Veterinary Medicine, Cumhuriyet University, 58140, Sivas
*Corresponding author: uyarahmet@hotmail.com

Abstract

The testes is very important in the production of semen or in the early detection of high yielding bulls to be used as breeders. Because it is clear that there is a very close relationship between semen quality and testicle. In this study, the aim is to determine the incidence of testicular anomalies and pathologic cases in the bulls cut in Van, and present the histopathologic studies. For this purpose, the testicles of 1133 bulls were examined in different breed (DAK: East Anatolian Red, Swiss Brown, GAK: South Anatolian Red, Holstein, Cross breed, Simental, Indigenous Black). Examined and pathologically proven testes were taken in Bouin solution for histopathologic examination. The number of animals used in the research was 1133, and 46 (4.06%) of them had different testicular pathologies. In this study, holstein (6.53%) and simental (5.55%) were found to be the first in terms of susceptibility to testicular anomaly and pathology whereas domestic breeds such as DAK (2.35%), GAK (1.88%) and Swiss Brown in the last order. According to these rates, Holstein and Simental breeds are more susceptible to testicular anomalies and pathologies than other breeds. Pathological findings in the testes of bulls cut in Van were examined and their incidence was tried to be evaluated. And this research has reached the conclusion that it will contribute to the discovery of the distribution and the rate of anomalies encountered in the testes in the bulls in the region.

Key Words: Bull, testes, anomalies, incidence.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Lumpy Skin Disease (Nodular Exanthem) Case in a Holstein Cattle

Ahmet UYAR[1*], Zabit YENER[2], Serkan YILDIRIM[3], Ömer Faruk KELEŞ[2]

[1]Mustafa Kemal University, Veterinary Faculty, Department of Pathology, Hatay
[2]Van Yuzuncu Yil University, Veterinary Faculty, Department of Pathology, Van
[3]Atatürk University, Veterinary Faculty, Department of Pathology, Erzurum
*Corresponding author: uyarahmet@hotmail.com

Abstract

Lumpy Skin Disease (LSD) is disease an acute, contagious and causing significant economical losses characterized by high fever and multifocal nodules on skin in cattles. In this case report, it was reported LSD infection in a Holstein cattle which was located in the central district of Şırnak City. In clinical examination, multifocal nodules in several centimeters size on skin and subcutis were found and also in anamnesis anorexia, a decline in milk production and weight loss were determined. The nodules were generally more common on head, neck, udder, genital area and perineum. Some of these nodules were ulcerated. Subcapsular lymph nodes were rather enlarged. Blood sample for Real Time PCR analysis and nodule samples from skin for histopathological investigation were taken. The result of LSD positive was detected according to Real Time PCR analysis. Histopathologically, dermatitis was observed characterized by balloon degeneration and hyperplasia in the epithelial cells of the epidermis and hair follicles, multifocal necrosis in the dermis with the infiltration of macrophage and lymphoplasmositic cells, vasculitis and thrombosis. Besides, scattered throughout the inflammation were variable numbers of sheep pox cells-histiocyte-like cells with large vacuolated nuclei and eosinophilic cytoplasmic inclusions. Intensive lymphoplasmositic cell infiltration and multifocal necrosis were observed between the muscle fibers. As a result, it is the first time in our country that a LSD infection was defined which characterized by focal disseminate nodular lesions on the skin and subcutis of a Holstein cattle with its macroscopic and microscopic findings.

Key Words: Lumpy Skin Disease, Histopathology, Cattle

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Toryum® Administration on Pregnancy Rate in Pirlak Ewes Synchronized with Progesterone during the Non-Breeding Season

Mushap KURU[1], Çiğdem ÇEBİ ŞEN[2*]

[1]Department of Obstetrics and Gynecology, Faculty of Veterinary Medicine, Kafkas University, Kars, Turkey
[2]Dept. of Reproduction and Artificial Insemination, Faculty of Vet. Medicine, Harran Univ., Şanlıurfa, Turkey
*Corresponding author: cigdemcebi@hotmail.com

Abstract

The aim of the study was to determine the effect of Toryum® (vitamin A, vitamin D3, vitamin E, vitamin K3, omega-3, sodium, potassium, calcium, magnesium, copper, iron, manganese, zinc, phosphorus, iodine, selenium, Mira İlaç Sanayi, Turkey) administration on the pregnancy rate of the Pirlak ewes that were subjected to estrus-synchronized out of the breeding season. In the study, 120 Pirlak ewes were used with 2-4 years old and clinically healthy. Intravaginal sponges containing progesterone were placed in 10 days (GI, n=30, GII, n=30) or 14 days (GIII, n=30, GIV, n=30) for estrus synchronization and the day of sponge removal 400 IU equine chorionic gonadotropin (eCG) was injected. In addition, Toryum® soft capsules were orally administered to GI and GIII one week prior to synchronization and on the sponge removal day. Estrus detection was started 12 hours after the eCG injection. When estrus was detected, sheep was mated with fertility-proven rams. Pregnancy diagnosis was performed by transrectal ultrasonography 30 day after mating. In all analyses, the SPSS® (SPSS version 18.0, Chicago, IL, USA) software packet programme was used According to the data, estrus rate, conception rate, lambing rate and litter size were not statistically different between the groups ($P>0.05$) but estrus onset ($P<0.001$), pregnancy rate ($P<0.05$) and multiple birth rates ($P<0.05$) were statistically different between the groups. In conclusion, it has been determined that application of Toryum® vitamin-mineral capsule with progesterone-based estrus synchronization to Pirlak ewes during non-breeding season may increase fertility rates.

Key Words: Estrus synchronization, Pirlak ewes, pregnancy, progesterone, Toryum®

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Necropsy Findings Observed in Animals Dead Due to Faulty Drug Use

Turan YAMAN[1*]

[1]Department of Pathology, Faculty of Veterinary Medicine, Yuzuncu Yil University, Van-TURKEY
*Corresponding author: turanyaman@yyu.edu.tr

Abstract

The aim of the present study is to draw attention to animal deaths caused by faulty drug use and to provide solutions to this problem. For this purpose, the necropsy findings of animals who have died as a result of incorrect drug use were evaluated. Firstly, the cases involving complaints of animal deaths that occurred three days after the use of antiparasitic medicines were evaluated. Necropsy showed that the intrahepatic bile ducts, gall bladder, and duodenum were filled with fasciola hepatica. Secondly, a case was evaluated in which lambs were paralyzed in the hind limbs following injection and death subsequently occurred. When the injection site was examined in detail during necropsy, hemorrhage, degenerative, and necrotic changes were detected in the nervus ischiadicus and its vicinity. As for the third case, two breeders reported the deaths of their lambs one day after injection of a commercial preparation containing a combination of Se and Vit E (Yeldif®). We performed an experimental study to determine whether these post-injection deaths occurred as a result of the drug used or due to a faulty application of the medicine. It was concluded that bacterial contamination occurred as a result of incorrect drug administration by the breeders and injection of a high dose of the contaminated drug. As a result, the animal owners (or growers) must be informed through the competent authorities that the deaths were due to erroneous injections and that drug applications are causing significant economic losses.

Key Words: Faulty injection, drug, necropsy, sheep

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Radiographic Assessment of Epiphyseal Plate Closure Time of Metacarpus and Phalanges in Goat Kids

Abdullah KARASU[1], Musa GENÇCELEP[1], Caner KAYIKCI[1*]

[1]Van Yuzuncu Yil University, Faculty of Veterinary Medicine, Department of Surgery, Van, TURKEY
*Corresponding author: caner5246@hotmail.com

Abstract

In this study, we aimed to assess epiphyseal plate closure time of metacarpus, first and second phalanges, growing amount in the related bones and effect of gender on epiphyseal plate closure time. The study was carried out on 30 yeanlings, 15 males and 15 females. Each month DP radiographs were taken until the epiphyseal plate closure in related bones were completed (24 months). Bone radiographs were measured on negatoscope and values were recorded. At 12th month, average lengths of first phalanges were measured as 36.05 ± 1.57 mm in females and 36.40 ± 1.67 mm in males; the average length of second phalanges was measured as 24.01 ± 1.83 mm and 24.16 ± 1.32 mm. The average metacarpus lengths were measured as 104.00 ± 3.56 mm in females at the 23rd month and 104.85 ± 2.75 mm in males at the 24th month. Epiphyseal plates were open during first 5 months in both males and females; between 5th and 6th months they began to close. Complete closure of the distal epiphyseal plates in females was completed between 20th and 23rd months, and between 21st and 24th months in males. In both genders, the proximal epiphyseal plates of the 1st and 2nd phalanges began to close between 5th and 6th months, and the complete closure occurred between 10th and 12th months.
As a result, some determinations were obtained: metacarpal growth occurred distally; nevertheless, growth of 1st and 2nd phalanges occurred from proximally; gender has no effect on length of 1st and 2nd phalanges; the distal epiphyseal plates of metacarpus were closed between 20th and 23rd months in the females and 21-24th months in males; the proximal epiphyseal plates of the first and second phalanges were closed between the 10th and 12th months in both gender.

Key Words*:* Metacarpus, Phalanx, Epiphyseal Plate, Radiography, Goat Kids

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Case of Cutaneous Actinobacillosis in a Dairy Cross-Breed Brown Swiss Cow

Abdullah KARASU[1], Serkan YILDIRIM[2], Caner KAYIKCI[1*], Yağmur KUŞCU[1], Tunahan SANCAK[1]

[1]Van Yuzuncu Yil University, Faculty of Veterinary Medicine, Department of Surgery, Van-TURKEY
[2]Ataturk University, Faculty of Veterinary Medicine, Depertment of Pathology, Erzurum-TURKEY
*Corresponding author: caner5246@hotmail.com

Abstract

In this study, we aimed to evaluate the clinical and histopathological findings and treatment outcomes in a 5-year-old Brown Swiss crossbred cow with cutaneous actinobacillosis. In the medical history, the information was gained that different sizes and gradually growing mass formed in the left paralumbar fossa region and medial aspect of the hind limb on the cow. Clinical examination revealed a cutaneous mass on the paralumbar fossa in the egg size, walnut sized two masses on the medial aspect of the left hindlimb, and 5 cutaneous granulomatous masses in hazelnut size on the medial aspect of the right hind limb. The masses in the paralumbar fossa and the medial aspect of the left hind limb were totally excised. No surgical intervention was performed for other masses. Histopathological examination of the excised masses revealed an Actinobacillus-like bacterium as the cause of the chronic pyogranulomatous inflammation. Postoperatively, oral sodium iodide, parenteral procaine penicillin and dihydrostreptomycin sulfate were administered. As a result, pyogranulomatous cutaneous lesions formed by Actinobacillus lignieresii are very rarely formed in cattle, so it is thought that actinobacillosis should not be ignored in the differential diagnosis of pyogranulomatous lesions formed in the skin. In addition, it has been concluded that using antibiotics for a long time with sodium iodide and the surgical method can be successful in the treatment of the lesions.

Key Words*:* Cutaneous actinobacillosis, pyogranulomatous, cow

POSTER PRESENTATIONS

Food Engineering Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Variations in Vitamins of Milks from Different Species

Damla YANMIŞ[1*], Hayri COŞKUN[2]

[1]Dept. of Gastronomy and Culinary Arts, Faculty of Art and Design, Istanbul Kultur Univ., Istanbul-TURKEY
[2]Dept. of Food Engineering, Faculty of Engineering and Architecture, Abant Izzet Baysal Univ., Bolu-TURKEY
*Corresponding author: d.yanmis@iku.edu.tr

Abstract

Raw milk is an important source of many vitamins such as A, B1, B2, B6 and B12 mainly. Although milk has a rich variety of vitamins, the amount of some does not meet the human needs. Among them A, D, E, K groups which are also called as fat-soluble vitamins are affected by animal feeding and environmental conditions while concentration of water-soluble vitamins like vitamin B and C are generally constant due to synthesized by microorganisms in rumen. Yet, the technological applications can affect their concentration in milk. Apart from these external factors, the vitamin composition in the milk also varies among milk species. Goat milk is similar to cow milk in terms of average milk composition but is considered more valuable than cow milk due to some differences in its physicochemical properties. In goat milk, amount of vitamin A, thiamine, riboflavin and pantothenic acid is sufficient while vitamin C, D, E, B12 and folic acid concentrations are considered to be insufficient. Camel milk is defined by its cow-like composition and salty taste and it contains 3-5 times more vitamin C than cow's. Vitamin A and E, thiamine, riboflavin, folic acid, and pantothenic acid concentrations are lower than cow milk's while pyridoxine and B12 concentrations are approximately the same. On the other hand, the average vitamin content of horse and donkey milk is lower than that of ruminant animals' milk. The content of fat-soluble vitamins (A and D) in elephant milk is lower than that of cow while amounts of vitamin D3 and K3 in reindeer milk are higher than that of cow.

Key Words: Milk; Vitamin

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Use of Milk Oligosaccharides as Functional Food Ingredient

Gülfem ÜNAL[1*]

[1]Ege University, Faculty of Agriculture, Department of Dairy Technology, Izmir-TURKEY
*Corresponding author: gulfem.unal@ege.edu.tr

Abstract

Various milk components are known to develop the microbiota within the gastrointestinal tract including immunoglobulins, lactoferrin, lysozyme, bioactive lipids, leucocytes and milk glycans such as glycolipids, glycoproteins and free oligosaccharides. Oligosaccharides are probably the most important functional ingredients among these components, as they can act as prebiotics. Human milk oligosaccharides are believed to stimulate the growth of especially bifidobacteria in the gastrointestinal tract while protecting against enteric pathogens. Human milk is a good source of oligosaccharides. It contains 8 g/L of oligosaccharides whereas bovine, caprine and ovine milk contain 0.03-0.06, 0.25-0.30 and 0.02-0.04 g/L, respectively. Human milk oligosaccharides have many health benefits such as modulating host intestinal epithelial cell responses, prevention of pathogen adhesion, improving immune system, providing nutrients for brain development. The composition and structure of human milk oligosaccharides cannot yet be reproduced and there is limited production of oligosaccharides in dairy animals, oligosaccharides having simpler structures than human milk oligosaccharides have been used as components in several dietary products to mimic the beneficial effects of human milk oligosaccharides. Recent studies focused on obtaining prebiotics which have more human milk oligosaccharides-like structures and functions. However, new developed technologies are needed for construction of human milk oligosaccharides-like structures in order to derive benefit from specific functions. In addition, clinical trials are also necessary to assess the prebiotic effect of oligosaccharides in humans, prior to use them in the formulation of foods.

Key Words: oligosaccharides, human milk, prebiotics

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Importance of Polydextrose in Functional Food Science

Gülfem ÜNAL[1*]

[1]Ege University, Faculty of Agriculture, Department of Dairy Technology, Izmir-TURKEY
*Corresponding author: gulfem.unal@ege.edu.tr

Abstract

In the recent years, low-calorie and fibre-rich diet has become a part of the consumer's daily diet. Among such functional ingredients polydextrose attracts attention in functional food science. Polydextrose is a low calorie, sugar free, low glycemic carbohydrate that has a variety of functional properties including high water solubility, high glass transition temperature, and stability at elevated temperature. Besides its functional properties polydextrose has positive influence on digestive health. It shows this effect by having fiber and prebiotic actions and also affecting bowel function and fecal characteristics. It has also been shown to exhibit lipid metabolism regulating effects which have been reported in human clinical intervention studies, as well as in animal studies. Polydextrose has been reported as a suitable ingredient for those who want to follow a low glycemic diet when it is used as a sugar replacer. Studies indicated that polydextrose might be beneficial in preventing risk factors associated with colorectal cancer, which could relate to its ability to promote short chain fatty acids production. It also contributes to a reduced pH of the colonic digesta through its fermentation and thereby to an enhanced absorption of calcium and magnesium. The functional benefits of polydextrose have led to use it in the development of new healthy products such as baked foods, beverages, chocolate, pasta, meat, frozen desserts, cakes, and fermented dairy products. Hence, polydextrose seems to be a versatile functional ingredient that can be used to improve both nutritional and health benefits of a wide range of processed foods.

Key Words: polydextrose, functional characteristics, food applications

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Mechanism of Bisphenol Formation and Its Importance

Damla YANMIŞ[1*], Gülsün AKDEMİR EVRENDİLEK[2]

[1]Dept. of Gastronomy and Culinary Arts, Faculty of Art and Design, Istanbul Kultur Univ., Istanbul-TURKEY
[2]Dept. of Food Engineering, Faculty of Engineering and Architecture, Abant Izzet Baysal Univ., Bolu-TURKEY
*Corresponding author: d.yanmis@iku.edu.tr

Abstract

Due to the fact that bisphonels affect endocrine system directly because of their weak estrogenic properties and the thought that bisphonels have effect on some disease and they may lead or cause certain diseases bisphenols, especially type A,F and S, are the chemicals thathave been being discusseda lot in the recent years. Because Bisphonel A, the most known and frequently studied one, has been banned in many countries, it has lead to produce Bisphenol F and S as the alternative derivatives of Bisphonel A. In this review, BPA's, BPF's and BPS's as the most known types of Bisphenols, thier structure, mechanism of action, metabolism, the importance about health, migration in foods, and the preventive actions that can be taken to reduce their adverse health effect are discussed.

Key Words: Bisphenol; Migration; Endocrine disturbing

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Extended Use of Flow Cytometry Technique Its Principles and Its Applications

Damla YANMIŞ[1*], Gülsün AKDEMİR EVRENDİLEK[2]

[1]Dept. of Gastronomy and Culinary Arts, Faculty of Art and Design, Istanbul Kultur Univ., Istanbul-TURKEY
[2]Dept. of Food Engineering, Faculty of Engineering and Architecture, Abant Izzet Baysal Univ., Bolu-TURKEY
*Corresponding author: d.yanmis@iku.edu.tr

Abstract

Flow cytometry device has evolved rapidly and its used has expanded greatly from only in hematology laboratories to many scientific fields including food science. Flow cytometry canprovide direct diagnosis of microorganisms in food and environment which require experience and time in addition to being expensive by conventional methods, serological identification of microorganisms, determination of viability of starter cultures, determination of bacteriophage-starter culture interaction, effect of storage on viability and intristic properties of probiotic bacteria are only a few of uses in the food science and industrial microbiology. In addition, flow cytometry can be used to investigate the effects of alternative processing technologies such as thermosonication, pulsed electric fields and high pressure application that have been prominent in recent years on microorganisms. Principles of flow cytometry, basic components, diverse use in food and environmental microbiology, biochemistry as well as molecular microbiology and advantages of this technology is focused on this review.

Key Words: Flow cytometry, Cell purification, Diagnosis

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Optimization of Cheese Whey for Production Microbial Substances

Elif ÖZER[1*], Harun KESENKAŞ[1]

[1]Ege University, Faculty of Agriculture, Department of Dairy Technology, Izmir-TURKEY
*Corresponding author: elif.ozer@ege.edu.tr

Abstract

Cheese whey is the aqueous phase separated from the curd in the cheese making process. Whey production has grown enormously in last decades and will continue to grow, along with cheese production. It is high in organic matters and amounts, and thus presents a high potential of environmental pollution when discarded untreated. It represents about 85-95% of the milk volume and has 55% of milk nutrients. The major nutrients in cheese whey are lactose, soluble proteins, lipids, mineral salts, lactic and citric acids, non-protein nitrogen compounds and B group vitamins. This nutritional value makes cheese whey a good substrate for the production some microbial compounds (lactic acid, propionic acid, hyaluronic acid, bacteriocin-like substances etc.). Optimizing bioconversion of cheese whey into different microbial products through fermentation is important to increase production of these substances. Lactic acid is obtained from cheese whey for a long while, and the main aspect for this field is the more supplemented the whey permeate, the higher levels of biomass and lactic acid formed. Different supplementation substances (glucose, different nitrogen sources, vitamin B complex) are tested for this purpose one by one or together. Also modifications of environmental conditions (pH, aeration, temperature) or/and adding prebiotic ingredients were tested for product bacteriocin-like substances. In various studies, to increase the production of propionic acid from whey, the acetic acid metabolic pathway was blocked using enzyme-inhibition methods. In this presentation the studies to improve microbial substances production for future food use were summarised.

Key Words: Cheese whey, optimization, microbial substances

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Drying Kinetics of Microwave Dried Couscous-Like Product

Mustafa BAYRAM[1*], Ayşe Nur YÜKSEL[1], Mehmet Durdu ÖNER[2]

[1]Gaziantep University, Faculty of Engineering, Department of Food Engineering, Gaziantep-TURKEY
[2]Alanya Hamdullah Emin Pasa Univ., Tourism Faculty, Dept. of Gastronomy and Cul. Arts, Alanya-TURKEY
*Corresponding author: mbayram@gantep.edu.tr

Abstract

Couscous is a traditional cereal product and after its production, traditionally it is sun-dried. During sun-drying, quality and sensory properties decrease due to the open environment and ununiformed moisture content is obtained. The objective of this study was the drying of couscous-like product produced from bulgur flour by using microwave dryer at 180 and 360 W. It was found that drying time was reduced 58.41 % with increasing microwave intensity from 180 to 360 W. The average drying rates at 180 and 360 W were 0.0179 and 0.0395 (kg m-2 hour-1), respectively. The effective moisture diffusivities at 60 and 80 °C were found as 5.65 x 10-9 and 10.84 x 10-9 m2s-1, respectively. Three mathematical models (Midilli and others, Wang and Singh and Peleg) were evaluated to find the best fitting model for the microwave drying of couscous-like product. According to R2 (correlation coefficient), RMSE (root mean square error) and $\chi 2$ (reduced chi-square) values, Midilli and others model for microwave drying was observed to be more fitted.

Key Words: drying; microwave; couscous-like

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Mathematical Modeling of Packed Bed Dried Couscous-Like Product Produced by Bulgur Flour

Mustafa BAYRAM[1*], Ayşe Nur YÜKSEL[1], Mehmet Durdu ÖNER[2]

[1]Gaziantep University, Faculty of Engineering, Department of Food Engineering, Gaziantep-TURKEY
[2]Alanya Hamdullah Emin Pasa Univ., Tourism Faculty, Dept. of Gastronomy and Cul. Arts, Alanya-TURKEY
*Corresponding author: mbayram@gantep.edu.tr

Abstract

Couscous is a world-wide known traditional product, which is a staple food of North Africa, Middle East and Anatolia cuisines. Drying of couscous is the most important process that affecting the quality of the product. Drying of foods is an important and ancient method of preservation process and it is practical to the most of the commercial and agricultural products. The objective of this study was the drying of couscous-like product produced from using bulgur flour by using packed bed dryer at 60 and 80 °C. It was found that drying time was reduced 27 % with increasing air temperature from 60 to 80 °C. The average drying rates at 60 and 80 °C were 0.0159 and 0.0209 (kg m-2 hour-1), respectively. The effective moisture diffusivities at 60 and 80 °C were found as 7.88 x 10-9 and 9.07 x 10-9 m2s-1, respectively. Three mathematical models (Midilli and others, Wang and Singh and Peleg) were evaluated to find the best fitting model for packed bed drying of couscous-like product. It was found that Midilli and others model for packed bed drying was observed to be the most suitable for the experimental data with the highest values of R2 (correlation coefficient), the lowest values of RMSE (root mean square error) and $\chi 2$ (reduced chi-square).

Key Words: drying; packed bed dryer; couscous-like

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Some Critical Deteriorations During the Bulgur Production

Mustafa BAYRAM[1*], Betül BAY YILMAZ[2], Nüzhet TÜRKER[3]

[1]Department of Food Engineering, University of Gaziantep, 27310, Gaziantep-Turkey
[2] Naci Topçuoğlu Vocational School, University of Gaziantep, 27180, Gaziantep-Turkey
[3]Department of Food Engineering, University of Mersin, 33343, Mersin-Turkey
[*]Corresponding author: profdrmusbay@gmail.com

Abstract

Wheat is one of the most important crops and represents the source of many food products i.e., macaroni, bulgur, semolina. Bulgur is pre-cooked and valuable processed wheat product due to high nutritional value, long shelf life and ease of preparation. It is generally produced from *Triticum durum* wheat type. It is produced using cleaning, cooking, drying, debranning, milling and classification steps, respectively. In the bulgur production, cooking and drying are the most important steps because of the impacts on bulgur colour and quality. The first judgement about quality on bulgur is its visual appearance. Thus, colour is the most important parameter, which affects the acceptability. Processing conditions are highly effective on the colour. There are some common problems during the processing of bulgur; such as colour loss (generally browning), loss of desired yellow colour and change in desired taste and odour of bulgur. These quality losses arised especially at three stages. First, the conditioning step after cooking, because the drying process is continuous and the cooking process is batch, so, the cooked products wait in bunker warmly for about 1-3 hours. During this period, it starts to darken. The second step, where mentioned deteriorations, it occurs during tempering because of high level of moisture content, tempering time and warm temperature. Finally, during long term storage of moist product without reducing the moisture content (>%13) cause deterioration. Briefly, in this study, the colour loss and the formation of undesired taste and odour in the bulgur production and possible reasons were analysed.

Key Words*:* bulgur; deterioration; colour loss; taste/odour formation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Application of Ergun's Equation in Food Unit Operations

Mustafa BAYRAM[1*], Sema Nur KAYIRAN[1], Onur ARSLAN[2]

[1]Gaziantep University, Faculty of Engineering, Department of Food Engineering, Gaziantep-TURKEY
[2]Osmangazi University, Faculty of Engineering, Department of Mechanical Engineering, Eskişehir-TURKEY
*Corresponding author: mbayram@gantep.edu.tr

Abstract

The Ergun equation, an extension of Darcy law, is the most popular equation used up to now to represent the relationship between pressure drop and fluid flow in fludized or packed beds. The Ergun equation consists two terms which are linear dependence on velocity is the low Reynolds number (laminar) term and the with the dependence on velocity squared is the high Reynolds number (turbulent) term. Especially, the equation is most popular equation to determine relationship between pressure drop and fluid flow in fludizied and packed bed dryer. At the same time, the equation using a extensive set of experimental data covering a wide range of particle size and shapes, presented a general equation to calculate the pressure drop across a packed bed for all flow conditions. Besides, during the design of typical beds, it is used for assumption of pressure drop. The Ergun equation is only able to accurately predict the pressure drop of single-phase flow over spherical particles, whereas it systematically under predicts the pressure drop of single-phase flow over non-spherical particles. Therefore, it is widely used for non-spherical particles, fludizied and packed bed dryer, reactors, packed-bed filters, encapsulated enzymereactors, silo design, aeration of products in bins etc. in the food engineering systems. In this study, the use of Ergun's equation in food engineering operations was explained.

Key Words: Ergun equation; Packed bed dryer; Fludizied bed dryer

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Future Projection for Syrian Food Industry

Mustafa BAYRAM[1*], Yasemin GÖK[1]

[1]University of Gaziantep, Engineering Faculty, Department of Food Engineering, Gaziantep-TURKEY
*Corresponding author: mbayram@gantep.edu.tr

Abstract

Syria is a middle-income developing country with an economy mainly dominated by oil and agricultural sector, both together accounted for half of GDP, where the contribution of agriculture used to be nearly 30 percent, employing 25 percent of the total labor force with another 50 percent dependent on it in the manufacturing sector. In March 2011, which has been known as Arab Spring revolts started with peaceful protests in Syria turned into a big civil war in July 2011. As of February 24, 2018, the current population of the country is 18,279,344, based on the latest United Nations estimates. While Syria is entering its seventh year with the crisis, more than 500,000 Syrians have died, half the population has been forced to leave homes, and migrated to neighboring countries, with some fled for Europe. As the war is still ongoing, the conducted research by FAO shows that it has also caused losses and vast damage to agricultural production accounts for USD $16 billion.
The aim of this study is to plan the agricultural sector for the end of the war in Syria by also perceiving specific shortcomings of previous failed attempts. It is concluded that Syria needs to improve its quality controls and certification for widening its export volume, train farmers for preventing water pollution and inefficient use of water, adopt modern irrigation techniques, keep the government controls firmly on agricultural sector, facilitate accessing fertilizer and pest control supplies and pay more attention to the fishery sector.

Key Words: Syria; food; agriculture; food industry; economy

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Research on Modification Techniqes on Dietary Fibers Obtained from Legumes and Cereals

Mustafa BAYRAM[1*], Ateka ALKHATIB[1]

[1]University of Gaziantep, Faculty of Engineering, Department of Food Engineering, Gaziantep-TURKEY
*Corresponding author: mbayram@gantep.edu.tr

Abstract

Dietary fiber is that part of plant material in the diet, which is resistant to enzymatic digestion. It includes cellulose, noncellulosic polysaccharides such as hemicellulose, pectic substances, gums, mucilages and a non-carbohydrate component lignin. The diets rich in fiber such as cereals, nuts, fruits and vegetables have a positive effect on health since their consumption has been related to decreased incidence of several diseases. Dietary fiber can be used in various functional foods like bakery, drinks, beverages and meat products. Influence of different processing treatments (like extrusion-cooking, canning, grinding, boiling, frying) alters the physico-chemical properties of dietary fiber and improves their functionality. Dietary fiber can be determined by different methods, mainly by: enzymatic gravimetric and enzymatic-chemical methods. Dietary fiber plays an important role in human health. In this study the modification of dietary fiber in foods was investigated with respect to definition, classification and methods for measurement, extraction and modification of dietary fiber. Finally, the benefits and risks of increasing consumption of dietary fiber were discussed.
Additionally, the effects of cooking, microwave, pressure cooking and ultrasound processing on TDF (total dietary fiber), SDF (soluble dietary fiber) and IDF (insoluble dietary fiber) values of legumes and cereals were discussed.

Key Words: Dietary fibers; legumes; cereals

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Protein Extraction Techniques from Cereals and Legumes

Mustafa BAYRAM[1*], Abdulmalek ALAMEEN[1]

[1]Gaziantep University, Faculty of Engineering, Department of Food Engineering, Gaziantep-TURKEY
*Corresponding author: mbayram@gantep.edu.tr

Abstract

Because of the high protein content and beneficial nutritional value, legumes play an important role in human diet. Legumes provide energy, dietary fibre, protein, minerals and vitamins required for human health and endue well-balanced essential amino acid profiles when consumed with cereals and other foods rich in Sulphur-containing amino acids and tryptophan. The production of legume protein concentrates or isolates is of growing interest to food industry because of their functional properties and ability to improve the nutritional quality of food products. Therefore, various techniques are used to extract protein concentrates/isolates with different features. Legume proteins have gained increasing importance because of desired functional properties, including gelling and emulsifying properties, and could be proposed as a potential supplement in a great number of food applications. A general procedure for extracting the proteins present in green seeds or immature kernels is given. Then, in the literature, several procedures mostly adapted to seeds are reported for: (1) the whole storage proteins (mostly prolamins and glutelins); (2) the albumins—globulins extracted using salt buffer; (3) the amphiphilic proteins extracted using a phase partitioning process; and (4) the proteins strongly attached to or within the starch granules of the seed endosperm. These procedures have been used for 2-D electrophoresis and proteomic analyses. This study provides an overview of current and emerging techniques for producing cereals and legumes protein concentrates/isolates.

Key Words: seed protein; legumes; protein isolation; isolation method; extraction

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Optimization of Phenolic Compounds Extraction from Some Fruit Peels

Bülent BAŞYİĞİT[1*], İbrahim HAYOĞLU[1], Mizgin YAZBAŞI[1], Büşra Nur ŞAHİN[1]

[1]Food Engineering Department, Engineering Faculty, Harran University, Haliliye, Şanlıurfa-TURKEY
*Corresponding author: bulentbasyigit@harran.edu.tr

Abstract

The aim of this study was to optimize solvent concentrations for phenolic compounds extraction from grapefruit, carrot, mandarin and apple peels. Response-surface methodology was used for optimization. The ratio of ethanol to water was selected as independent variable. The phenolic compound was used as response. The fruits were purchased from a local market in Sanlıurfa city (Turkey). Fruit peels peeled were dried in place isolated from sunlight at room temperature for 7 days. For extraction, one gram of peel was mixed with 10 mL of ethanol-water combination. The extraction was maintained at room temperature for 30 min. The simplex lattice design showed that quadratic regression models were in good agreement with experimental results. The best point for grapefruit was 100% water and desirability in this point was '1.000'. Regression equation was Phenolic (Y) =1.52*Ethanol (A)+0.903*Water (B) (R2=0.94). The optimal conditions and desirability for carrot was 23.34% ethanol-76.66% water and '0.930' respectively. The regression equation was Y= A*0.50+5.99*B+10.28*A*B (R2=0.97). The best delivery of phenolic compounds from mandarin peel was reached using 8.25% ethanol-91.75%water. The desirability and regression equation were recorded as '0.971' and Y=0.57*A+5.16*B+5.50*A*B (R2=0.93), respectively when extracted at the optimum conditions. 47.53% ethanol-52.46% water with desirability of '0.905' provided optimum extraction of phenolic compounds from red apple peel. Regression equation of phenolic compound was Y=1.49*A+2.52*B+20.81*A*B (R2=0.97). At these conditions, the phenolic compounds of grapefruit, carrot, mandarin and apple peels were 9.03, 6.55, 5.20 and 7.22 mg gallic acid per gram of peel respectively.

Key Words: Response-Surface methodology, simplex lattice design, phenolic compound, fruit peel

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Production of Functional Ice-Tea with Hibiscus

Bülent BAŞYİĞİT[1*], İbrahim HAYOĞLU[1], Zelal OGAN[1], Kübra ATUĞ[1], Aşhan SARI[1], Nazlı KORKMAZ[1], Ayfer KORKMAZ[1]

[1]Food Engineering Department, Engineering Faculty, Harran University, Haliliye/Şanlıurfa-TURKEY
*Corresponding author: bulentbasyigit@harran.edu.tr

Abstract

Ice-tea tea could cause some health problems as it contains sugar. Therefore, it is necessary to produce ice tea contained lower sugar or/and functional. Plants could be ingredient of ice tea as they are good source of bioactive compounds. Hibiscus also could be a good option for production of ice tea. The study was divided into 3 stages. First stages cover water extraction of phenolic compounds from hibiscus. Ultrasonic solvent extraction was applied for phenolic extraction. Extraction temperature and time was optimized. The extraction was maintained at room temperature for 1, 5, 10, 15, 30, 60, 90 and 120 min. The highest phenolic compound (23.68 mg GAE per g of sample) was obtained in the 60th min. After the 60 min, amount of phenolic compound was decreased as they undergo deformation. For determination of optimum extraction temperature, the extraction was maintained for 60 min at room temperature, 35 °C and 45 °C. The lowest phenolic content was found at 45 °C compared to other conditions. Therefore, the extract obtained at room temperature for 60 min was used to produce ice-tea. Black tea (40%), hibiscus extract (60%) and sugar (12%) were ingredient of ice-tea. The final product was produced in three different form (pasteurized at 85 °C for 5 min, added 0.1% sodium benzoate and control). The three product was stored at 4 °C for 30 days. The antioxidant activity, phenolic compound, pH, titratable acidity, color, sensory analysis of final products were investigated on the first and last day of storage.

Key Words: Hibiscus, ice-tea, ultrasonic extraction, phenolic compound, antioxidant activity

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Screen Analysis Problems in Bulgur Industry

Ali YILDIRIM[1*], Mustafa BAYRAM[2], Birsen LAFTAN[2]

[1]Faculty of Engineering, Department of Food Engineering, Harran University, Şanlıurfa-TURKEY
[2]Faculty of Engineering, Department of Food Engineering, University of Gaziantep, Gaziantep-TURKEY
*Corresponding author: ayildirim@harran.edu.tr

Abstract

Bulgur industry has been developing day by day. New technologies and standards are required with the increase in the consumption quantity of bulgur. Sieve analysis is very important for size classification stage and finished product. Bulgur has approximately an equidimensional and irregular shape particular food product. Due to its irregular shape and particular size, the screen analysis is difficult and this is major problem for bulgur industry.
In this review study, the problems, deficiencies and inaccuracies of bulgur sieve analysis were analyzed. The domestic and international standards and Codex values were investigated. It was obtained that, the standards of the sieve analysis have been changing periodically. This change in screen analysis standards deals with aperture size and shape. According to international standard, the required size in bulgur could generally not provided by bulgur producer. In general, the product is rejected by the authorities due to unachieved size distribution for the finished product (especially specific and near screen aperture size). In addition, there is no optimum screening time and vibration frequency in the standards.
In this study, bulgur screen analysis and its standard values were investigated, which is used by domestic, international and specific standards. Additionally, some novel recommendations were made to solve this problem.

Key Words: Bulgur; Sieve analysis; Bulgur screen analysis standards; Particle size; Particle shape

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Research on Sake Production from Karacadağ Rice Variety Produced in Turkey

Ali YILDIRIM[1*], Mustafa BAYRAM[2], Mustafa Çağrı DEMİR[2]

[1]Faculty of Engineering, Department of Food Engineering, Harran University, Şanlıurfa-TURKEY
[2]Faculty of Engineering, Department of Food Engineering, University of Gaziantep, Gaziantep-TURKEY
*Corresponding author: ayildirim@harran.edu.tr

Abstract

Sake has been processed from rice in Japan since the ancient times as national beverages. It is consumed at the religion and traditional ceremonies. Polishing, washing, soaking, steaming, koji preparation, preparation of moto as yeast starter and moromi fermentation are the main steps for sake brewing. In the present study, it is aimed to designate features and techniques of sake using short rice, which is produced in our country and has low economic value. In recent years, Turkey has increasing imports of Sake and it is also aimed to produce this beverage from short rice produced in our country instead of importing from Japan with very high prices. As a result of the literature search, no scientific research done in Turkey was found on the production technology of Sake. In this study, short type rice, which was taken from a local rice producer, was waited in water after polish about 70 %. Then, Aspergillus oryzae was inoculated and solid-fermented starter koji was added. Then, Saccharomyces sake was inoculated and waited for fermentation for a certain time. Solid-liquid mix, which was obtained from fermentation, was filtered; sake, which is liquid part was obtained. In the study, Karacadağ type short rice was used. As a result, 13.8 % alcohol content was obtained by using Karacadağ type short rice.

Key Words: Sake, Turkish short rice, Karacadağ

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Solid Handling Properties of Durum and Bread Wheat

Ali YILDIRIM[1*], Mustafa BAYRAM[2], İslim DAYIOĞLU[2]

[1]Faculty of Engineering, Department of Food Engineering, Harran University, Şanlıurfa-TURKEY
[2]Faculty of Engineering, Department of Food Engineering, University of Gaziantep, Gaziantep-TURKEY
*Corresponding author: ayildirim@harran.edu.tr

Abstract

Wheat, through the centuries, has been intimately associated with human food uses. Wheat and wheat foods, long recognized as a major staple and source of calories in the diets of people, also contribute significant quantities of other nutrients to the diet. They provide energy, fiber, carbohydrates, proteins, B vitamins, iron, calcium, phosphorus, zinc, potassium and magnesium. Wheat, any of several species of cereal grasses of the genus *Triticum* (family Poaceae) and their edible grains. The most important are common wheat (*Triticum aestivum*), used to make bread; Durum wheat (*Triticum durum*) used in making bulgur, semolina and macaroni. In this research, Durum and Bread wheat were analyzed based on their solid handling properties such as sphericity, bulk density, particle density, angle of repose, sliding angle and void fraction, where are important properties for the engineering applications, design of processing, storage and conveying systems of particulate materials. The determination of some physical properties the wheat is very difficult due to its ellipsoidal shape. The results in this study showed that; sphericity, packed bulk density, free flow bulk density and angle of repose were measured as 0.014156, 816.8 kg/m^3, 779.26 kg/m^3 and 40^0, and 0.007435, 863.46 kg/m^3, 825.84 kg/m^3 and 45^0 for Durum and Bread wheat, respectively.

Key Words: wheat, dimension, sphericity, bulk density, angle of repose

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Olive Oil and Health

M. Murat CEYLAN[1*], Mustafa ÇAVUŞ[1], Menekşe BULUT[1]

[1]Iğdır University, Department of Food Engineering, Iğdır, TURKEY
*Corresponding author: mmc3188@gmail.com

Abstract

Olive oil is a liquid fat obtained from olives a traditional tree crop of the Mediterranean Basin. The oil is produced by pressing whole olives. It is commonly used in cooking, whether for frying or as a salad dressing. Olive oil is the most representative food in the traditional Mediterranean diet and its most important source of MUFA. The healthy benefits of MUFA-rich diets on plasma cholesterol levels, were the first to generate interest in this dietary model. It helps in lowering the bad cholesterol levels in blood. The extra virgin olive oil variety contains the highest level of antioxidant polyphenols and oleic acid. It is thus a healthy option compared to other vegetable oils. However, most recent studies have shown that there are a number of properties that depend on, or are potentiated by, the consumption of olive oil, such as virgin olive oil, that is rich in microcomponents. This foodstuff, thanks to its double set of benefits, thus tends to produce a better lipid profile and a less prothrombotic environment, promoting antioxidant and anti-inflammatory effects, with a greater endothelial protective capacity. In view of these effects, it would appear that when olive oil is the basic source of dietary alimentary fat it has a major antiatherogenic capacity, which is not shared to the same extent by other oils that are rich in oleic acid but lack its characteristic micronutrients.

Key Words: Olive oil, health, MUFA

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Vegetarian Athlete Diet

Menekşe BULUT[1*], Ahmet DİNC[2], Mustafa CAVUS[3], M. Murat CEYLAN[3]

[1]Res. Center for Redox App. in Foods (RCRAF), Dept. of Food Eng., Faculty of Eng., Igdir Univ., TURKEY
[2]Dept. Physical Education and Sport Teaching, College of Physical Edu. and Sport, Igdir Univ., TURKEY
[3]Dept. of Food Engineering, Faculty of Engineering, Igdir Univ., TURKEY
*Corresponding author: gidabenefse@gmail.com

Abstract

An increasing number of athletes have adopted vegetarian diets for several reasons, and in fact that there is no evidence to support the positive or negative impact of a vegetarian diet on sport performance. It is widely accepted that appropriately planned vegetarian diets can provide sufficient nutrient energy with an desirable range of carbohydrate, fat, and protein intake to support performance and health. In athletes, good nutrition helps to enhance performance of trainers. To maximize performance, recovery, endurance and resistance to illness, intake of a number of foods such as beans, greens, seeds, nuts, whole grains, and other colorful plant products are recommended. Excellent nutrition to maximize long-term performance of athletic life can be provided by adequate protein intake rather than macronutrient adequacy. Supplemental protein is an option but not needed for most athletes who carefully construct their diet, paying attention to the higher-protein plant foods. In addition, this protein can be intaken with B12, vitamin D, zinc to increase the performance. In a healty vegetarian diet, it is essential to select a diet containing a variety of mostly unprocessed vegetarian foods which should include whole-grains, pasta, cereal, fruit, vegetable, legume, nuts and seeds, and dairy products and eggs. The nutrition of vegetarian athletes can be controlled either proper supplementation or the use of fortified foods when needed. In this research, the effect of balanced vegeterian diet on nutritional needs of athletes and the performance of athletes are discussed reviewing the literature.

Key Words: Athletes, Vegeterian, Food

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Food and Non-Food Uses of Carob

Ayhan DURAN[1*], Özen ÖZBOY ÖZBAŞ[1]

[1]Aksaray University, Food Engineering Department, Aksaray-TURKEY
*Corresponding author: duranayhan@gmail.com

Abstract

Carob is the beanlike fruit of *Ceratonia siliqua* L., which grows widely in the Mediterranean and Aegean region and belongs to the genus leguminosae. In our country, it grows naturally in the coastline of 1750 km around Tarsus, Mersin, Silifke, Gülnar, Anamur, Antalya and Marmaris. Historically, due to its high content of sugars, the brown pod was consumed as food, especially in ancient times as a candy for children or in emergency situations such as war. Apart from carbohydrates, high amounts of dietary fiber and polyphenols are characteristics of this Mediterranean food. Carob (harnup) can be consumed as carob flour, carob fiber and carob bean (locust bean) gum in the food industry and it is also one of the fruits commonly used in pekmez production in our country. Carob is used in many Arab countries to make a popular drink which is consumed mainly in the month of Ramadan. Carob applications include cereals, snacks, healthy bars, carob bars, confectionery and bakery products, carob spreads, teas and infusions. Carob powder is somewhat reminiscent of chocolate. Carob also has several non-food uses especially in textile, paper, and petroleum industries. Apart from these uses of carob, it is also found places in animal feeding, printing, cosmetics, furniture, leather, detergent, plastic, cigarette and ceramic industries. In this study, food and also non-food industrial uses of carob were rewieved.

Key Words: Carob, food industry

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Carob as a Functional Food

Ayhan DURAN[1*], Özen ÖZBOY ÖZBAŞ[1]

[1]Aksaray University, Food Engineering Department, Aksaray-TURKEY
*Corresponding author: duranayhan@gmail.com

Abstract

Carob, also known as St. John's bread or locust bean, is a carbohydrate-rich fruit that has been used as a source of nutrition for centuries, especially in the Aegean and Mediterranean region. After harvesting the carob pods (harnup), the seeds are removed to make carob bean gum (CBG) and the remaining pulp contains 40-60% of low-molecular-weight carbohydrates, mainly sucrose. Carob also has a high content of insoluble dietary fiber and polyphenols (tannins). Carob can be utilized as carob flour (powder-CP), carob fiber (CF) and CBG in the food industry. Functional foods have had a large impact on the role of diet and health. Today, carob and carob derived products (CF and CP) are considered as functional foods for several health related aspects. CF added to food products has been shown to help significantly reduce plasma cholesterol levels, especially LDL cholesterol. In addition to reducing cholesterol levels, antioxidative activity of CF could help reduce the risk of cardiovascular disease and improve general health. Another component of the CF, pinitol, naturally occurs at about 1%, a very high level. Pinitol, a type of inositol, has been shown to regulate blood glucose. Tannin-rich carob pod has been used as a popular medicine for the treatment or prevention of diarrhoea for centuries. Several researches were conducted on the effects of CP and CF on different bakery products. It can be concluded that disease prevention and healing abilities of carob will increase its potential for use as a functional food and food ingredients.

Key Words: Carob, functional food

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Utilization of Dietary Fibers in Meatballs

Ayhan DURAN[1*], Özen ÖZBOY ÖZBAŞ[1]

[1]Aksaray University, Food Engineering Department, Aksaray-TURKEY
*Corresponding author: duranayhan@gmail.com

Abstract

Epidemiological researches have demonstrated the relationship between diet deficient in dietary fiber (DF) and increase of a number of chronic diseases, including colon cancer, obesity and cardiovascular diseases. Meat and meat products are important sources for protein, fat, essential amino acids, minerals, and vitamins and all these components have specific function to our body. However, most of the meat products are deficient in complex carbohydrates like DF. Utilization and incorporation of DF in meat products are gaining importance day by day. Fibers generally can be introduced into meat products, to reduce the caloric content by fat substitution and improve the texture and stability of meat product. So, DF is one of the ingredients to provide meat products with low-fat and high fibers. Various types of dietary fibers (wheat bran, oat bran, rye bran, rice bran, peach fiber, carrot fiber, lemon albedo, sugar beet fiber, brewer's spent grain, etc.) have been studied either alone or combined with other ingredients for development of nutritionally balanced diet. Meatballs are ground meat rolled into small balls, sometimes along with other ingredients, such as bread crumbs, minced onion, eggs, and seasonings and are very popular meat products in Turkey with different recipes. Dietary fibers such as brans (wheat, oat, rye, maize), inulin, legume flours (blackeye bean, chickpea, lentil, rusk) and citrus fiber have been studied in the formulation of low-fat high-DF meatballs. In the present review, various DF sources and their applications in meatballs and effects on quality attributes have been reviewed.

Key Words: Dietary fiber, meatballs

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Use of Starch as Edible Coating Material

Kâmil Emre GERÇEKASLAN[1*], Hüseyin BOZ[2]

[1]Nevşehir Hacı Bektaş Veli Univ., Engineering-Architecture Fac., Food Engineering Dept., Nevşehir-TURKEY
[2]Atatürk Univ., Tourism Fac., Gastronomy and Culinary Arts Dept., Erzurum-TURKEY
*Corresponding author: emre@nevsehir.edu.tr

Abstract

The production and applications of synthetic films in food packaging have grown quickly over the past few decades resulting in serious environmental concerns because the synthetic plastics are resistant to degradation. Nowadays, consumers seek to reduce the environmental problems associated with food packaging and demand biodegradable materials. Research studies have been focused on biopolymeric materials as raw material for food packaging and preservation. The use of edible coatings is widely accepted and has been practiced to increase the shelf life of various food products. Starch is one of the most abundant naturally occurring substances. Starch films and coatings have been used for various food and pharmaceutical applications. Films prepared from starches are isotropic, odorless, tasteless, colorless, non-toxic and biodegradable. The starch films have low oxygen permeability. For example, edible coating consists of a thin layer of edible material that can act as a barrier against moisture, gas (O_2, CO_2) and solute movement by creating a semi-permeable membrane around the fruit, thus slows down respiration rate, water loss and oxidation process. Starch coatings are nutritious, safe and economic and have been used in the storage and marketing of foods. Their physical characteristics, chemical resistance and mechanical properties are similar to plastic films. Edible coatings also considered as safe as they are composed of natural ingredients and does not synthesized chemically. Furthermore, the increasing market demand to preserve food in a natural way has also been encouraged the researchers towards the utilization of edible coatings from low-cost renewable resources.

Key Words: Starch, edible films, coating

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Traditional Foods and Culinary Culture of Mersin Province

Nuray GÜZELER[1*], Çağla ÖZBEK[1]

[1]Cukurova University Faculty of Agriculture Food Engineering Department, Adana-TURKEY
*Corresponding author: nsahan@cu.edu.tr

Abstract

Mersin is a port city which is in the south part of Turkey. Most of the population of Mersin region consists of Arabs and Turkmen (nomads). Furthermore it is known that many Armenian, Greek and Cretan families have been living in this region. Ethnic diversity had effects on nutritional habits and cuisine cultures of the people of the region like every part of life. Some of the nutritional habits comes from the past still continue but some of them could not adapt to time and were forgotten. Food of animal origin such as meat and meat products or milk and milk products had important roles in Mersin tastes because cattle breeding were the main source of income by the people of the region. It may be expressed that this habit has been going on today. At this work, Mersin province's tastes were given with subheadings as milk and milk products, meat and meat products, herbs, fruit and vegetable products, legumes and cereal products, pastries and some desserts which are produced in Mersin province. It is considered that activities to introduce cuisine culture of Mersin province should be increased for keeping it alive and its sustainability.

Key Words: Mersin, traditional food, cuisine culture

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Whey and Whey Protein

Nuray GÜZELER[1*], Mustafa Kadir ESEN[1]

[1]Cukurova University Faculty of Agriculture Food Engineering Department, Adana-TURKEY
*Corresponding author: nsahan@cu.edu.tr

Abstract

In the cheese production after coagulation of the milk with rennet or organic acid and filtration process, the remaining yellowish color, whey, is a valuable product. The amount of whey produced during the production of cheese is quite high in the dairy industry. In the past, this product, which mostly used waste and caused environmental pollution, started to be utilized by understanding the importance. In addition, whey protein, which has high nutritional value, is obtained from whey, which has many usage areas (animal feed, bakery products, yogurt, ice cream, soft drinks, confectionery products, sausage meat products, mayonnaise, salad sauces, chocolate). Whey proteins such as whey protein concentrates, whey protein isolates and hydrolysates are produced as a result of various methods of whey protein, which has many functional properties. Several properties of whey proteins (such as solubility, foam, gel emulsion and fiber formation, water binding and consistency) are utilized in food products. In this research general properties, how to obtain and usage areas of whey and whey powder were given.

Key Words: Whey, protein, functional, usage

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Rheological Properties of Fluid Foods

Mustafa KAPLAN[1*], Seydi YIKMIŞ[2], Harun AKSU[3], Mehmet ALPASLAN[2]

[1]Ministry of Food, Agriculture and Livestock, Directorate of Apricot Research Institute, Malatya-TURKEY
[2]Namık Kemal University, Department of Nutrition and Dietetics, Tekirdağ-TURKEY
[3]Istanbul University, Veterinary Faculty, Department of Food Hygiene & Technology, Istanbul-TURKEY
*Corresponding author: kaplanmustafa@tarim.gov.tr

Abstract

Rheology; It is a research area, dealing with the flow and deformation under stress of the product. In the food industry, rheology knowledge helps me to understand how the food structure responds to applied force and deformation. That is why food rheology; food industry, raw materials, semi-finished products and end products of the deformation and flow of the science department is antagonistic. Knowledge of the rheological properties of liquid and semi-solid foods is a very important tool in the calculation and quality control of production process parameters. Calculation of processes involving liquid flows such as pump size, pump type and power requirements, extraction and filtration; and the rheology of products such as beverages and their rheology. Fluid foods are classified as Newtonian and non-Newtonian according to the relation between the shear stress and shear rate of the solution. Reology finds applications in different areas such as product development, process engineering calculations, quality control, stability studies, and sensory evaluation because it explains how the material reacts to applied stress or strain. Rheometers also specify properties such as flexibility, stiffness, structural regeneration under different pressure and temperature conditions. Multiphase and structured fluids can exhibit complex rheological behavior, providing pleasant tissue and oral health profiles to consumers. Because of their natural structure and rheological behavior, processing of such fluids is difficult to provide confidence and prolong shelf life. In this study, the effect of the processes applied in fluid foods on food rheology was investigated.

Key Words: fluid foods, food rheology, rheometer

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

New Developments in the Use of Infrared Technology in Fluid Foods

Mustafa KAPLAN[1*], Seydi YIKMIŞ[2], Harun AKSU[3], Ramazan Mert ATAN[2], Mehmet ALPASLAN[2]

[1]Ministry of Food, Agriculture and Livestock, Directorate of Apricot Research Institute, Malatya-TURKEY
[2]Namık Kemal University, Department of Nutrition and Dietetics, Tekirdağ-TURKEY
[3]Istanbul University, Veterinary Faculty, Department of Food Hygiene & Technology, Istanbul-TURKEY
*Corresponding author: kaplanmustafa@tarim.gov.tr

Abstract

Infrared (IR) radiation is an electromagnetic energy, which lies between visible light and microwave zones in the electromagnetic spectrum. The IR region defines the electromagnetic radiation between 1.8 and 3.4 μm wavelengths. It is very important in selecting the IR source. Generally short (about 1 μm) and medium (about 10 μm) beams are preferred for IR heating. Because the IR sources that produce this range of wavelengths emit in a few seconds at the desired temperature, they provide a high amount of energy transfer and are easy and fast to control. The penetration power of IR rays depends on the chemical composition, physicochemical state and physical properties of the glass. As the temperature of the IR source increases, the amount of radiant energy transferred to the food increases and the IR radiation wavelength decreases. It is more efficient to process thin-film materials with long-wave, thicker materials with short-wave IR radiation. In recent years, IR technology has been used for many purposes such as drying, boiling, thawing, pasteurization, sterilization, frying, roasting, cooking, pathogen and enzyme inactivation in the field of food. There is little literature in the literature regarding the effect of IR treatment on food components. However, IR treatment, in general, is reported to have less nutritional losses as it significantly shortens the treatment time compared to conventional methods. In this study, the use of infrared technology used in fluid food in several areas of the food industry is given information about and applications.

Key Words: Infrared, fluid food, sterilization

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Investigation of the Sensory Quality at 2 ± 1 °C of *Luciobarbus esocinus* Fillets Packaged with Films Prepared with the Addition of Different Essential Oils and Chitosan

Nermin KARATON KUZGUN[1*], Ayşe GÜREL İNANLI[2]

[1]Fisheries Faculty, Munzur University, Tunceli-TURKEY
[2]Fisheries Faculty, Fırat University, Elazığ-TURKEY
*Corresponding author: nerminkaraton@hotmail.com

Abstract

In this study, the sensory changes during storage at 2 ± 1°C of Luciobarbus esocinus fillets coated with edible films prepared with chitosan and thyme, clove, rosemary essential oils were examined. To create the experimental samples, a total of six groups of Luciobarbus esocinus fillets coated with different edible films (normal, vacuum-packed, chitosan, chitosan with added thyme oil, chitosan with added clove oil, and chitosan with added rosemary) were used. The food composition of the fillets and experimental samples were determined after they had been coated with films. This study was performed as three replications, in two parallel analyses. The result of analysis showed that, the preservation period of fresh fillets ended on day 12, that of vacuum-packed fillets on day 15, that of fillets coated with chitosan and rosemary+chitosan on day 27, that of fillets coated with thyme+chitosan and cloves+chitosan on day 30. In comparison with the control group, fish spoilage was significantly delayed in samples coated with thyme+chitosan and cloves+chitosan ($P < 0.05$). In terms of the general acceptability of the fish, as determined by qualified respondents, it was determined that the highest score was given to the experimental group to which clove essential oil had been applied.

Key Words: Chitosan, Edible Film, *Luciobarbus esocinus*, Essential oil, Shelf-Life

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Formulation and Production of Colored Hard Candy

Fatih Mehmet YILMAZ[1*], Ahmet GÖRGÜÇ[1], Ebru YILDIRIM[1], Merve KARAKUŞ[1]

[1]Adnan Menderes University, Engineering Faculty, Food Engineering Department, Aydın-TURKEY
*Corresponding author: fatih.yilmaz@adu.edu.tr

Abstract

Hardy candy is predefined as cooled supersaturated sugar solution and its structure is non-crystalline amorphous state despite it seems at solid state. The main ingredients of hard candy are sucrose, glucose syrup, invert sugar, organic acid, aroma compounds, colorants and some other fillings such as sesame and nuts. The production of hard candy requires expertise, mainly from skill viewpoint. The formulation and ingredient addition steps are quite important for desired and high quality hard candy production. The objective of this study was to produce colored hard candy production by using black carrot concentrate as natural colorant. In this respect, total three different formulations which are sucrose (I), sucrose + sorbitol (II), sucrose + glucose syrup (III) were tested. Then, non-colored and colored hard candies were produced (total six prodcucts). Formulations were assessed based on dry weight basis and sugar syrups were firstly boiled up to 160 °C and 95 °Bx. Then sugar syrup was cooled down to 100 °C after addition of citric acid solution and black carrot concentrate (if used) and finally dropped into marble floor for kneading and shaping steps. Hygroscopicity, glass transition temperature (Tg), HPLC carbohydrate profile and sensory analyses were applied to produced hardy candies. Sensory analysis results revealed that natural colorant enriched hard candies were the most preferred products in terms of appearance and sucrose + glucose formulation was the most preferred in terms of texture and aroma properties. The formulations had significant effect on hygroscopity, Tg and carbohydrate profiles.

Key Words: hard candy, natural colorant, sucrose, sorbitol, glucose

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Ultrasound Assisted Extraction of Natural Colorant from Red Beet (*Beta vulgaris* L.)

Fatih Mehmet YILMAZ[1*], Ahmet GÖRGÜÇ[1], Feyza ELMAS[1], Çiğdem Görkem MUTLU[1], Öyküsu ATILGAN[1]

[1]Adnan Menderes University, Engineering Faculty, Food Engineering Department, Aydın-TURKEY
*Corresponding author: fatih.yilmaz@adu.edu.tr

Abstract

The objective of this study was to determine the effect of varying aqueous concentrations of different solvents (ethanol, methanol and acetone) and the effect of power ultrasound on the extraction of bioactive compounds, mainly coloring compounds from red beet (*Beta vulgaris* L.). In this context, the red beets from local market of Aydın were provided and stored at +4 ˚C before commencement of processes. They were cleaned and peeled in the process and subjected to a convenient shredding process when taking into consideration of the fibrous structure of the vegetable. The aqueous ethanol, methanol and acetone solutions which were prepared at different concentrations (0, 30, 50, 80 and 100%; by volume) were used in determining the most suitable solvent and solvent concentration for extraction. After determining the most suitable solvent, the effect of the ultrasonic process was examined. Extraction was carried out for 30 minutes at 96, 156, 198 and 242 W/L ultrasound powers (35 kHz).Taking into consideration of the betalain, total phenolic compound and antioxidant capacity of the samples prepared with different solvents, the optimum solvent was determined as 50% (v/v) ethanol. Antimicrobial activity analyzes were also applied to the extracts which were obtained at the end of the treatments. Ultrasound had significant effect on the extraction of bioactive compounds from red beet ($P<0.01$). The increase in ultrasound power resulted increasing betalain, total phenolic compounds, antioxidant and antimicrobial activities while there was no significant difference between 198 and 242 W/L ultrasound powers ($P>0.05$).

Key Words: Red beet, ultrasound, extraction, betalain, antimicrobial activity

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Gut Microbiota and Obesity

Ceyda DADALI[1*], Yeşim ELMACI[1]

[1]Ege University, Engineering Faculty, Food Engineering Department, Izmir-TURKEY
*Corresponding author: ceyda.dadali@gmail.com

Abstract

The human body contains trillions of microorganisms which have an important role in human metabolic regulation with their symbiotic interactions in the host. Trillions of microorganisms that inhabit our bodies during and after birth are termed as microbiota. Adult humans have more than 10 times the number of bacterial cells than the cells in the human body. Microbiota in the gastrointestinal tract includes bacteria, viruses, fungi and other microorganisms. Although, each people have unique microbiota composition, gut microbiota is mainly member of four phyla namely *Firmicutes*, *Bacteroidetes*, *Actinobacteria* and *Proteobacteria*. These bacteria play an important physiological role in vital processes such as digestion, vitamin synthesis and metabolism among others. Molecular interactions between gut microbiota and host energy metabolism, lipid accumulation, and immunity are well understood. The exact mechanism linking gut microbiota to obesity remains obscure due to the complex etiology. Obesity and its associated disorders have reached an alarming stage worldwide. The last decades have experienced an exponential increase in the number of people suffering from obesity and its associated disorders. In the United States 1 of 3 people, in Turkey 1 of 5 people is obese. Human studies and animal models have been used to demonstrate that the gut microbiota is altered in obesity. These studies showed differences in the abundance of the phyla *Bacteroidetes* and *Firmicutes*. Especially, Firmicutes: Bacteroidetes ratio positively correlated with the obese phenotype independently of diet. This review provides an overview of gut microbiota and obesity.

Key Words: Gut microbiota, human, obesity.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of High Intensity Ultrasound on Protein Functionality

Vildan AKDENİZ[1*], A. Sibel AKALIN[1]

[1]Ege University, Faculty of Agriculture, Department of Dairy Technology, Izmir-TURKEY
*Corresponding author: vildan.akdeniz@ege.edu.tr

Abstract

There have been numerous studies to generate new processes and ingredients for functional food industry. For this purpose, different protein sources are widely used as proteins have important functional properties due to their molecular characteristics and compositional properties. In this context, the structural and functional modification of proteins is important. Ultrasound is considered as a useful application depending on the evidence that support its effectiveness to improve the physical and functional properties of different proteins.

Ultrasound waves are sound waves that exceed the limit of human hearing i.e. above 20 kHz. High intensity ultrasound (HIUS), with a frequency range between 20 and 100 kHz, and 10 and 1000 W/cm^2 of power could be used in many food applications, such as emulsification, sterilization, extraction, degassing, filtration, drying, and enhancing oxidation.

Recently, HIUS has gained considerable attention in food processing chain as sound waves are considered safe, non-toxic, eco- friendly and effective method to meet both producer and consumer demands. The research findings reported that HIUS can modify the structural and/or functional properties of food proteins by altering their molecular characteristics. HIUS can change the physicochemical properties of proteins, such as particle size, turbidity, solubility, and rheological properties. The use of HIUS application in pretreatment and during hydrolysis process of proteins can modify protein conformation. These structural modifications may cause an increase in hydrolysis degree and bioactivity, providing functional peptide generation. Therefore HIUS offer a rapid, efficient and reliable alternative to improve protein quality and also to manufacture new ingredients for the functional food industry.

Key Words: High intensity ultrasound, protein, functional properties

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Survey on Determination of 5 Basic Taste of 8-13 Year Old Students

Ceyda DADALI[1*], Yeşim ELMACI[1]

[1]Ege University, Engineering Faculty, Food Engineering Department, Izmir-TURKEY
*Corresponding author: ceyda.dadali@gmail.com

Abstract

The aim of this study was to determine the 5 basic taste (sweet, salty, sour, bitter and umami) of students aged between 8 and 13 years and their tendency to sweet foods. For this purpose, a questionnaire consisting of 23 questions was applied to a total of 186 children, 99 boys and 87 girls, who were educated in the province of Bornova, İzmir. The questionnaire consists of two parts, one is the opposite answer and the other is elective. 56% of the students stated that there were 4 basic tastes in foods. 37.1% of the participants did not know the right response, while 16.3% stated that there were 5 basic tastes. 38.17% of the children stated that they consumed dessert many times a day and 27.42% of them once a day. 35.14% of the individuals participating in the survey stated that sweet foods express energy, followed by weight, happiness and motivation, respectively. 61.29% of students can control themselves about sweet consumption, 12.9% of them cannot control themselves and 25.81% of students' sweet consumption has changed according to their moods. 65.05% of the individuals stated that they prefer sweet fruit. This suggests that these individuals show more tendencies to sweet in comparison to sour. This study showed that children aged 8-13 years showed tendency to sweet taste among 5 basic tastes. When girls and boys were compared, it was determined that boys showed more tendency to sweet taste than girls.

Key Words: five basic tastes, student, sweet taste tendency

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Characteristic Components of *Cistus*: A Review

Tugba AKTAR[1*], Eda ADAL[2]

[1]Alanya Alaaddin Keykubat University, Faculty of Engineering, Food Engineering Department,
[2]Gaziantep University, Faculty of Engineering, Food Engineering Department,
*Corresponding author: tugba.aktar@alanya.edu.tr

Abstract

Genus *Cistus* are shrubs of dry scrub or open woodland which are inhabiting various regions of Mediterranean Sea. The genuses were found to have 16 species where all are frequently used in many traditional medicines for its antimicrobial, antitumor, antiulcerogenic, wound healing, cytotoxic, vasodilator and anti-inflammatory effects. The leaves of *Cistus* genus secrete essential oil and resin. Resins of the plant contain flavonoids, pro-anthocyanidins, terpenoids and tannins. Previous researchers illustrated that *Cistus* leaves does not only contain antimicrobial effects but also contains components against fungi that are responsible for human infections. On the other hand *Cistus* especially *Cistus* incanus, has a rising trend of production and usage in the other foods or medicines for its anticarcinogenic effects. For instance using *Cistus incanus* as a biological antibacterial mouth rinse is already a popular product and it was found to be contributing to the prevention of biofilm induced diseases in the oral cavity by decreasing the amount of bacteria. Consuming the *Cistus* plant is commonly at the form of tea in the traditional approach. Brewing of the previously dried plants is the main process and consuming it as a tea or as a solution typically for the wound healing or mouth rinse is the common practice. On the other hand alternative medicines have a rising trend all around the world and their common property is to have a polyphenolic compoınents which have strong antioxidant character. In this review we will present the health delivering components of the *Cistus* and its common usage with alternative consumption ways.

Key Words: *Cistus*, antioxidant, antimicrobial, herbal source

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Genetically Modified Organisms and Analysis Methods Used in Detection

Selin Engin ALİHANOĞLU[1*], Mehmet KARAASLAN[1], Hasan VARDİN[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
*Corresponding author: selinengin@harran.edu.tr

Abstract

Genetically modified organisms (GMOs) have been started to be produced for basic reasons such as to cure starvation, to nourish the world population, to increase agricultural productivity, to give agricultural products resistance against harmful insects and grasses, and to increase the shelf life and taste of foods with the developing biotechnological methods. Beginning to GMOs production also brought with them the debates about the damages that these organisms could cause. Even if apparent benefits and harms of these organisms have been studying in the light of scientific studies; the effects of on human health in the future could not be determined clearly. Thus in many countries legislative restrictions have been introduced against the present of these organisms in the food and feed chain and releasing them to the nature. Although the use of GMOs causes anxiety, GMOs have a rapidly growing production and utilization rate around the world. Thus, sensitive and reliable methods to detect GMOs were needed. This study aims to summarize general information about GMOs and to explain the analysis methods used in the determination of these organisms.

Key Words: Genetically modified organisms (gmo), legal restriction, gmo detection

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Isolation of Collagen in Chicken Skin: Drying and Degreasing Yield

Ümran CANSU[1], Gökhan BORAN[2*]

[1]Harran University, Şanlıurfa Technical Sciences Vocational School, Şanlıurfa-TURKEY
[2]Van Yüzüncü Yıl University, Department of Food Engineering, Van-TURKEY
*Corresponding author: gboran@yyu.edu.tr

Abstract

Collagen, the most abundant connective tissue protein of animals, is partially hydrolyzed to obtain water soluble, multi-functional and lower molecular weight collagen fractions, called gelatin. Gelatin has a wide range of uses and porcine skin is the most commonly used raw material in gelatin manufacturing, which is mostly opposed by Muslim and Jewish communities. Therefore, potential use of alternative raw materials has gained significance. In this study, chicken skin was evaluated as a potential raw material of gelatin by isolating collagen after drying and degreasing steps. According to the results obtained, chicken skin was composed of three basic components that were 53% water, 35% lipid and 11.5% protein. In order to get high yield and quality gelatin, it is necessary to successively remove water and lipid to isolate the skin protein. For that purpose, different drying and degreasing processes were applied to get the highest yield in terms of protein. At the end, 95% of water was able to be removed by freeze drying and similarly 70% of lipid by solvent extraction method, along with 70% total weight loss based on the weight of the raw skin. Hydroxyproline content of the test material was initially 13.3 mg/g raw skin at the beginning, and rationally increased to be 37.4 mg/g freeze dried skin after drying process and finally 51.8 mg/g resultant skin after degreasing process, which clearly indicates a successful isolation of collagen. Meanwhile, the protein content of dried and degreased chicken skin was over 50%. Therefore, it is concluded that chicken skin may be considered as an alternative raw material in gelatin manufacturing after sufficient drying and degreasing.

Key Words: Chicken skin, collagen, isolation, drying, degreasing

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Probiotics and Human Health

Vildan AKDENİZ[1*], A. Sibel AKALIN[1]

[1]Ege University, Faculty of Agriculture, Department of Dairy Technology, Izmir-TURKEY
*Corresponding author: vildan.akdeniz@ege.edu.tr

Abstract

Foods are not only for satisfy hunger and for deliver essential nutrients but also they prevent the development of nutrition-related diseases. Therefore, the functional foods containing probiotics are strongly preferred by the health-conscious consumers. According to the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO), probiotics are defined as live microorganisms, which when administered in adequate amounts, confer a health benefit on the host. There is a growing demand on functional foods fortificated with probiotics. The health benefits of different strains of probiotics have been reported in numerous studies. Human gut plays a major role in host health especially in defense function, eupepsia along with catabolism and anabolism, and impact brain-gut responses. The stimulation of beneficial intestinal microflora is very important to maintain the existence native probiotic bacteria and provide protection against freshly ingested microorganisms, including pathogens. Several health-promoting activities have been directly related to the presence of probiotics in the gastrointestinal tract, such as maintenance of innate microflora balance, immunostimulation and immunomodulation, improvement of lactose utilization and reduction of serum cholesterol levels. Also there have been other health effects of probiotics such as providing tumor inhibition by anti-microbial and anti-tumor effects, improving in host immunity (innate and adaptive), getting free of various mutagens by competitive binding and degradation, decreasing in the side effects of chemotherapy by metabolic activity improvement, direct inhibition of foodborne pathogens by competition, and contributing to the reduction of post-operative complications.

Key Words: Probiotic, functional food, health

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Dairy Products and Functional Effects

Serap FENDERYA[1*]

[1]Ege University, Ödemiş Vocational Training School, İzmir-TURKEY
*Corresponding author: serap.fenderya@ege.edu.tr

Abstract

Functional food is generally defined as " if it has been satisfactorily demonstrated to affect beneficially one or more target functions in the body beyond adequate nutritional effects". The market for functional food is growing fastly and today health -conscious consumers are more concerned with functional foods.
Functional compents of foods are frequently denoted as probiotics and prebiotics, soluble fibre, omega fatty acids, conjugated linoleic acid, antioxidants, vitamins and minerals, bioactive peptides and amino acids. Dairy products have been introduced as mainly part of functional food due to their valuable functional compents.
Fermented milks constitute a considerable part of dairy products and healthy diet. Yogurt is the best known fermented milk products especially yogurts fortified with probiotics are increasing in food market. Probiotics are defined as ‘‘live microorganisms, as they are consumed in adequate numbers confer a health benefit on the host’’, cultures must be viable for efficacy in all cases. Prebiotics are non-digestible food ingredients that beneficially affect the host by stimulating the growth and/or activity of one or a limited number of bacteria in the colon, thus improving host health. Nowadays, dairy products containing probiotics and prebiotics. The probiotic products are now considered helpful in maintaining good health, restoring body, and in combating intestinal and other disease disorders. Future studies will help elucidate the role of milk and dairy products in human health, their use within a balanced diet should be considered in the absence of clear contraindications.

Key Words: Fermented milks, Probiotics, Prebiotics, Functional food

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Research on Functional Properties of Ice Cream

Hidayet SAĞLAM[1*], Eyyüp ATAMAN[1], Erhan TURAN[1], Fatih KAYABAŞ[1], Hasan MHIMD IBRAHIM[1], Ibrahim TURKMANI[1], Cemil TEKE[2]

[1]Kilis 7 Aralık University, Faculty of Engineering & Architecture, Food Engineering Dept., Kilis-TURKEY
[2]Kilis 7 Aralık University, Voc. School of Social Sciences, Management and Organization, Kilis-TURKEY
*Corresponding author: hidayetsaglam@kilis.edu.tr

Abstract

The purpose of this study is to produce functional and highly attractive ice cream using probiotic bacteria and aroma components. Ten different aroma components were used and from within these components lavender oil, pistacia terebinthus oil and vinegar were preferred since their multiple functional properties and attractive aroma properties on ice cream. In addition to the functional properties of the ice cream, by adding probiotic cultures (*Enterococcus faecium, Lactobacillus acidophilus, Lactobacillus rhamnosus, Bifidobacterium bifidum, Bifidobacterium longum*), the effects of these additives on probiotic cultures and sensory properties were examined. Ice creams are produced by the traditional method and lavender oil, pistacia terebinthus oil and vinegar are added to the ice cream and also ice cream (containing probiotics) was produced for control purpose. The microbiological and sensory characteristics of the samples were examined during the 1st, 15th, 30th, 60th, 90th and 120th days, there were no significant decrease in the number of microorganisms. This is explained by the fact that the added additives (Lavender oil, *Pistacia terebinthus* oil and Vinegar) do not show antimicrobial effect on probiotic bacteria. So; it has been determined that ice cream can be produced in both functional and probiotic properties. According to the results of sensory analysis, at the end of storage period of 120 days, there was no negative change in ice cream. In order the taste was determined as ice cream containing vinegar, lavender oil and *Pistacia terebinthus* oil.

Key Words: Functional Ice Cream, Probiotic, Lavender Oil, *Pistacia terebinthus* oil, Vinegar

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

An Examination of the Table Olive Communiqué in Force and a Survey on the Comparison of it with the International Standards

Ayşen YILDIRIM[1*], Fatma ÖZTÜRK[2], Latife ERTEN CARAN[3]

[1]Olive Research Institute, Food Technology Department, İzmir-TURKEY
[2]Olive Research Institute, Agriculture Economy Department, İzmir-TURKEY
[3]Olive Research Institute, Plat Protection Department, İzmir-TURKEY
*Corresponding author: yildirimaysen9@hotmail.com

Abstract

Table olives are greatly consumed mainly by Mediterranean Sea area populations. It is very important product in our country's ecnomy and also in international market. The main elements of table olives quality are product safety and nutritional quality. Obtaining table olives in high quality can be succeed by implementing the production according to the standards and this will remove the obstacles on the table olive exports. Social, economic and agricultural issues such as raw materials, processing, preservation, storage, organization, marketing, foreign trade and branding that the olive sector carries in its own way affect our competitiveness negatively.Thus, the increase in the production of olives, in particular in the quality of the registered enterprises, in line with the quality and standards, offers the possibility of investigating the necessity of increasing the export in addition to satisfying the domestic demand. In this study the Table Olive Communiqué in force was examined, compared with the International Standards to see similar and different sides from eachother, problems related to the subject were determined and proposals were presented.

Key Words: Table Olives, Table Olive Standard, Communique, International Standard

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Microfibrillar Cellulose: Barrier Properties and Applications in Food Packages

Selim ŞILBIR[1*], Yekta GÖKSUNGUR[2]

[1]Iğdır University, Faculty of Engineering, Dept. of Food Engineering, Igdır-TURKEY
[1]Ege University, Faculty of Engineering, Dept. of Food Engineering, Bornova/Izmir-TURKEY
*Corresponding author: selim.silbir@gmail.com

Abstract

Interest in microfibrillar cellulose (MFC) has been increasing exponentially in recent years. Over the last decade, this biocompatible nanomaterial has been used in nanocomposites because of its supporting property. Its nano-scale and strong nano-porous networking capability have encouraged the emergence of new high-value applications. The form of production applied in the previous years has been developed by many optimizations and has been completely changed. New sources, new mechanical processes and new pre- and post-treatments are in the development stage to reduce high energy consumption and scale to produce new types of industrial MFC materials. Different MFC materials are intensively increasing due to their nano characterization possibilities. For this reason, the type of MFC materials and properties are very important. In addition, very close work has proven MFC's important barrier properties. Therefore, MFC barrier properties that are used in nanocomposites, or as food packagings, are recommended for focusing and also for sustainability reasons the renewability of the cellulose packaging materials is gaining importance. Manufactured MFC films have been shown good strength and flexibility properties. This study summarizes the current applicability of MFC's in packaging films and discusses the future trends and opportunities for these materials.

Key Words: MFC, Nanomaterials, Food Packaging Trends, Sustainability, Barrier properties

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Pre-Treatment Methods for Lignocellulosic Biomasses and Comparison of the Advantages

Selim ŞILBIR[1*], Yekta GÖKSUNGUR[2]

[1]Iğdır University, Faculty of Engineering, Dept. of Food Engineering, Igdır-TURKEY
[1]Ege University, Faculty of Engineering, Dept. of Food Engineering, Bornova/Izmir-TURKEY
*Corresponding author: selim.silbir@gmail.com

Abstract

Lignocellulosic materials are the most abundant, renewable, biological source material in the world. And pretreatment processes are generally used to effectively separate firmly interconnected lignocellulosic fractions and to increase the accessibility of each component and thereby become an important step in a wide range of applications like cellulosic ethanol production. However, a great difficulty is the removal of refractory and hard lignin components, which are highly resistant to solubility and are important inhibitors of hydrolysis of cellulose and hemicellulose. Pre-treatment methods include physical, chemical and biological(enzymatic) methods. The selection of the pre-treatment method is specific to the practice. Integrated processes that combine two or more pretreatment techniques, compared to single pretreatment processes, are useful in reducing the number of operational steps and minimizing the production of unwanted inhibitors. This study shows the importance of selected pretreatment methods on sugar yield by avoiding the degradation of sugars derived from hemicellulose and minimizes the formation of inhibitors for the subsequent fermentation steps and compares the results.

Key Words: Lignocellulosic materials, Pre-treatment methods, Physical treatments, Chemical treatments, Biological treatments

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of Lipid Oxidation Levels of Different Weighted Döner During Cooking

Aslı ZUNGUR BASTIOĞLU[1,2], Berker NACAK[1,3], Meltem SERDAROĞLU[1*]

[1]Ege University, Engineering Faculty, Food Engineering Department, Bornova, Izmir-TURKEY
[2]Adnan Menderes University, Engineering Faculty, Food Engineering Department, Aydın-TURKEY
[3]Uşak University, Engineering Faculty, Food Engineering Department, Uşak-TURKEY
*Corresponding author: meltem.serdaroglu@ege.edu.tr

Abstract

Döner, generally made of beef, lamb, veal or poultry meat, is a traditional hot meal in Turkey, which is also popular all around the world. A cone shape is given to the mix, and it is placed on a special döner spit and the mass is refrigerated to allow the meat and fat particles to cohere. Döner is cooked in front of a device similar to a vertical grill. Döner is susceptible to lipid oxidation due to high fat content and cooking method. The fat content of döner ranges between 20 and 40%, and döner's weight is usually between 10 and 50 kg. The objective of this study was to determine lipid oxidation changes of döners which were made with 10, 25 and 50 kg beef meat, animal fat and seasoning mixture, during cooking process. Thermocouples were placed in the different points of döner during preparation steps. The temperature was recorded every 30 minutes during cooking, and samples were taken every 60 minutes for TBA analysis. TBARS value of mixture dough (49.30% moisture, 23.22% fat, 19.96% protein and 2.39% ash) before freezing was 0.072 mg MA/kg and TBARS values were found 0.30, 0.28 and 0.71 mg MA/kg at the 5th hour of the cooking period for the samples made with 10, 25 and 50 kg döner mixture, respectively. According to results, TBARS values of 50 kg döner were higher than the other samples.

Key Words: Döner, traditional meat product, TBA value

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Edible Film and Coatings in Food Preservation

Selin ALİHANOĞLU[1], Esra ABACI[1], Mehmet KARAASLAN[1], Hasan VARDİN[1*]

[1]Harran University, Engineering Faculty, Food Engineering Dept., 63040, Şanlıurfa-TURKEY
*Corresponding author: hvardin@harran.edu.tr

Abstract

The quality of food is generally related to the packaging attributes and packaging material. Foods are deteriorates in quality, such as, oxydative reaction, moisture transfer, flavor loss, undesirable odor formation, and the migration of packaging material components into the food. These reactions can occur between the food and the packaging materials, between the food product and the atmospheric environment, or between the ingredients in the food product itself. The functional properties and efficiency of edible film and coatings are highly dependent on the inner-natural characteristics of film materials. Edible biomolecules such as proteins, polysaccharides or lipids, including plasticizers and food-grade additives are used for producing edible films and coatings which are used to protect foods and extend their shelf life and which can be regenerated with a thin layer of food, renewable with food, obtained from natural sources rather than synthetic, and able to control moisture, gas and solid mobility when applied to the food surface. Edible coatings have a close and continuous association with the food until consumption, also they can act as carriers of active substances (antioxidants, antimicrobials, vitamins, colorants, and flavoring agents). Today, many fruit and vegetables, nuts, meat and meat products, dairy products, sugar, tablets and many other industrial foods are covered with edible films. Specific methods such as dipping, pouring, spraying, dripping and foaming are applied to the coating of food with edible films. The characteristics of food and consumer needs are the main reasons for these methods.

Key Words: Packaging, Edible films, Coating, Food Preservation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Phenylketonuria (PKU): Causes, Symptoms, Diagnosis, Metabolism, Treatments and Production of Phenylalanine-Free Foods

Ali YILDIRIM[1*], Servet SAMAKLI[1], Ahmet Ferit ATASOY[1]

[1]Faculty of Engineering, Department of Food Engineering, University of Harran, Şanlıurfa-TURKEY
*Corresponding author: ayildirim10@gmail.com

Abstract

Phenylketonuria (PKU) is one of the most widespread dysfunctions caused by an inheritable problem in the phenylalanine metabolism. In this metabolic disease, gene mutations in phenylalanine hydroxylase (PAH) result in phenylalanine accumulation that causes varying degrees of mental retardation. There are a considerable number of individuals suffering from PKU and they need special food formulations, but the choice of special foods is limited for these people. The most effective treatment is restriction of phenylalanine in diet provided through different strategies including combination of low-protein foods, hydrolyzing of protein-rich foods, or use of protein substitutes. Meat and meat products, sea foods, milk and infant formula, cereal products, and beans are among the modified foods for PKU management. Elimination of phenylalanine from food presents major technological, nutritional, and organolleptic challenges because protein, as an essential structure building and nutritional element, is removed. In addition, following this program is laborious, boring, and restrictive for both patients and their families. This paper reviews the history, metabolism, diagnostic method, symptoms, treatments, the current findings about PKU and the recent developments in the production of phenylalanine-free foods. Also, the nutritional requirements and challenges encountered by PKU individuals and food technologists are finally discussed.

Key Words: Food, Nutrition, Phenylketonuria, Phenylalanine

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Applications of Lactulose in Food Industry

Emine NAKİLCİOĞLU-TAŞ[1*]

[1]Ege University, Faculty of Engineering, Food Engineering Department, Izmir-TURKEY
*Corresponding author: mine_n@hotmail.com

Abstract

Lactulose (4-O-β-D-galactopyranosyl-D-fructose), a disaccharide, has considerable interest in the food and pharmaceutical industries. It is firstly produced from lactose by isomerization in alkaline solutions or during heat treatment of milk. It is referred to as bifidogenic factor due to the fact that lactulose stimulates the growth of bifidobacteria. Lactulose is used in several foods as a bifidus factor or as a functional ingredient for intestinal regulation. Lactulose can be utilized as a sweetener for diabetics, as a sugar substitute in beverages, confectionery products, bakery products, infant milk powders, yoghurts, dairy desserts and in different liquid or dried food preparations which are produced for old people. In the literature, there are many studies that determine the change in behaviour of lactulose during processing of products like yoghurt, cookies, cake, chocolate, etc. It has been observed that lactulose provides some useful modifications to food flavour and physicochemical characteristics due to its properties such as flavour enhancing effect, favourable browning behaviour, excellent solubility in water etc. For example, in yoghurt production, Lactobacillus rhamnosus and Bifidobacterium bifidum were found to be extremely stable and to survive a slightly better period of time in the presence of lactulose. As a result, lactulose is seen as having a wide range of applications in the food sector due to its unique properties including prebiotic properties. In the future, it will become one of the interesting ingredients that can be added to many products different from the existing products as a food supplement.

Key Words: bifidus factor, lactulose, sweetener

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Methods to Determine Lactulose in Foods

Emine NAKİLCİOĞLU-TAŞ[1*]

[1]Ege University, Faculty of Engineering, Food Engineering Department, Izmir-TURKEY
*Corresponding author: mine_n@hotmail.com

Abstract

Lactulose (4-O-β-D-galactopyranosyl-D-fructofuranose) is a synthetic non-digestible disaccharide composed of fructose and galactose bonded together with β-1,4-glycosidic bond. The empirical formula, molecular weight and melting point of lactulose are C12H22O11, 342.30 g·mol-1 and 169ºC, respectively. It is 1.5 times sweeter and more soluble than lactose. Lactulose is utilized for treatment of some diseases such as hepatic encephalopathy, chronic constipation, and inflammatory bowel disease in pharmaceutical industry. It decreases blood glucose and insulin levels (anti-diabetic) and increases minerals absorption. It has also been expressed that anti-endotoxin and tumor prevention effects as well as cholesterol-lowering effect. In food industry, lactulose is used as a bifidus factor and as a unique ingredient for acidic foods such as fruit juices due to its high stabilization under thermal-acidic conditions. As the analytical technologies used in the lactose determination in food are developed, the detection and quantification become increasingly simple, fast and precise. It has been reported that the presence of a number of methodologies used to determine the lactulose such as UV-vis spectrophotometer, high-performance liquid chromatography, gas-liquid chromatography, thin-layer chromatography and other techniques including capillary electrophoresis, differential pH methods, flow injection analysis methods. Every technique has several advantages and disadvantages. Although spectrophotometric methods require limited costs for a single analysis, instrument and their maintenance, most of them are not specific for lactulose. HPLC and GC methods have excellent accuracy and high resolution. However, the preparation of lactulose volatile derivatives is required in the GC method. Reliable results can be also obtained by other methods using relatively simple procedures.

Key Words: capillary electrophoresis, gas-liquid chromatography, lactulose

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Total Flavonoid Content and Antioxidant Activity of Pomegranate (*Punica granatum* L.) Cultivars in Şanlıurfa Region

Hasan VARDİN[1*], Mehmet KARAASLAN[1], Fatih Mehmet YILMAZ[2]

[1]Harran University, Engineering Faculty, Food Engineering Dept., 63040, Şanlıurfa-TURKEY
[2]Adnan Menderes University, Engineering Faculty, Food Engineering Dept., 09010, Aydın-TURKEY
*Corresponding author: hvardin@harran.edu.tr

Abstract

Pomegranate (*Punica granatum* L.), is mainly grown in Mediterranean region and Middle East Countries. It is one of the major vegetable productions of these region, which have been used in folk medicinal purpose for many centuries. Pomegranate juice contains high levels of antioxidants, greater than most other fruit juices also green tea and red wine. These antioxidants include phytonutrients such as polyphenol, tannins and anthocyanins. Pomegranate juice is more potent in improving antioxidant function than other fruit because of its concentrated amount of phenolic compounds for daily consumption. This study compares the antioxidant activity, total phenolic and flavonoid contents of six different pomegranate cultivars grown in Şanlıurfa Region. It is observed that Sour Suruç cultivar had the most antioxidant effect with significant difference with the other cultivars ($p < 0.05$) which can be thought as a potent source of natural antioxidants. Also, the peel of three cultivars (Hicaz, Sour Suruç and Katine) is a suitable source for extraction of phenolic and flavonoid compound. It is found that, the correlation value between the flavonoids content and antioxidant capacity is 0.91 (R2) for the pomegranate cultivars, show that the flavonoids are among the microconstituents contributing to the antioxidant activity of pomegranate. The antioxidant capacity of pomegranate peel extract is ˜9 times higher than the juice extract.

Key Words: Pomegranate, Total Phenolic Content, Antioxidant Activity

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Gelatin Clarification on the Total Phenolic Content (TPC), Antioxidant Capacity (AC) and Physical Properties of Pomegranate Juices

Hasan VARDİN[1*], Fatih Mehmet YILMAZ[2], Mehmet KARAASLAN[1]

[1]Harran University, Engineering Faculty, Food Engineering Dept., Şanlıurfa-TURKEY
[2]Adnan Menderes University, Engineering Faculty, Food Engineering Dept., Aydın-TURKEY
*Corresponding author: hvardin@harran.edu.tr

Abstract

Pomegranate originated from South East Asia. From there, it was spread over Uzbekistan, Iran, Turkey, and the Mediterranean region. Pomegranate juice yield could be increased up to 56% but such juice was of excessive astringency due to tannins. Clarification is necessary to prevent the formation of cloudy appearance and astringency during storage. In addition, the taste of the product is improved by means of clarification. In this study, The pomegranate juice was produced from whole pomegranate using by a hydraulic press. The juice was clarified by adding Gelatine as clarification agent. In the gelatin clarification, besides of bentonite (2 g/l), 6 different amount of gelatin (0.5, 1, 1.5, 2, 2.5 and 3 g /l) were added at 20°C. Results of gelatine clarification were compared with the natural (only 2 g/l bentonite) clarification. As the material, 3 different cultivars (Hicaz, Suruç and Katine) were used for producing pasteurized pomegranate juice. In order to determine the effects of gelatine clarifying process on product quality as pH, total phenolic content (TPC), antioxidant capacity, turbidity, and hunter color values were applied to each sample. In clarification, the main purpose was to reduce the amount of phenolic content. An increase in the gelatine amount especially decreased the color values. The most effective gelatine level was the application of 2 g/L gelatine for clarification. In all clarified samples, there was a progressive decrease in antioxidant capacity and TPS content with increasing gelatine amount and time.

Key Words: Pomegranate, Juice, Clarification, Gelatine, Color values

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Use of Ionized Radiation in Spices

Büşra ACOĞLU[1], Perihan Yolci ÖMEROĞLU[1*], Tuğba ÖZDAL[1]

[1]Uludag University, Faculty of Agriculture, Food Engineering Department, Bursa-TURKEY
[2]Okan University, Faculty of Engineering, Food Engineering Department, Istanbul-TURKEY
*Corresponding author: pyomeroglu@uludag.edu.tr

Abstract

Food irradiation is the treatment of food with a type of radiation energy known as ionizing radiation. Ionizing radiation at the levels used for food irradiation contains enough energy to kill bacteria, molds, parasites and insects. Spices and herbs are commonly used in foods, for enhancing the taste, improving quality, preserving food, and extending shelf-life. Contamination of herbs and spices with pathogenic bacteria is well known problem, attributed in part to growing conditions and environment, sanitation and hygiene practices among harvest workers, and lack of good agricultural and manufacturing practices within some developing countries. Therefore, it is important to sterilize the spices with a proper method while preserving the shelf life and quality. There are many different methods of sterilization for spices. Ionized radiation is widely and effectively used for sterilization in the spice sector to control microorganisms, insects and the losses that can occur during storage and distribution. Irradiation has less destructive effect on vitamins and essential oils than other food preservation methods. The results showed there is an adverse effect of increasing radiation dose on the color preference, taste, and hardness. Moreover, irradiation can lead to undesirable side effects such as oxidation and discoloration in various colors. The effects of irradiation on the quality of the various spices have been investigated in literature. For example, when fresh ginger was irradiated with 5 kGy dose, shelf life was reported to be extended over 2 months. 7 kGy irradiation caused colorless in rosemary and black pepper. In this presentation, ionizing radiation method, its regulation and its application to spicies are aimed to be discussed in detail.

Key Words: Spices, ionize radiation, sterilization, novel technologies

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Non-Thermal Food Processing Technologies on Reducing Pesticide Residues

Büşra ACOĞLU[1], Perihan YOLCİ ÖMEROĞLU[1*], Canan Ece TAMER[1], Ömer Utku ÇOPUR[1]

[1]Uludag University, Faculty of Agriculture, Food Engineering Department, Bursa-TURKEY
*Corresponding author: pyomeroglu@uludag.edu.tr

Abstract

Pesticides are used to protect crops before and after harvest. The lowest amount of pesticide should be applied to crop to achieve the desired effect as well as derive the lowest amount of residue on the food. It has been reported that the amount of pesticide residue can be reduced during the food processing chain. Since, heat treatment applications may lead to significant changes in the nutritional value and sensory properties of food, considerable interest have been aroused in the development of novel non-thermal food-processing techniques. These technologies include high hydrostatic pressure, cold plasma, pulsed electric field, ultraviolet radiation, ultrasonic application, ozonetreatment etc. These new food preservation techniques are generally performed at lower temperatures than conventional processing methods, resulting in minimal food quality losses. It has been also noted that non-thermal technologies has an effect on reduction of pesticide residues in foods. The study conducted on the degradation of 2-chloropyridine in water by using ultraviolet lamp and ultrasound irradiation revealed 90% reduction in the concentration. When 1 kGy radiation dose was applied to eggplant, diazinon, chlorpyrifos and phosphamidon residues decreased by 80-91%, 85-90% and 90-95% respectively. Application of cold plasma for 5 minutes at 80 kV in blueberries resulted in 75% reduction for imidacloprid and 80% for boscalid. High hydrostatic pressure application to brussels sprout leaded to 80% reduction in the amount of chlorpryfos. The application of ozone to tomatoes at 600 ml/min at15^{o}C decreased the amount of imidacloprid by 40%, fenazaquin by 57% and lambda cyhalothrin by 20%. In this presentation, the effects of non-thermal technologies on the fate of pesticide residues in foodsare aimed to beexplained in detail.

Key Words: Pesticide residues, non-thermal food processing technologies, cold plasma, high hydrostatic pressure

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Relationships Between Milk Protein and Total Bacteria Counts

Özlem ERTEKİN[1], Burhan TEKDEMİR[1], Murat ÇİMEN[1*]

[1]Munzur University, Department of Food Engineering, Tunceli-TURKEY
*Corresponding author: mcimen@munzur.edu.tr

Abstract

The objective of this study was to evaluate the influence of milk protein on total bacteria counts of raw milk. In the research, 10 cows were used. To determine milk total protein and total bacteria counts, milk samples were collected from each cow in second week of lactation period by hand milking. Linear regression models are used to predict the interactions among two variables or factors. There were no found important relationship between milk total bacteria counts and total protein rates. The effective factors on milk total protein and total bacteria counts are noteworthy for dairy producers. The interactions and relationships between milk total bacteria counts and total protein in dairy animals for all lactation period have not been investigated. Further researches are needed to research on interactions between milk total bacteria counts and total protein for different lactation period.

Key Words: Milk, total bacteria, total protein, relationship

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Determination of Suitability to European Union Quality Standards of Somatic Cell Count in Milk Obtained from Holstein Cows Having Different Birth Sex

Özlem ERTEKİN[1], Yeliz YILMAZ[1], Murat ÇİMEN[1*]

[1]Munzur University, Department of Food Engineering, Tunceli-TURKEY
*Corresponding author: mcimen@munzur.edu.tr

Abstract

In this research, differences between somatic cell counts (SCC) in milk obtained from Holstein cows having female and male calves and European Union (EU) quality standards were studied. 10 Holstein cows having male calves and 10 Holstein cows having female calves that are grown in Bursa were used as animal material. The daily milk samples during second week of first month of postpartum period were collected from ten cows in both groups. In the study, differences between SCC in milk of Holstein cows having different birth sex and EU quality standards were obtained. The Milk SCC levels of cows in both groups were compared with the quality standards for European Union (max. 400000 cell ml^{-1}) using one-sample t test. Milk SCC levels in cows having male calves (85670 cell ml^{-1}) and dams having female calves (98344 cell ml^{-1}) are desirable levels according to EU quality standards. The somatic cell count is important to production of dairy products both because counts that are too high can lead to poor milk quality and unfavorable taste. According to results in study, SCC levels in milk collected from Holstein dams having different birth sex are favorable to European Union standards.

Key Words: Milk, Somatic cell count, Holstein, Cow, EU Quality standards

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Fatty Acids and Sterol Compositions of Some Black Cumin Seed (*Nigella sativa* L.) Oils with GC-FID

Yılmaz UĞUR[1*], Rukiye YAMAN[1], Selim ERDOĞAN[2]

[1]Apricot Research Institute, Malatya-TURKEY
[2]Inonu University, Faculty of Pharmacy, Malatya-TURKEY
*Corresponding author: yilmaz.ugur@tarim.gov.tr

Abstract

Many plants have been used for medical purposes in the world since ancient times. Black seed is much consumed plant especially in the Mediterranean and Middle East countries, and it is known that the effects of human health such as anticancer, antidiabetic, antimicrobial, anti-inflammatory. The oil obtained from the black cumin seed is taken part in the market as a commercial product. However, some doubts about quality and evaluation of quality of the products is still continue. The effectiveness, reliability and quality of products are the most important factors that directly affect human health. This study is aimed to detect the fatty acid and sterol compositions with GC-FID to determine the quality of some black cumin seed oil supplied from the market. For this purpose, four different oil were analyzed.

As a result of analyzes, distribution of the important fatty acids of black cumin oil was found to be in the range of linoleic acid (31.967-62.289 %), oleic acid (24.23-53.437 %) and palmitic acid (6.664-12.256 %); sterol compounds were detected in the range of brassicasterol (1.508- 9.122 %), campesterol (7.848-30.491 %), stigmasterol (2.910- 16.571 %) and total beta.-sitosterol (50.912- 58.798 %).

In this study, analysis commercial black cumin seed oil with GC-FID was showed that fatty acid distribution values was generally similar according to other studies; however some proportional differences have been identified comparing to each other.

Key Words: Black seed (*Nigella sativa* L.), fatty acid composition, GC-FID

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Debates on High-Fructose Corn Syrup

Merve ARIBAŞ[1*], Özen ÖZBOY ÖZBAŞ[1]

[1]Aksaray University, Department of Food Engineering-TURKEY
*Corresponding author: mervesert@aksaray.edu.tr

Abstract

High-fructose corn syrup (HFCS) is a solution including both glucose and fructose. Fructose and glucose ratios in HFCS vary by based on intended use. Fructose concentrations in the HFCS are used by 90%, 55%, and 42%. HFCS is used as a sweetener alternative to sucrose. These sweetener derived from corn starch. It is created in isomerase technology. The enzyme converts corn starch into corn syrup, then into fructose. As the enzyme makes glucose into fructose, the syrup becomes sweeter. HFCS can be found in various food products, including yogurts, baked goods, canned and packaged foods, candies, jams to improve the functional properties of such products. Some of these functions are to contribute fruit and spice flavors, prolongs product freshness and surface browning in baked goods. These effects are similar with sugar in food. HFCS as a liquid has advantages of blending easily with other ingredients, easy pouring and mixing in beverages and being more cheaper than sugar. Despite of these advantages, HFCS has some negative effects on health. A link between increased consumption of HFCS and obesity has been assumed. Animal research and a small number of human studies support this hypothesis. Also fructose consumption in humans leads to increased fat accumulation, impairment in the regulation of fats in the blood and decreased insulin sensitivity. But no matter the source of sugar, intake of sugar into the body should not be too high above all.

Key Words: High-fructose corn syrup; Public health

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Gluten-Free Diet or Not?

Merve ARIBAŞ[1*], Özen ÖZBOY ÖZBAŞ[1]

[1]Aksaray University, Department of Food Engineering-TURKEY
*Corresponding author: mervesert@aksaray.edu.tr

Abstract

Gluten is a glycoprotein composed by two components gliadin and glutenin. It is found in wheat, barley, rye and in oats. The gluten matrix and its functional properties provide to determining the dough quality of bread and other baking products such as pasta, cakes, pastries, and biscuits. The ratio of glutenins to gliadins, and the interactions between glutenins and gliadins are responsible for the rheological and functional properties of gluten. Every component has a different, important functions. Gliadins contribute to the viscosity and extensibility of the dough, glutenins have a cohesiveness feature and contribute to dough strength and elasticity. On the health point of view, gluten consumption is known to have an adverse effect on patients with celiac and gluten sensitivities. Recently, some medical doctors and media tools have begun to warn healthy people about not consuming bread and gluten-containing foods. In some medical journals claim that gluten may increase the risk of obesity, metabolic syndrome, neuropsychiatric symptoms, and cardiovascular risk among healthy people. So, gluten-free diet became a trend to for people. But this situation is not always true, there are some claims just opposite it. Many studies assert link between whole grain consumption with improved health out comes. Also some researchers found thatg luten consumption does not increase the risk of heart disease. Indeed avoiding from gluten can reduce the intake of healthy whole grains. Besides, some scientists from Harvard and Columbia Universities said that gluten-free diets should not be recommended to healthy people for avoiding heart diseases.

Key Words: Gluten-free diet; Public health; Gluten-free product

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Isolation and Molecular Identification of the Yeasts with Various Extracellular Enzyme Production Capacities from Fruits

Hüsniye Tansel YALÇIN[1*], Meryem Begüm FINDIK[1], Ebru UYAR[2], Yiğit TERZİ[1]

[1]Ege University, Biology Department, Basic and Industrial Microbiology Section, İzmir-TURKEY
[2]Harran University, Biology Department, Molecular Biology Section, Şanlıurfa-TURKEY
*Corresponding author: tansel.yalcin@ege.edu.tr

Abstract

Enzymes, known as the biological catalysts, are one of indispensable constituents of the living beings that accelerate the spesific form of reactions to ensure a stable internal environment without formation of any unwanted compounds. Considering the advantage of this feature, many enzymes especially from microbial origins are applied in a wide range of industrial areas including food and food processing industry, agriculture, and pharmaceutical industry, etc. Numerous number of microbial enzymes from fungi including amylolytic enzymes, proteases, lipases, invertases, phytases, and as such have been successfully used suggesting that fungal species as a valuable source of microbial enzymes. Therefore, we aimed to isolate novel yeast strains capable of producing industrially important enzymes in this study. To do this, morphologically distinct eighteen yeast isolates were obtained from different fruit samples including quince, pear, avocado, pineapple, grape, banana, *Pyracantha coccinea* berries, kiwi, coconut, mango, damson plum, and grapefruit. The isolates were then subjected to screening for the production of extracellular enzymes such as amylase, β-galactosidase, protease, phytase and lipase. Molecular characterizations of the yeast isolates that gave the best results to screening studies were performed according to the sequencing analysis of the variable D1/D2 domain of the large-subunit (26S) rDNA. Sequencing results indicated that the potential yeast strains with extracellular enzyme production capacities were from *Candida* (*C. tropicalis*, *Candida sp.*), *Meyerozyma* (*M. guilliermondii*, *M. caribbica*), and *Clavispora* (*C. lusitaniae*) genera.

Key Words: Isolation, yeast, extracellular enzymes, molecular identification, food processing

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Isolation of Novel *Aeromonas* sp. Strains Producing Extracellular Protease/Amylase/Lipase Enzymes

Ebru UYAR[1*], Hüsniye Tansel YALÇIN[2]

[1]Harran University, Biology Department, Molecular Biology Section, Şanlıurfa-TURKEY
[2]Ege University, Biology Department, Basic and Industrial Microbiology Section, İzmir-TURKEY
*Corresponding author: ebruuyar@harran.edu.tr

Abstract

Enzymes, although not in isolated form, have been applied traditionally for centuries in dairy, baking and brewing. Inspired by this fact, today, enzymes are used in food and food processing industries for many reasons such as providing quality and stability of the food products and increasing production efficiency. Apart from that, use of enzymes also bring some advantages such as providing environmentally-friendly products for costumers, generating less waste, reducing energy consumption and contributing sustainability profile of industrial process. As industrial processes become more diversified, different enzymes that can adapt to these processes are needed. Microorganisms have served as a main source of many enzymes. To find indigenous enzyme producer bacteria, in this study, environmental water samples were collected. Extracellular enzyme productions were evaluated on solid medium for protease, amylase and lipase since these enzymes have the biggest market share among the industrial enzymes. Based on microscopic characters and biochemical tests, we found that the promising bacterial isolates are non-spore forming, rod-shaped and gram negative. Further molecular characterization by PCR amplification and sequencing of 16S rDNA regions indicated that the bacterial strains are belonged to genus *Aeromonas*. When consider high halo zone formation potential of the relevant extracellular enzymes, we expect that after enzyme characterization studies, these *Aeromonas* sp. strains could be used as a source of genes during molecular cloning procedure for simultaneous production of all extracellular enzymes in another commercial bacterial host.

Key Words: Isolation, bacteria, extracellular enzymes, 16S rDNA, food processing

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Possibilities of Using Probiotics in Cheese

Büşra GÖNCÜ[1*], Aslı ÇELİKEL[2], M. Serdar AKIN[1], M. Buket AKIN[1]

[1]Harran University, Engineering Faculty, Department of Food Engineering, Şanlıurfa-TURKEY
[2]Mardin Artuklu University, Tourism and Hotel Management College, Mardin-TURKEY
*Corresponding author: busragoncu@harran.edu.tr

Abstract

Probiotics are live food additives that provide beneficial effects to host health by providing and improving intestinal microbial balance. Cheese is also included in these microorganisms. After the full fat milk, crema or partially or completely ground milk, buttermilk or a mixture of some or all of them has been coagulated with the appropriate proteolytic enzymes called cheese yeast or harmless organic acids; is the milk product that is obtained by whey, shaping and salting, consumed after fresh or matured. Especially, interest and expectations for these types of products are also increasing because of with increasing consumer awareness of healthy and balanced nutrition in recent years. In this sense, milk and its products, especially probiotic products, are at the forefront. Advantages of probiotic bacteria and their positive effects on human health are increasingly emphasized and there is an increase in the consumption of fermented dairy products produced with probiotic bacteria. Probiotics are used such as yoghurt, vanilla, fruit flavored and milk drinks, butter, cheese, ice cream, puddings, cakes and baby foods. In this study, the use of probiotic bacteria in cheese as well as health and nutritional properties have been compiled.

Key Words: Health, probiotics, cheese

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Cacao Flavored Whey Drink Production

Elif Ayşe ANLI[1*], Damla SERT[1]

[1]Ankara University Agricultural Faculty Dairy Technology Department, Ankara-TURKEY
*Corresponding author: kocaoglu@agri.ankara.edu.tr, elifaysekocaoglu@gmail.com

Abstract

Whey is the liquid portion, yellow-green in color, remaining after precipitation of milk and separation of the coagulum. It is divided into two according to the agent used in precipitation being either acid or rennet whey. Because of its nutritional and functional properties it has many industrial potential. Whey, a dairy by-product, nearly contains half of milk dry matter and it is a rich source of protein, lactose, fat and minerals. Since it is rich in nutrients when drained as dairy waste directly, it causes environmental contamination. Approximately, 8-9 tons of whey is obtained from 1 tone of cheese production. This obtained whey can be used either directly or as whey concentrate, whey powder, whey protein concentrate, whey protein powder and lactose form in different areas as; animal nutrition, food industry, pharmaceutical and industrial products. In food industry, whey is used in bakery products and drinks. In this study, possibility of cacao use in whey drink production was investigated. According to formula prepared, rennet whey, cacao and sugar were used; cacao was added in different ratios. Cacao flavored whey drink samples were investigated in their chemical, physical and sensorial attributes.

Key Words: Whey, whey drink, cacao

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Space Foods and Future Migration to Mars

Mustafa BAYRAM[1*], Remziye AŞAR[1]

[1]Department of Food Engineering, Faculty of Engeenering, University of Gaziantep, 27310 Gaziantep, Turkey
*Corresponding author: mbayram@gantep.edu.tr

Abstract

Mars planet is a new target and will be a future living center for human. This goal will be important in the food supply. The transferring of food from the world to Mars will be very expensive and limited. Alternative space food systems are being explored for long duration mission. Instead of transfer of food to Mars, the visioners and researchers focused on the food growth and processing in Mars planet. This problem provides a lot of research for food production and food processing related to Mars project. The decline in food production and consumption in the future, provides orientation for a new food production area. Therefore, the foods that can additionally be used in future production and consumption will be designed in Mars planet. The first travel to Mars is planned at 2022 or 2023. When the first colony is arrived to Mars, food will be required. To feed first colony food processing equipment and plants are additionally another required facilities. Especially, unit operations (drying, cooking, evaporation, heating etc.) will be important for the processing of food in Mars plant. A food plant for Mars should be designed for first production. The first study about food plant in Mars planet is #MFPM (Mars Food Plant Mission). Therefore, these unit operations should be simulated according to Mars conditions. In this study, Mars food supply and processing were investigated.

Key Words: Mars; space food; unit operation; MFPM; processing

Agriculture Engineering Poster Presentations

Agricultural Economics Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

New Approaches in Biofuel Production "Biodiesel Production from Microalgae"

Baran YAŞAR[1*], Dilek BOSTAN BUDAK[2], Zeynep ZAİMOĞLU[3]

[1]University Of Cukurova, Faculty of Agriculture, Agricultural Research, Education and Implementation Farm
[2]University Of Cukurova, Faculty of Agriculture, Department of Agricultural Economics, Adana
[3]University Of Cukurova, Department of Environmental engineering, Balcalı, Adana
*Corresponding author: byasar@cu.edu.tr

Abstract

In today's world where global warming is accelerating, various projects are being carried out in the world to meet the growing need for energy, and after scientists' long pursuits they have discovered renewable energy biofuels that can be achieved with completely natural methods that can create new world order. Biofuels consist of alternative fuels suitable for use as renewable energy source, environmentally friendly, heat, power and alternative motor fuels, important for the socio-economic development of the countries, resource diversity and supply security. Third generation biofuels are assessed from the potential and future of biofuels (biodiesel, bioethanol, biogas) that are important biofuels for our country. Due to reasons such as increased fuel prices and the need to reduce emissions, biodiesel has received great interest in recent times. Microalgae among the broad sources of biodiesel are alternative sources of hope and hope that they are high biomass oil production and environmentally friendly. Microalgae is the most important third generation biofuels.
In this study, third generation biofuels are described and different technologies are compiled in biofuel production to help researchers around the world to carry out further research on this vital field. They have argued the importance of producing biogas and biodiesel from algae.

Key Words: algae, biodiesel, biofuel

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Olive Oil: Healty Source for All Ages

Fatma ÖZTÜRK[1], Ayşen YILDIRIM[1], Latife ERTEN[1], Önder ERALP[1]

[1]Olive Research Institute, Bornova-İzmir-TURKEY
*Corresponding author: Not identified

Abstract

Olive production in the world is concentrated on the Mediterranean coasts. Spain, Italy, Greece, Tunisia and Turkey are major olive oil producing countries and Turkey is in the 5th place with 5,3% share of world olive oil production. With the nutritional and economic importance in the kitchen culture, olive and olive oil is based on very ancient histories like 8000 years This can be expressed as the best evidence of the place and continuity of olive in human health. Olive oil is preferred as the main oil source of the diet known as the traditional Mediterranean diet and identified with a dietary habit associated with a healthy long life. Many studies have been carried out in the world about the benefits of olive oil and its health effects and these studies are still going on. It is known that olive oil has positive effects on arterial stiffness, heart diseases, stomach, intestines and gall bladder. In addition, the positive effects of olive oil on child development are among the research topics. On the other hand, olive oil used in the production of oily solutions and in the preparation of many medicines is also used as raw material for the cosmetic industry. In this study, statistics on olive oil production, consumption and exports in Turkey were examined and the effects of olive oil on health were also included.

Key Words: Consumption, Olive oil, Healthy, Mediterranean diet

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Agricultural Extension Activities of Publicly Working Agricultural Engineers in the Province of Şanlıurfa

Fatma ÖCAL KARA[1], Mehmet Reşit SEVİNÇ[2], Muhammed Ali PALABIÇAK[1], Remziye ÖZEL[1], Tamer IŞGIN[1], Gönül SEVİNÇ[1]*

[1]Harran University, Faculty of Agriculture. Department of Agricultural Economics, Sanlıurfa-TURKEY
[2]Harran University, Bozova Voc. School, Sanlıurfa-TURKEY
*Corresponding author: gsevinc@harran.edu.tr

Abstract

Agricultural extension is one of the most important components of rural development. Turkey is developing different models of agricultural extension according to the conditions. Nowadays, the majority of agricultural extension is carried out by provincial offices of Ministry of Food, Agriculture and Livestock (MFAL). This study was carried out in order to determine the involvement of agricultural engineers in agricultural publishing studies, the difficulties they encountered in their work, their participation in the projects. The main material of the study is based on the data obtained from face-to-face surveys with 67 subjects who want to participate in the survey from agricultural engineers working in DPFAL and GAP Agricultural Research Institute in Şanliurfa Province in 2017. According to the results of the research, 55% of the subjects participate in publishing studies and 45% do not participate. The problems most frequently encountered in their work, are difficulties in changing the conventional practice of the producers and lack of communication. 59% of the engineers state that they consider themselves sufficient in their profession. As a result, in order for the farmers to understand the importance and indispensability of extension activities, a number of strategies need to be developed and implemented to improve both the public extension services and the private extension services.

Key Words: Agricultural Extension, Agricultural Engineers, Şanlıurfa

Animal Science Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Egg Yield and Hatchability Characteristics of Native Geese in the Kars Region

Cavit ARSLAN[1*], Mustafa SAATCI[2]

[1]Selcuk Univ., Faculty of Vet. Medicine, Dept. of Animal Nutrition and Nutritional Diseases, Konya-TURKEY
[2]Mugla Sıtkı Kocman Univ., Faculty of Agriculture, Dept. of Animal Science, Fethiye/Mugla-TURKEY
*Corresponding author: carslan42@hotmail.com.

Abstract

The egg production and incubation traits of native Turkish geese bred in the Kars region were examined in two separate trials. In the first trial, 100 female (70 one-year-old and 30 two-years-old) and 40 (two-years-old) male geese were used. The geese were divided into 20 groups. In each group there were five females and two males. Group feeding was used during the experiment. One- and 2-years-old geese laid 8.10 and 12.25 eggs/year respectively. Egg weight, feed consumption, fertility rate and hatching rate of 1- and 2-year old geese were 128.85 and 148.15 g, 136.38 and 159.83 g/day, 42.54 and 47.25% and 9.38 and 29.73% respectively. In the second trial, 827 goose eggs were collected from 29 different geese breeders in the Kars region. The same traits as in the first trial were also evaluated in these eggs. Egg weight, fertility rate and hatching rate were 144.20 g, 60.47% and 22.20% respectively.

Key Words: Goose, feed consumption, egg production, hatching properties

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Feeding the Transition Dairy Cow I. Physiologic, Hormonal, Metabolic and Immunogical Changes and Nutrient Requirement of Dairy Cow During This Period

Cavit ARSLAN[1*], Tuncay TUFAN[2]

[1]Selcuk Univ., Faculty of Vet. Medicine, Animal Nutrition and Nutritional Diseases Dept., Konya- TURKEY
[2]Siirt Univ., Faculty of Vet. Medicine, Dept. of Animal Nutrition and Nutritional Diseases, Siirt-TURKEY
*Corresponding author: carslan42@hotmail.com.

Abstract

Transition period is defined as the interval in-between the three weeks period before- and the three weeks period after the calving in dairy cows. Transition period is accepted the most critical feeding period within the dairy cows feeding period. During this period tremendous change occurs in the organism of dairy cows. During the transitional period changes on the hormonal mechanism, glucose metabolism, lipid metabolism, calcium metabolism, and also in the changes in rumen and mammary glands, as well as fundamental changes in the immune system are significantly affect the health status and productivity of the animal. There have also significant changes energy and nutrient requirements of dairy cows such as dry matter, protein and vitamins during this period. Physiological and ration changes during the transition period is closely related to metabolic disease in dairy cows. Knowing changes in the metabolism at this period and applying feeding strategies to dairy cows accordingly their nutrient requirements is very essential for either alleviating or diminishing the metabolic diseases, and also improving milk yield and fertility, and for profitable breeding. In this study, detailed information is given about these changes.

Key Words: Dairy cow, Transition period, Metabolic changes, Nutrient requirement

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Feeding the Transition Dairy Cow
II. Metabolic Disorders Seen in This Period and Prevention Through Feeding

Cavit ARSLAN[1*], Tuncay TUFAN[2]

[1]Selcuk Univ., Faculty of Vet. Medicine, Animal Nutrition and Nutritional Diseases Dept., Konya- TURKEY
[2]Siirt Univ., Faculty of Vet. Medicine, Dept. of Animal Nutrition and Nutritional Diseases, Siirt-TURKEY
*Corresponding author: carslan42@hotmail.com.

Abstract

The transition period for dairy cows refers to the time from 3 weeks before calving to 3 weeks after calving. In this period, dairy cows impose dramatic increases in the energy and nutrient requirements. However, due to the decrease in feed intake in this period cannot satisfy these demands, and negative energy and nutrient balance may be occur. Depending on these situations, a lot of metabolic disorders and infectious diseases can be seen during this period. Major metabolic and infectious diseases such as fatty liver, ketosis, hypocalcaemia, udder edema, retention sekundinarum, metritis, displacement of abomasums, ruminal acidosis and laminitis in the dairy cows during the transition period that significantly affects the yield and the profitability of a cow enterprise. There is a close relationship between these metabolic diseases and nutrition. A good nutrition program to be implemented during the transition period will contribute to reducing the incidence or severity of diseases at birth and later, providing more milk during the lactation period, ensuring optimum reproductive efficiency and increasing profitability. This review gives detail information on the diseases seen commonly at this period and on the prevention of these disorders through feeding.

Key Words: Dairy cow, Transition period, Metabolic disorders

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Study on the Usability of Entomopathogenic Nematodes in Combating of the Great Wax Mouths (*Galleria mallonella*)

Semih SELOVA[1*]

[1]Çanakkale Onsekiz Mart University-TURKEY
*Corresponding author: semihselova@gmail.com

Abstract

Galleria mellonella is an economical pest of honey bees (*Apis mellifera* L.) and has spread throughout all areas of beekeeping, especially in low-altitude, temperate climates. In hot and temperate regions, it is important to protect the waxed honeycomb and the wax from the strong candle. The beeswax can cause significant damage to the honeycomb stored in the dark, hot, and inadequate environment, causing serious economic losses in beekeeping sector.

This study investigated the effect of some entomopathogenic nematodes used in biological struggle in plant production on large candle relief. *Steinernema affine*, *Steinernema carpocapsae*, *Steinernema feltiae* and *Heterorhabditis bacteriophora* nematode were used.

The study investigated the effect of four different species of entomopathogenic nematodes on the strength of the large wax and the effects of nematodes on honeycomb storage and colony fighting with Galleria mallonella in beekeeping by determining the effects of off spring development and adult starvation in honey bees.

In the storage experiments, *Steinernema affinities* were 40% for *Steinernema carpocapsae*, 20% for *Steinernema feltiae*, and 80% for *Heterorhabditis bacteriophora*.

With these results, it was concluded that nematodes were effective in honeycombs applied with *Steinernema affine* under storage conditions, but due to the results of adult bees and larvae, the study should be repeated in more detail.

Key Words: Beeswax, *galleria mallonella*, nematodes, honeybee

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of the Body Measurements of Purebred and Crossbred Kids Fattening in Different Systems

Hacer TÜFEKCİ[1*], Mustafa OLFAZ[2]

[1]Bozok University Faculty of Agriculture Department of Zootechnics, Yozgat-TURKEY
[2]Ondokuz Mayıs University, Faculty of Agriculture, Department of Animal Science, Samsun-TURKEY
*Corresponding author: hacer.tufekci@bozok.edu.tr

Abstract

In this study was aimed to crossbred male kids of the Hair goat and Saanen x Hair kids (G1) compare their body size intensive, semi-intensive and extensive conditions. In the research, 30 Hair goat and 30 Saanen x Hair goat (G1) crossbred single male kids was used. This situation is thought to be caused by more growth of environment and width measurements in Hair goat kids in the later stages of fattening according to the Saanen x Hair goats (G1) crossbred. In study in terms of body length during whole fattening, in terms of the height at the withers data obtained from the 60th and 90th day was found statistically significant. At the end of the fattening in semi-intensive fattening group of Saanen x Hair goat (G1) crossbred it was observed to have higher body length and height at the withers value of crossbred kids. When chest width measurements between paddles in kids were examined, in all periods seems to be an increase in Hair goat kids than the Saanen x Hair goat (G1) crossbred kids. At the end of fattening in terms of height rump Hair goats has shown higher values than Saanen x Hair goat (G1) crossbred kids but the highest values of the semi-intensive group has shown. As a result, semi-intensive feeding group of kids of body size was higher than intensive and extensive fattening group kids, in terms of length and height measurements Saanen x Hair goat (G1) crossbred kids in terms of width and environmental measures has shown higher values than Hair goat kids.

Key Words: Hair Goat, Saanen x Hair Goat (G1), Body Measurement, Fattening

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Monitoring of Some Breeding Performances of (*Coturnix coturnix japonica*) Grown in Different Entrepreneurs of Turkey

Mesut KARAMAN[1*], Hasan KUŞCU[1]

[1]University of Kahramanmaras Sutcu Imam, Kahramanmaraş-TURKEY
*Corresponding author: karaman@ksu.edu.tr

Abstract

Breeding and commercially farming of Japanese quail have been taken great attention during the last few decades in Turkey due to their short generation intervals and market age, relatively higher growth rate and feed conversion ratio, and resistance to several avian diseases. The aim of this study was to explore the basic characteristics of Japanese quail grown in various entrepreneurs from the points of fertility rate, hatchability and live body weight at the end of fifth week. For this aim, eggs obtained from 13 different entrepreneurs (designated as A to N) located in various regions of Turkey, were hatched and the chicks were experimented for five weeks. The fertility rate of the first parent flock consisted of thirteen groups (13 entrepreneurs) were found as follow; A %92, B%90, C %94, D %92, E %93, F %88, G %91, H %85, I %93, K %92, L %93, M %92, N %91 whilst the hatchability figures for the same animal groups were observed as; A %75, B%50, C %71, D %65, E %48, F %36, G %62, H %20, I %83, K %65, L %85, M %65, N %75. Furthermore the average live body weight of these birds were also investigated at the end of fifth week for both female and male quails. The average of live body weights of the female quails were found to be remarkably higher compare to the male quails for all groups and these data were recorded as follow for female and male birds respectively for each group; A: 172.13 g – 157.37 g, B: 185.24 g – 155.58 g, C: 160.29 g – 147.20 g, D: 171.87 g – 169.2 g, E: 173.63 g – 172.74 g, F: 178.50 g – 161.12 g, G: 167.92 g – 160.76 g, H: 254.84 g – 232.77 g, I: 175.21 g – 162.41 g, K: 185.80 g – 169.81 g, L: 193.55 g – 174.80 g, M: 174.68 g – 153.15 g, N: 158.16 g – 154.98 g. All these results are discussed in the context of both variability of the reproduction characteristics and live body weight of the birds among entrepreneurs.

Key Words: Japanese quail, hatchability, live body weight

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Using of Some Medical Plants in Fighting Against Varroa and Usage Methods

Sadık ÇIVRACI[1*], Yaşar ERDOĞAN[2], Sakine YALÇIN[3], Yahya Yasin YILMAZ[2]

[1]Bayburt Univ., Demirözü Vocational School, Department of Vet. Medicine, Demirözü-Bayburt-TURKEY
[2]Bayburt Univ., Demirözü Voc. School, Department of Vet. Medicine, 69300 Demirözü-Bayburt-TURKEY
[3]Ankara Univ., Faculty of Vet. Medicine, Dept. of Animal Nutrition and Nutritional Diseases, Ankara-TURKEY
*Corresponding author: sadikcivraci@bayburt.edu.tr

Abstract

Honey bees (*Apis mellifera* L.) are a very important insect species with their pharmacological and nutritive products such as honey, royal jelly, propolis and bee venom, as well as they are important in protection of plant flora by providing pollination, contribution of agricultural production and ecological balance. Varroa is known as the most important parasite of honey bees affecting its productivity and health negatively in the world. Varroa that is a very dangerous external parasite, lives on the larvae, pupae and adults of honey bee. Varroa is fed by sucking the hemolymph (blood liquid) of honey bees and it causes the hives to become dysfunctional. Genetic, chemical, mechanical and biological fighting methods have been developed to remove adverse effects of varroa. However chemical fighting methods bring some risks. As a result of continuous and unconscious use of chemical substances, the effect of varroa becomes resistant to these substances and the activity of the used substance is also weakening. Besides, chemicals threaten human health by creating residues in bee products. This study will focus on the use of some medical plants as an alternative fighting method againts varroa.

Key Words: honey bees, varroa, medical plants, fighting methods against varroa

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Egg Yield and Breeding Potential of Quails (*Coturnix coturnix japonica*) Grown in Various Regions of Turkey

Mesut KARAMAN[1*], Hasan KUŞCU[1]

[1]University of Kahramanmaras Sutcu Imam, Kahramanmaraş-TURKEY
*Corresponding author: karaman@ksu.edu.tr

Abstract

Japanese quail farming is gaining attention for their high growth rate, early sexual maturity and market age, short generation intervals and resistance to several avian diseases particularly for the entrepreneurs of countries such as Japan, India and some parts of Europe.
This study basically aimed to determine the egg yield of Japanese quail (*Coturnix coturnix japonica*) grown in 13 different entrepreneurs (designated as A to N) located in various regions of Turkey. Moreover their breeding potential according to egg yield at the end of 19th week was evaluated.
The isocaloric and isonitrogenous diets were formulated to meet the nutrient requirements of the birds. Animal trials were carried out according to the basic guidelines of "Animals Welfare Act" (Scientific Procedures) approved by the Kahramanmaraş Sütçü İmam University Local Animal Ethics Committee.
Egg yield ratios, for each group of quiles, were recorded as follow for the 13 weeks of experimental period (starting at the age of 6th week and ending at the end of 19th week): Entrepreneurs (from A to N) A: 85.7,%; B: 82.0%, C: 89.3%, D: 85.2%, E: 91.9%, F: 89.7%, G: 92.3%, H: 90.5%, I: 86.2%, K: 92.1%, L: 88.8%, M: 84.3%, N: 85.2%. The egg weights of the studied quiles at the end of 19th week for all 13 groups (A to N) were recorded as A: 11.3 g, B: 11.6 g, C: 11.8 g, D: 10.8 g, E:11.5 g, F:11.9 g, G:11.2 g, H:13.0 g, I:11.9 g, K:11.0 g, L:12.3 g, M:10.9 g, N:10.9 g respectively. The quiles obtained from the entrepreneurs L seems to be the best groups from point of the breeding potential for egg yield and egg weight.

Key Words: Japanese quail, egg yield, breeding potential

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Beta-Carotene on Poultry Nutrition

Süleyman ÇALIŞLAR[1*]

[1]Kahramanmaras Sutcu Imam University, Agriculture Faculty, Department of Animal Science, TURKEY
*Corresponding author: scalislar@ksu.edu.tr

Abstract

Beta carotene (BC), the primary source of vitamin A in poultry rations, is one of the most important carotenoids. Under the influence of enzymes, β-carotene is converted to vitamin A. The BC molecule is a double retinal structure and theoretically gives 2 molecules retinal. Its biological activity is only half of retinal. Conversion of carotenoids to retinol is rarely 100%. Thus the vitamins of various foods are expressed in terms of the potential retinol equivalence (RE): 1RE; 1 mg of retinol, 6 mg of BC and 12 mg of other pro-vitamin A carotenoids. Vitamin activity to 1 mg of β-carotene in poultry is 1.667 IU (International Unit).

BC is absorbed from the duodenum and if there is oil in the intestinal tract, it is absorbed faster. Oxidatively converting BC into vitamin A is mainly carried out in the intestinal brush border membrane, organs such as the liver, kidney and lungs. BC egg yolk is transported to and stored in immune organs and similar tissues. The BC content of the egg of the poultry varies. BC contents of hen eggs are low, while BC contents of eggs of wild birds are between 25-30%. Despite depletion of BC in the liver it's transfer to the egg continues.

Since poultry can not synthesize β-carotene, it must be taken from outside. Products such as yellow corn, marigold and alfalfa are very rich sources of β-carotene. BC is abundant in egg yolks, milk, butter and liver.

BC is effective in the pigmentation of skin and egg yolks of hens. Due to BC's antioxidant properties prevents deterioration of egg and meat. It has also been shown that BC has important effects on the immunity and endocrine system. BC, strengthens see function, reduces the risk of cardiovascular disease, prevents inflammation and some types of cancer. Studies have shown that BC enhances the immune system by raising antibody response in poultries and prevents acute respiratory tract infections.

In this review article, the introduction of BC, its functions, the negative and positive effects on poultry nutrition were investigated.

Key Words: β-carotene, carotenoid, poultry, pigmentation, antioxidant, immunity

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Physiologic and Metabolic Effects of Beta Glucan on Poultry Nutrition

Süleyman ÇALIŞLAR[1*], Beyhan YETER[1]

[1]Kahramanmaras Sutcu Imam University, Agriculture Faculty, Department of Animal Science-TURKEY
*Corresponding author: scalislar@ksu.edu.tr

Abstract

Carbohydrates are the leading source of energy for poultry. One of the non-starch polysaccharides (NOP) in the carbohydrate group is β-glucan. The major component of the cell wall is found in the structure of beta-glucans, yeast, fungi, algae and cereals (wheat, barley, oats and rye).
B-glucan can not be digested in poultry that can not produce the beta glucanase enzyme. therefore, this enzyme has to be added to the poultry feeds. Non-digestible beta-glucan adversely affects the performance of poultry by exhibiting anti-nutritional effects. β-glucans also interfere with digestion and absorption of nutrients by affecting the intestinal viscosity of poultry. The β-glucans are usually found in insoluble form in natural structures. Water-insoluble β-glucans accelerate the passage of feed through the digestive tract and reduce utilization of nutrients. Water-soluble β-glucans cause stickiness for high water retention. Stickiness slows the mixing and progress of the feeds as it increases viscosity in the intestine. Water-soluble glucans stimulate microbial activity, promoting E. coli and Clostridium spp., but Lactobacillus are decreasing.
In addition to anti-nutritive effects of β-glucans, there are also positive effects such as enhancing the immune system of poultry, lowering cholesterol, regulating intestinal microflora, improving general performance, reducing mortality and providing resistance to diseases. In the poultry sector where antibiotic restriction is widespread, β-glucans reduce the severity of enteric pathogenic infections, increase phagocytosis after bacterial infection, and improve growth performance reflect their useful properties. Therefore, focusing on antimicrobial effects of β-glucan to enhance its immunity and proliferative properties is thought to provide significant contributions to poultry nutrition.
In this review study, traits of β-glucan, it's immunologic, physiological and metabolic affects in poultry nutrition were examined.

Key Words: β-glucan, poultry, anti-nutritional, polysaccharide, prebiotic

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Improvement of Awassi Sheep under Farmer Conditions in Gaziantep Province

Mahmut KESKİN[1*], Sabri GÜL[1], Sedat BEHREM[2], İrfan DAŞKIRAN[2], Zuhal GÜNDÜZ[1], Osman BİÇER[1]

[1]Mustafa Kemal University, Agricultural Faculty, Department of Animal Science, Antakya, Hatay-TURKEY
[2]General Directorate of Agricult. Res. and Policies, Ministry of Food, Agr. and Livestock, Ankara-TURKEY
*Corresponding author: mkeskinmku@gmail.com

Abstract

Awassi sheep known dairy sheep breed are raised under extensive conditions in the Southeast Anatolian region of Turkey. The project aims improvement of Awassi Sheep is supported by the Ministry of Food, Agriculture and Livestock in cooperation with Mustafa Kemal University and Gaziantep Sheep and Goat Breeders' Associations. The materials of the project are 6000 head of ewes, 300 heads of rams and their offsprings. The animals are recorded for the improvement of milk yield and some reproductive traits by using selection. For this purpose, we have developed an index that evaluates various properties such as milk yield, birth type, birth weight and weaning weight. In this framework, the project started with birth weight and weaning weight as 3.86 ± 0.12 kg and 18.5 ± 0.06 kg, respectively in 2013. These values were calculated as 4.1 ± 0.92 kg and 19.3 ± 3.83 kg in 2017, in the same order. Also, the survival rates were determined as 89.3 % in 2013 and as 96.4 % in 2017. We have been encountered some problems in determining milk yield of animals. The ewes give birth almost throughout the year. The breeders do not milk their sheep since the milk can not be sold at the price they deserve. They prefer the lambs to suck this milk. An important success of the project so far is that the farmers have to be accustomed to keeping records. Despite all these difficulties, the project continues with success.

Key Words: Awassi, breeding project

Agricultural Machinery Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Projection of Agricultural Tools and Machinery Usage in Agriculture in Adıyaman

Yusuf BAŞOĞUL[1*], Mehmet Fırat BARAN[2], Ali İhsan KAYA[2], Kaan Emre ENGİN[3], Fuat LÜLE[2], Osman GÖKDOGAN[4]

[1]Adıyaman University, Engineering, Faculty, Machine Engineering Department, Adıyaman-TURKEY
[2]Adıyaman University, Technology Faculty, Energy Systems Engineering Department, Adıyaman-TURKEY
[3]Adıyaman University, Technology Faculty, automotive Engineering Department, Adıyaman-TURKEY
[4]Nevşehir Hacı Bektaş Veli Univ., Faculty of Eng.-Arch., Biosystem Enginering Dept., Nevşehir-TURKEY
*Corresponding author: yusufbasoğul@hotmail.com

Abstract

In this study, it was aimed to determine the projection of the technology usage in agriculture by using the technology equipment data between 2007-2016 of Adıyaman province. Projection coefficient was calculated based on past ten years production and usage amounts of the technology equipment in agriculture. In line with the increase or decrease of the projection coefficient, the projections of future ten years belonging to the technology equipment usage in agriculture have been determined in Adıyaman. Within this scope, the usage projection of 38 agricultural equipments (including soil cultivation equipment and machines, sowing-planting and fertilizing machines, harvest-threshing and baler machines, tractor and trailer, spraying equipment and machinery, silage and forage harvester(haylage) widely used in Adıyaman were taken into consideration. It is concluded that, in Adıyaman, the projections for 32 technology instruments and machines usage in agriculture will increase up to 2026 in the direction of obtaining positive predictive coefficients. Besides, it is determined that projection coefficient for 6 tools and machines will be negative and accordingly technological equipment usage will decrease in these tools and machines.

Key Words: Adıyaman, agricultural machinery, mechanization, projection, tools

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Sphericity Measurement Techniques for Solid Materials

Mustafa BAYRAM[1*], Özge ŞAHİN[1], Onur ARSLAN[2]

[1]Faculty of Engineering, Dept. of Food Engineering, Univ. of Gaziantep, Gaziantep-TURKEY
[2]Faculty of Eng. and Architecture, Dept. of Mech. Engineering, Eskisehir Osmangazi Univ., Eskişehir-TURKEY
*Corresponding author: mbayram@gantep.edu.tr

Abstract

Sphericity or shape factors are most important shape parameter for non-spherical objects are used in solid-fluid mechanics, fluidized bed combustion, packed bed operations, immersed body in fluid, silo handling operations, geology, crystal geometry and physical analysis of solid particles where it is significant to classify particles according to their shape.
Sphericity (ϕs) is a ratio and it is a dimensionless number. Sphericity is very important parameter especially for 3-Dimensional objects. Also, it is widely used in food operations during calculation, designs and analysis. In the literature, the different sphericity determining techniques and methods are available. Some of them are widely used in the scientific studies or the design of equipment. But, the experimental procedures or mathematical calculations are very difficult and not practical for these methods. In this study, the sphericity measurement methods available in the literature were analyzed. Their advantages and disadvantages were compared. In additional, application of sphericity value in food operation was presented.

Key Words: Sphericity; unit operation; design; shape factor

Agricultural Structures and Irrigation Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Abiotic Stress Conditions on Plants

Müslüme Sevba ÇOLAK[1*], Sertan AVCI[1], Ahmet ÖZTÜRK[1], EnginYURTSEVEN[1]

[1]Department of Farm Structures and Irrigation, Faculty of Agriculture, University of Ankara
*Corresponding author: smyilmaz@ankara.edu.tr

Abstract

One of the most basic requirements that survivors need to survive is undoubtedly food. In order to meet this need, the importance of cultivation should be given and the conditions that the plant needs in order to be able to produce economically products should be provided. The changes that occur in plants under the influence of biotic and abiotic environmental factors are called stress. Stress affects the lives of plants in the same way as it is in humans, and it can cause the decrease in the amount of the products produced and even cause the life of the plant to be lost. According to Levitt 1980; stress factors are divided into biotic stress factors and abiotic stress factors. Biotic stress factors; pathogens, pests, race with other organisms. Abiotic stress factors are; heat stress (high temperature, low temperature), water stress, salinity stress, radiation stress, chemical stress, light stress, etc. In this study, abiotic stress factors; water, temperature and salinity stresses and plant development and production relations.

Key Words: Abiotic stress, drought, salinity, plant yield

Field Crops Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Siverek in the District is Consumed by the Plants Collected from Nature

Mustafa ASLAN[1*]

[1] Harran University, Faculty of Education, Department of Biology Education, Şanlıurfa-TURKEY
*Corresponding author: mustafaaslan@harran.edu.tr

Abstract

The plants grown in the Siverek district are informed about the traditional consumed plants of the people in Siverek. Many of these plants, which are consumed by the public as food and medicine, are naturally present within the geographical boundaries of the province. It is understood that a large part of the district has a rich fluoride in terms of Karacadağ plants located within the geographical boundaries. As it is in Anatolia in general, a herb is collected from nature and consumed for this purpose. This study was carried out to determine an inventory of plants that were grown in Siverek and its vicinity and which were consumed freshly among the population, and which were consumed for medical purposes. In this study, the plants sold in the daily bazaar markets in Siverek city center were identified, pictures were taken and plant samples were taken. Plants P.H. Davis' scientific name using the flora of Turkey and the East Aegean Islands has been identified by taxonomic diagnosis of these species. As a result of this study, 34 plant taxa belonging to 18 families that are used both as vegatables and as medicine are documented according to latin and usd parts and their uses.

Key Words: Siverek plants, Medicinal plants, Wild-consumed plants

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Different Nitrogen Doses on Seed Yield and Some Agronomic Characteristics of Soybean Grown as a Double Crop

Ayhan KILINÇ[1*], Halis ARIOĞLU[2]

[1]Cukurova University, Institute of Science and Technology, Department of Field Crops - Adana/TURKEY
[2]Cukurova University, Faculty of Agriculture, Department of Field Crops - Adana/TURKEY
*Corresponding author: ayhankilinc01@gmail.com

Abstract

This study was conducted at the Experimental Area of Cukurova University in 2016 as a double crop growing season. The objective of this study was to determine the effect of different nitrogen doses on yield and some agronomic characteristics of soybean grown as a double crop growing season in Cukurova region. The experimental design was a Randomized Complete Block with three replications. The Atakişi soybean variety (belonging to maturity groups III) was used as a plant material in this research. Nine different nitrogen doses such as 0, 4, 6, 8, 10, 12, 14, 16 and 18 kg/decar were applied in this study.
The characteristics such as plant height, pod and branch number per plant, the lowest pod height, 1000-seed weight, protein and oil percentage, seed and oil yield values of soybean variety were investigated. The nitrogen application was effected on all of the investigated characteristics except 1000 seed weight and branch number when the nitrogen doses were increased in this research. The highest seed yield (374.6 kg /decar) was obtained from 18 kg/decar nitrogen applied plots and the lowest (305.9 kg/decar) from control (0 kg/decar) plots.

Key Words: Soybean, nitrogen, seed yield, oil and protein content

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Study on Plant Characterization of Some Annual Medic Species Grown Naturally in Middle Black Sea Region

Serdal UĞUR[1], Duygu ALGAN[2*], İbrahim AYDIN[2], Ferat UZUN[2]

[1]District Directorate of Agriculture, Buldan/Denizli-TURKEY
[2]Department of Field Crops, Faculty of Agriculture, University of Ondokuz Mayis, Kurupelit/Samsun-TURKEY
*Corresponding author: duygu.algan@omu.edu.tr

Abstract

This study was carried out to determine on plant characterization of medic species such as toothed medic (*Medicago hispida* Gaertn.), spotted medic (*Medicago arabica* L.) and black medic (*Medicago lupulina* L.) grown naturally in the Middle Black Sea Region. Samsun (Center, Bafra, Vezirköprü, Terme and Ladik), Amasya (Center, Suluova, Göynücek, Taşova and Hamamözü), Tokat (Center, Artova, Niksar, Zile and Reşadiye) and Ordu (Ünye, Gülyalı, Mesudiye, Akkuş and Perşembe) from two places per county. The seeds collected from each locations were sown in nursery beds, and then grown arranging in a space of 0.8 x 0.8 m in an experimental area. In this study, characterization of each plant species such as growth (erect, semi erect and prostrate), branching patterns (sparse and dense) and hairiness on leaf face (nil, sparse and dense). *M. hispida* and *M. arabica* species had generally 3 growth forms. The *M. lupulina* species was found to be semi erect and prostrate. The *M. hispida* and *M. arabica* species had a dense branching, whereas *M. lupulina* species had dense and sparse branching. *M. lupulina* and *M. hispida* species were generally found (except for a few locations) be nil on leaf face, while all of the *M. arabica* species taken from all locations had nil on leaf face. According to these results, *M. hispida* and *M. arabica* species can be evaluated both by grazing and by harvesting. Thus, it can be said that there are hopeful species in terms of the development of these two new varieties.

Key Words: characterization, forage plant, grassland

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Morpho-Agronomic Traits of Some Annual Medic Species Grown in Natural Flora of the Middle Black Sea Region

Serdal UĞUR[1], Duygu ALGAN[2*], İbrahim AYDIN[2], Ferat UZUN[2]

[1]District Directorate of Agriculture, Buldan/Denizli-TURKEY
[2]Department of Field Crops, Faculty of Agriculture, University of Ondokuz Mayis, Kurupelit/Samsun-TURKEY
*Corresponding author: duygu.algan@omu.edu.tr

Abstract

This study was carried out to determine morpho-agronomic traits of medic species such as toothed medic (*Medicago hispida* Gaertn.), spotted medic (*Medicago arabica* L.) and black medic (*Medicago lupulina* L.) in natural flora of the Middle Black Sea Region. In this purpose, the seed of each species were collected from two places per county of provinces such as Samsun (Center, Bafra, Vezirköprü, Terme and Ladik), Amasya (Center, Suluova, Göynücek, Taşova and Hamamözü), Tokat (Center, Artova, Niksar, Zile and Reşadiye) and Ordu (Ünye, Gülyalı, Mesudiye, Akkuş and Perşembe). The seeds collected were sown in nursery beds and then grown in a space of 0.8 x 0.8 m in an experimental area. The studied traits of each plant species were plant height, real plant height and width and length of leaf. The plant height, real plant height, width and length of leaf *M. hispida* were determined as 37.67-94.33, 4.6-29.6, 0.98-2.32 and 0.68-2.16 cm, respectively, whereas that of *M. arabica* were found as 25.00-81.67, 5.6-38.8, 1.38-2.82 and 1.34-3.28 cm, respectively. The corresponding values in *M. lupulina* were 20.33-66.33, 3.2-18.2, 0.52-2.28 and 0.38-1.34 cm, respectively. These results indicated that inter-species differences indicated that there are genetic variations for these species in Middle Black-Sea Region.

Key Words: characterization, improvement, location, lucerne, yield

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Phenological Characteristics of Some Annual Medic Species Grown Naturally in Middle Black Sea Region

Serdal UĞUR[1], Duygu ALGAN[2*], İbrahim AYDIN[2], Ferat UZUN[2]

[1]District Directorate of Agriculture, Buldan/ Denizli-TURKEY
[2]Department of Field Crops, Faculty of Agriculture, Univ. of Ondokuz Mayis, Kurupelit, Samsun-TURKEY
[*]Corresponding author: duygu.algan@omu.edu.tr

Abstract

This study was carried out to determine phenological of medic species such as toothed medic (*Medicago hispida* Gaertn.), spotted medic (*Medicago arabica* L.) and black medic (*Medicago lupulina* L.), which are grown naturally in the Middle Black Sea Region. The seeds of each species collected from two places per county of provinces such as Samsun (Center, Bafra, Vezirköprü, Terme and Ladik), Amasya (Center, Suluova, Göynücek, Taşova and Hamamözü), Tokat (Center, Artova, Niksar, Zile and Reşadiye) and Ordu (Ünye, Gülyalı, Mesudiye, Akkuş and Perşembe) were sown in nursery beds, and then grown in a space of 0.8 x 0.8 m in an experimental area. In this study, days from seedling emergence to *first flowering and* fruit forming, seed count in fruit and 1000-seed weight as the phenological traits were evaluated. These values in *M. hispida* varied between 160-176 days, 189-197 days, 17-52 seeds and 1.12-4.21 g, whereas that of *M. arabica* varied between 160-176 days, 185-209 days, 21-65 seeds and 1.68-3.58 g, respectively. The values of *M. lupulina* ranged from 160 to 176 days, 189 to 209 days, each fruit had only one seed and 10 plants had 10 seeds and ranged from 1.06 to 8.46 g. According to the results of the research it can be sad that these species have genotypes which can be used in range improvement due to their potential of producing high quality hay.

Key Words: medic, improvement, seed yield

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Some Yield and Morphological Properties of F4-F5 and F6 Generations Breeding Chickpea (*Cicer arietinum* L.) Materials with Local in Konya Ecological Conditions

Hakan BAYRAK[1*], Ramazan KELEŞ[1]

[1]Bahri Dağdaş International Agricultural Research Institute, Konya-TURKEY
*Corresponding author: khanbayrak@gmail.com.tr

Abstract

In this study, we aimed to determine some yıeld and morphological characterization of different chickpea lines in Konya ecological conditions and these lines which will be used in later stages of breeding for this region.
In this research, 40 chickpea lines from national chickpea breeding programs and 5 chickpea varieties were used. Trials were conducted in Bahri Dağdaş UTAEM experiment fields as a randomized complete block design with 1 replications in 2017 growing season. Emergence rate, flowering period, vegetation period, plant height and number of pod per plant observations data were taken from the trials and single plant selections were made from the lines which showed superiority in terms of these features. According to field research results, we determine that emergence rate % 89-96 the number of flowering days was 39 - 52 days, the number of vegetation days was 96-118 days, the plant height was 23.5-46.7 cm, and the number of pod per plant was 48-96.

Key Words: Chickpea lines, breeding, yileld, morphologıcal properties

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Retrotransposon-Based Molecular Markers for Genetic Diversity

Serap DEMİREL[1*], Fatih DEMİREL[2], Barış EREN[2]

[1]Yüzüncü Yıl University, Science Faculty, Molecular Biology and Genetic Department, Van/TURKEY
[2]Iğdır University, Agriculture Faculty, Field Crop Department, Iğdır/TURKEY
*Corresponding author: serap_comart@hotmail.com

Abstract

Molecular markers are important for studies such as genetic diversity, gene identification, genetic characterization, phylogenetic analysis, fingerprinting, particularly detection of genes responsible for the desired traits in MAS-based plant breeding. Retrotransposons (long terminal repeat (LTR) retro-transposons and non-LTR-retro-transposons) are mobile genetic elements found in commonly eukaryotes. Retrotransposon-based markers are useful to investigate genetic diversity. They are unique to detect polymorphisms in genome, since retrotransposons are plentiful and they have copy and past lifestyle in plant genomes. They have a high copy number due to their tranposition movement. The transposition of their create various chromosomal mutations, allelic diversity, lagre insertions in genome. Thus, different marker systems from retrotransposons were developed to investigate polymorphisms in plant genomes. In this study, we summarized to various retrotransposon-based marker systems, which is retrotransposon-based insertion polymorphism (RBIP), inter retropotransposon amplified polymorphism (IRAP), sequence-specific amplified polymorphism (SSAP), inter-primer binding sequence (IPBS), retrotransposon-microsatellite amplified polymorphism (REMAP) and we discussed their advantage and disadvantage in practise for plant genetic diversity studies.

Key Words: Molecular markers, retrotransposon, genetic diversity, plant breeding

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Relations Between Forage Yield and (Normalized Difference Vegetation Index) NDVI Value in Mixtures of Barley with Hungarian Vetch

Ahmet GÜNEŞ[1*], Şeref AKSOYAK[1], Hasan KOÇ[1], Şaban IŞIK[1]

[1]Bahri Dağdaş International Agricultural Research Institute, Konya-TURKEY
*Corresponding author: agunes977@gmail.com

Abstract

This research carried out in Konya ecological conditions to determine the relationship between forage yield and normalized difference vegetation index on of different sowing time and sowing density of Hungarian vetch + barley mixtures. Trial conducted by the split plot in randomized complete block desing with three replications at Bahri Dagdas International Agricultural Research Institute's research field in October 2014- May 2015. In this study, Tarm beyazı-98 Hungarian vetch cultivar and Larende barley cultivar mixtures were used as the material, different sowing rates (% 100 Hungarian vetch, % 75 Hungarian vetch +25 barley, % 50 Hungarian vetch +50 barley, % 25 Hungarian vetch +75 barley ve % 100 barley) were applied. Trial was conducted on 21 May 2015, the NDVI measurements. As a result, while the highest forage yields obtained from % 100 barley parcels with 3538.3 kgda-1, lowest forage yields were taken for 1639.9 kgda-1 in % 100 Hungarian vetch parcels. In this work, while the highest NDVI values recorded at % 100 barley parcels (0.726), lowest values from % 100 Hungarian vetch parcels (0.64). The relation between yield and NDVI value was determined statistically significant at positive direction.

Key Words: Hungrian vetch+barley mixture, forage yield, NDVI

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Effective HPLC Method for Phenolic Compounds of *Ocimum basilicum* L.

Emel DIRAZ YILDIRIM[1*], Şengül KARAMAN[1], Meral KARAÇOCUK[1], Nilgün BİLGİNER[1]

[1]Kahramanmaraş Sütçü İmam University, Science and Letter Faculty, Biology Department-TURKEY
*Corresponding author: emeldiraz@ksu.edu.tr

Abstract

Ocimum basilicum L. (Lamiaceae) is an annual herb, commonly known as sweet basil, has been used as a traditional medicinal plant for the treatment of headaches, coughs, diarrhea, constipation, warts, worms, kidney malfunctions. Plant leaves and flowers have been extensively utilized in food as a flavoring agent, as insecticidal and in perfumery. Basil produces a range of polyphenolic compounds, including rosmarinic acid. Rosmarinic acid is a cinnamic acid derivative with potent antioxidant activity and known antiviral, antibacterial, and anti-inflammatory properties. In this study, phenolic compounds in the extracts of basil leaves were determined by HPLC-UV. For compose the method different applications were used. 330 nm wavelength is optimum for rosmarinic acid and other phenolics as cafeic and chicoric acid. Optimum mobil phase investigated and ddH2O with 0.05% formic acid (bottle A), ACN (bottle B) were determined. Flow percentage of bottles and flow rate were tried numerously. Effective method is determined as 1.2 ml/min flow rate, 75% bottle A, 25% bottle B mobile phase and 40 C◦ column heat with 13 mins run time. In this method chromatogram was obtained clearly and peaks were shown spiky. This method is suitable for determination of phenolics in basil leaves.

Key Words: *Ocimum basilicum*; Phenolic compound; Rosmarinic acid; HPLC

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Evaluation of *Isatis constricta* Davis (Brassicaceae) as an Indigo Source

Şengül KARAMAN[1*], Emel DIRAZ[1], Nilgün ÇALICI[1]

[1]Kahramanmaraş Sütçü İmam Univ. Faculty of Science and Letters, Biology Dept.
*Corresponding author: sengulk@ksu.edu.tr

Abstract

The history of indigo as a blue dye in denim dyeing is very old. In Europe *Isatis tinctoria*, in Far East Asia and tropical countries *Indigofera* and *Polygonum* is used as a source of blue dye. The genus Isatis is native to Mediterranean, East and Central Asia. Ninety percent of these species is distributed in Iran-Touran phytogeographic region which includes the Eastern and Southern East regions of Turkey. Today, the genus *Isatis* is represented by 40 taxa of which 24 are endemic widely found in Turkey under natural conditions. *Isatis constricta* which is endemic to our country and located in endangered (EN) category in IUCN red list. This situation reveals the need for the conservation and more investigation of the species. For this purpose *Isatis constricta* collected from Elazığ region were grown under Islahiye conditions and indican yield were analyzed by using HPLC. Growing conditions and indigo yield of *I. constricta* plants under Mediterranean conditions were evaluated.

Key Words: *Isatis constricta*; indigo; blue dye

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Medicago truncatula as Model Plant of Legumes

Barış EREN[1*], Fatih DEMİREL[1], Serap DEMİREL[2], Bilal KESKİN[1]

[1]Iğdır University, Faculty of Agriculture, Department of Field Crops, 76000 IGDIR
[2]Yüzüncü Yıl University, Science Faculty, Molecular Biology and Genetic Department, Van/TURKEY
*Corresponding author: bariseren86@gmail.com

Abstract

In recent years, biotechnological and genomic developments have allowed gene transfer among organisms. Model organisms are commonly used in experiments to understand biological events. Legumes, one of the most important family members among plants, were searched for a species that could be a model for nitrogen binding and other genetic researches. *M. truncatula* contains important features such as small-diploid genome, self-productive nature, efficient seed production and rapid generation. In addition to determining the biological properties of *M. truncatula*, researchers have developed tools and methods for molecular and genetic analysis in these legumen species. Two ecotypes of *M. truncatula* were transformed by *Agrobacterium tumefaciens* and were regenerated into fertile plants. The researchers have developed a set of tools for map-based cloning, including characterization of polymorphic ecotypes, production of a genetic map, and BAC library structure. In one study, excessive amounts of structural proteins in the nodule cells of *M. truncatula* were detected. The Medicago Hapmap project includes that sequencing with Next Generetion technology of 384 Medicago species from the same progeny and using of pure lines of these individuals for different studies. A large number of genes belonging to Rhizobium-legumen symbiosis were isolated and 8 linkage groups covering 761 RAPD markers were found. 900 EST starter sets were created by researchers at Standford University financed by Center Nationale de Sequencage, Samuel Roberts Noble and the National Science Foundation. These studies will provide to understanding of the different aspects biologyof legumes.

Key Words: *Medicago truncatula*, gene transfering, biotechnology, genome

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparative Bioinformatic Analysis of Dehydrin Proteins in Alfalfa

Serap DEMİREL[1*], Fatih DEMİREL[2], Barış EREN[2]

[1]Yüzüncü Yıl University, Science Faculty, Molecular Biology and Genetic Department, Van/TURKEY
[2]Iğdır University, Agriculture Faculty, Field Crop Department, Iğdır/TURKEY
*Corresponding author: serap_comart@hotmail.com

Abstract

Abiotic stresses such as cold, drought, and high salinity cause changes in base of morphological, biochemical, and molecular. Dehydrin proteins which is deal with cold and drought stress are group 2 LEA proteins and these proteins contribute to regulate cellular homeostasis affected by abiotic stresses. They are induced in vegetative tissues during abiotic stress such as salinity, dehydration, cold and freezing. Dehydrin proteins collected to higher levels in stems and roots in cold, but to higher levels in stem drought stress. Dehydrins include conserved sequences called as K, S and Y segments. We obtained amino acid sequence of dehydrin proteins in alfalfa with BLASTP database. Pylogenetic tree was created using MacVector 14.0 software with bootstrap values obtained from 1000 replications and using protein sequence in NCBI. Dehydrins protein structures were modelled using PHYRE2 online server. Based on our phylogenetic results, these proteins were divided into two main groups. We obtained consensus amino acid sequence in alfalfa dehydrin proteins. We evaluated similarity relationship among alfalfa in based on dehydrin protein amino acid sequence. We suggest that the phylogeny, domain detection, structural analysis will provide useful information on their functional in different alfalfa species in cope with abiotic stress, particularly dehydration stress.

Key Words: Dehydrin proteins, dehydration, bioinformatic, abiotic strees

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Bioinformatic Evaluation of Chitinase Proteins in Bread Wheat

Fatih DEMİREL[1*], Serap DEMİREL[2], Barış EREN[1]

[1]Iğdır University, Agriculture Faculty, Field Crop Department, Iğdır/TURKEY
[2]Yüzüncü Yıl University, Science Faculty, Molecular Biology and Genetic Department, Van/TURKEY
*Corresponding author: speed-fd@hotmail.com

Abstract

Plants such as humans and animals are exposed to many agent which affected from outside. These agent factors are grouped into two groups; abiotic stress and biotic stress. Plants resist with mechanisms that are pre-existing pathogen or subsequently triggered by the interaction between the pathogen-host to pathogens. Plants can be to suppress or reduce pathogen with pathogenesis-related (PR)-proteins such as β-1,3-glucanases, chitinases, peroxidases, thionins, oxalate oxidase. A search of *Triticum aestivum* chitinase proteins were performed by using the BLASTP in NCBI. Amino acid sequences were aligned using T-COFFEE and Myers-Millers matrix. UPGMA dengrogram was obtained using MacVector 14.0 software with bootstrap analysis. Signature motifs in chitinase amino acid sequences were determined with PROSITE database. Conservation and hydropathy of chitinase protein in bread wheat were evaluated. Result of analysis, we found that is mostly similar to each other of evaluated bread wheat in terms of chitinase proteins. Protein family (Pfam) and protein pattern were determined respectively as Glyco_hydro_19 *Chitinase class I* and *Chitinases family 19 signature 2.* This study can provide a perspective to studies such as genome-wide association and can increase our knowledge about role of chitinase proteins in resistance mechanism against pathogens in plants.

Key Words: Pathogenesis-related (PR)-proteins, chitinase, bread wheat

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Assement of Mitogen Activated Protein Kinases in Oryza sativa

Fatih DEMİREL[1*], Serap DEMİREL[2], Barış EREN[1], Ahmet Metin KUMLAY[1]

[1]Iğdır University, Agriculture Faculty, Field Crop Department, Iğdır/TURKEY
[2]Yüzüncü Yıl University, Science Faculty, Molecular Biology and Genetic Department, Van/TURKEY
*Corresponding author: speed-fd@hotmail.com

Abstract

Plants are exposed to different stress factors throughout their lives. Various stressors including salt, high and low temparature, drought effect to cell in level of physiologic, biochemical and molecular. Signal molecules such as mitogen activated protein kinase (MAPK) have important role in cellular response in order to tolerent to stress. MAPK cascades involve protein phosphorylation events and include are three protein kinases, MAPK (MAPK/MPK), MAPK kinase (MAPKK/MKK), and MAPK kinase kinase (MAPKKK/MAP3K). Proteins annotated in *Oryza sativa* were downloaded from PHYTOZOME. A search of *Oryza sativa* mitogen activated protein kinase proteins were performed by using the BLASTP in NCBI. Amino acid sequences were aligned using T-COFFEE and Myers-Millers matrix. UPGMA dengrogram was obtained using MacVector 14.0 software with bootstrap analysis. MAPK domains in *Oryza sativa* were investigated by using as MAPK domain (PF00069) query in HMMER software and the Pfam protein family database. Result of analysis, we showed that is remove to each other of evaluated *Oryza sativa* in terms of MAPK proteins. Our work attracts attention using of MAPKs in plant breeding for growth tolerant plant to stress.

Key Words: Mitogen activated protein kinase (MAPK), *Oryza sativa*, plant breeding, bioinformatic

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Analysis of GST Protein with Bioinformatic Tools in Barley

Serap DEMİREL[1*], Fatih DEMİREL[2], Barış EREN[2], Ahmet Metin KUMLAY[2]

[1]Yüzüncü Yıl University, Science Faculty, Molecular Biology and Genetic Department, Van/TURKEY
[2]Iğdır University, Agriculture Faculty, Field Crop Department, Iğdır/TURKEY
*Corresponding author: serap_comart@hotmail.com

Abstract

Abiotic and biotic stress factors are vary by global warming and climatic change. Plant growth and development can be adversely affected by various stress factors. This effect can decrease to crop productivity. The glutathione S-transferase (GST) have major roles for response to biotic and abiotic stress. Barley is one of the most important cereals worldwide due to its different uses. Nucleic acid sequences of GST protein associated with *Hordeum vulgare* used in this study were obtained from NCBI and Phytozome databases. Aligment of GST proteins for barley were performed by using the BLASTP. Protein sequences were examined in terms of GST-N (thioredoxin-like) and GST-C (hydrophobic or electrophilic binding) domains using SMART and NCBI database. Protein structures and conserved motifs in barley GST proteins were determined respectively using Expasy and Multiple Expectation Maximization for Motif Elicitation (MEME) database. UPGMA dengrogram was obtained using MacVector 14.0 software with bootstrap analysis. We found that barley is very little similar to each other of in terms of GST proteins. This study will provide a mini overview for bioinformatic analysis of barley GST proteins.

Key Words: Global warming, abiotic and biotic stress, glutathione S-transferase (GST), barley

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Microbial Production of Vegetable Lycopene is an Alternative

Venhar CELİK OZGEN[1*], Semra YILDIZ[1]

[1]Department of Bioengineering, Faculty of Engineering, Firat University, 23119 Elazıg-TURKEY
*Corresponding author: venharcelik@gmail.com

Abstract

Lycopene is a carotenoid found naturally in vegetables and fruits. Tomatoes, watermelon, pink grapefruit, pink guava and rosehip high lycopene containing vegetables and fruits. It is the main carotenoid of tomato because it makes up more than 80% of carotenoids in domestic. It is synthesized only by plants and microorganisms. Protect the device against photodynamicity. Lycopene and other carotenoids provide bright colors for most fruits (such as orange, lemon, grapefruit, strawberry, tomato, paprika, rosehip) and vegetables. Humans and animals can't synthesize lycopene, they need to take with food. Being a natural and potent antioxidant and protecting against cancer, it increases the importance of lycopene in the diet. It is used as a coloring agent. Because it is insoluble in water, many porcelain materials and plastic can be painted instantly. Herbal, chemical and microbial production of lycopene is taking place. Previous methods for isolating plants have used a number of organic solvents in the final phase of the healing process. The disadvantage of these methods is that carotenes can be isolated and retained in some solvents that they purify. This requires that the carotene be washed with more solvent. Solvents can usually be removed by drying the crystals at elevated temperatures. Lycopene can degrade under these conditions. In chemical production, unwanted degradation of lycopene does not only affect the sensory quality of the final products, but also harms the health benefits of the human body of tomato-based foods that end up containing toxic substances. Microbial production is an alternative for obtaining high added value compounds. The toxicity and concentration of the enzyme inhibitor, the duration and type of fermentation, the properties of certain factors for a safe product that can be added to the carbon source, foods, feeds, medicines and cosmetics and thus can be benefited can be improved by lycopene microbial biosynthesis. Relatively work shows that a pure lycopene, suitable for human consumption, will be produced without the use of toxic organic solvents.

Key Words: Lycopene, metabolic engineering, microbial production

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Nano Sulfur (S) Applications in Chickpea on Yield Characteristics and Ascohyta Blight

Ceren ODABAŞIOĞLU[1], Ruziye KARAMAN[2], Muharrem KAYA[2*], Aykut ŞENER[2]

[1]Harran University, Faculty of Agriculture, Field Crops Department, Şanlıurfa-TURKEY
[2]Süleyman Demirel University, Faculty of Agriculture, Field Crops Department, Isparta-TURKEY
*Corresponding author: muharremkaya@sdu.edu.tr

Abstract

This study was carried out in order to determine the effects of Nano Sulfur applications on chickpea yield and some plant characteristics in experiment fields of Süleyman Demirel University Agricultural Research and Application Center in 2017. In the experiment; Azkan chickpea cultivar was used as plant material. The material of nano-sulfur (particle size 20 nm) was supplied by New Systems Petrol Products Import and Export Manufacturing Company. Four different applications control (CA), seed coating (SC), application to soil (SA) and seed coating+application of leaf (SC+LA) were examined. In the seed application, the solution containing 10% of the nano-sulfur (nano-S) at 1% of the seed weight was sprayed on the seeds with hand spray. In 2% SA and 0.3% application of vegetative parts nano-S solution was applied to the plots with motorized back sprayer at the rate of 200 liters per hectare. The experiment was conducted to completely randomized block design with three replications. Results showed that the effect of nano-S applications were significant in all of examined traits (plant height, number of pod and grain per plant, weight of 100 grains, grain yield and severity of ascochyta blight). Average of applications were varied for plant height 28.05-38.06 cm, number of pods 15.45-20.40, number of grains 18.96-25.17, weight of 100 grains 33.11-34.39 g, grain yield 1131.7-1469.3 kg ha^{-1} and severity of ascochyta blight 14.73-21.29% respectively. Nano-sulfur applications in chickpea have had positive effects on all the examined traits. In particular, the application of nano-sulfur to seed coating + vegetative period (leaf) was increased about 29% according to control. Ascochyta blight has decreased 30% to control.

Key Words: Chickpea, nano-sulfur, yield, ascochyta blight

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

In-silico Analysis in Chickpea for Proteins of Heat Shock Transcription Factors

Fatih DEMİREL[1*], Serap DEMİREL[2], Barış EREN[1]

[1]Iğdır University, Agriculture Faculty, Field Crop Department, Iğdır-TURKEY
[2]Yüzüncü Yıl University, Science Faculty, Molecular Biology and Genetic Department, Van-TURKEY
*Corresponding author: speed-fd@hotmail.com

Abstract

One of the biggest problems of humankind is global warming. It is predicted that global warming will greatly affect both abiotic and biotic stress factors. Abiotic stress is the primary cause of crop loss worldwide, especially high temperature. The plants give response to stress in different level such as biochemical and molecular level. Stress-responsive genes are regulated by means of transcription factors (TFs) as heat shock transcription factors (HSFs). Chickpea (*Cicer arietinum* L.) is a main food consumed due to a rich source of protein in the worldwide. Each bioinformatic study carried out for proteins of HSFs in chickpea is important for understanding that how is plant respond to stress. Here, we studied that twenty one HSFs protein obtained from NCBI and Phytozome database for comparative phylogenetic analysis in chickpea. Amino acid sequences were aligned using T-COFFEE and Myers-Millers matrix. UPGMA dengrogram was obtained using MacVector 14.0 software with bootstrap analysis. Based on our phylogenetic results, this proteins were divided into mainly four groups. HSFs protein motifs were analyzed with HMMER software and the Pfam protein family database. HSFs in-silico study can be usefull in understanding to their roles in respond to stress in chickpea.

Key Words: Chickpea, heat shock transcription factors, in-silico analysis, bioinformatic

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Use of Wild Species in Plant Breeding

Cemile ADIYAMAN[1*], Abdullah KAHRİMAN[2], Erdal ERBİL[1]

[1] GAP Agricultural Research Institute, Şanlıurfa-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Field Crops, Şanlıurfa-TURKEY
*Corresponding author: cemile_5@hotmail.com

Abstract

Rapid increase in population, accelerated global warming and climate change in the near future, one of the biggest problems that threaten humanity is the inadequacy of food and water resources in the world. Today, all life depends on plants. It is based on wild relatives of all cultivated cultivars, cultivated plant and animal species, found in the natural environment. Nowadays, wild species are used to obtain new seed varieties or to improve (breeding) existing ones according to the needs of the people. Wild species are resistant to high temperatures, drought and saltiness. They are highly economically valuable, especially because they are rich in genes that provide resistance to disease and pest. Wild species with a wide range of genetic resources are genetic sources, which are important for future problems in culture plants or for transfer of new traits.

Key Word: Wild species, plant breeding, plant diversty

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Different Intrarow Plant Distance Effects on Faba Bean Varieties in Şanlıurfa Conditions

Leyla İDİKUT[1*], Mustafa ÇÖLKESEN[1], Rahime DEMİR[1], Gülay ZULKADİR[1], Mehmet Davut ŞAHİN[2], Neslihan KANBUR[1], Ahmet OSMANOĞLU[1]

[1]Kahramanmaras Sutcu Imam University, Faculty of Agriculture, Department of Field Crops, Kahramanmaras
[2]GAP Agricultural Research Institute, Şanlıurfa
*Corresponding author: leylaidikut@gmail.com

Abstract

In the study, it was aimed to determine the most suitable intrarow plant distances (10, 15, 20 cm) for Salkim and Fontes varieties, 50 cm distance between row, in the first crop growing season of winter 2016-2017 in Sanliurfa conditions. The trial was conducted in split parcel trial design. The number of flowering days, number of main branches, height of first pods, plant height, number of pods per plant, number of grain per pod, weight of thousand grains, the number of ripening days, grain yield of faba bean were investigated. It was determined that the application of on row density had significant effect on height of first pods, plant height, number of pods per plant and grain yield. The number of flowering days, number of main branches, height of first pods, plant height, number of pods per plant, number of grain per pod, weight of thousand grains, the number of ripening days, grain yield of faba bean cultivars were showed range from 54-58 days, 3.05-3.40 unit, 13-19 cm, 47-59 cm, 4.20-4.55 unit, 3.75-4.00 unit, 1275-1575 g, 85-90 days, 157-282 kg da-1 respectively. The varieties did not differ statistically in terms of grain yields according to one year results obtained in the research, but it was recorded that the plant density was significantly different for varieties, the highest yield was obtained 15 cm and 10 cm intrarow plant distances for Salkım and Fontes respectively.

Kew Words: Faba bean, intrarow plant distances, yield elements

Horticulture Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Salt Stress on Grapes (*Vitis spp*.)

M. İlhan ODABAŞIOĞLU[1*], Gülbahar DEMİRTAŞ[2], Kadriye YILDIRIM[2], Sadettin GÜRSÖZ[1]

[1]Harran University, Agriculture Faculty, Department of Horticulture, Şanlıurfa-TURKEY
[2]Harran Univ., Graduate School of Natural and Applied Sci., Department of Horticulture, Şanlıurfa-TURKEY
*Corresponding author: milhanodabasioglu@gmail.com ; milhanodabasioglu@harran.edu.tr

Abstract

Nearly all of the grape varieties cultivated today are under the influence of their environment that limits their yield and development and they can't show totally their genetic potential in the vineyard conditions. One of the environmental factors limiting grape fertility and vegetative growth is physiological drought stress, which is caused by salinity. Salinity stress subject has been the frequently researched in recent years. Salinity stress has been investigated on grape varieties as much as other cultivated plants because the researchers predict that the areas to be vineyard in the near future will face salinity problems. Soil salinity is one of the most frequently encountered problems in our country in recent years. When this situation is taken into account; it has become a necessity to determine the soil salinity tolerance of cultivated local varieties and using as genetic source for the rootstock breeding studies. In this study, current researches of salinity stress effects on *Vitis* spp. species and grape varieties were reviewed such as stress damages and ameliorative applications. Tolerance of varieties and rootstocks to salinity are widely difference and scion (grape variety) in graft combinations have been found to be more important than rootstocks in terms of salt tolerance. In general, 100 mM NaCl application causes the stress in the grape varieties, whereas in the low concentration (0.21 mM) of B also can cause stress. It has been made clear that the application of proline, salicylic acid, MeJA (Methyl-jasmonate), EBR (Epibrassinolide) to grape leaf can be used to reduce the effects of salt stress also mycorrhiza and humic substances application to vineyard shows similar ameliorative effects.

Key Words: Salinity; physiological drought; grape; stress; ameliorative effects

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Commonly Preferred Training Systems at GAP Region Vineyards

M. İlhan ODABAŞIOĞLU[1*], Sadettin GÜRSÖZ[1], Bekir Erol AK[1]

[1]Harran University, Agriculture Faculty, Department of Horticulture, Şanlıurfa-TURKEY
*Corresponding author: milhanodabasioglu@gmail.com ; milhanodabasioglu@harran.edu.tr

Abstract

Viticulture is Turkey's one of the most important agricultural production branch. Thanks to nearly 4,5 million tons of grapes production annually from 468 792 hectares, Turkey ranks 6th among the countries of the world's leading producer of grapes. The Southeastern Anatolia Region where provides 18% of Turkey annual grape production, is second important grape cultivation region of Turkey. In the region shapes of training systems varies with compared to other regions of Turkey because of the too warm and arid climate conditions. In vineyards, commonly "open – center" and "Serpene" training systems preferred by farmers. Serpene is local training method. This method generally used in arid and very hot conditions. But in recent years, "pergola" and "T-Y" shaped wire training systems has also begun to be used. Whereas in irrigated conditions grapes which are grown in "open - center" and "Serpene" training system gives 6-8 kg yield per vine, "T-Y" training systems gives 20-25 kg yield per vine. In addition that vineyards where pergola training system have been preferred, 25-40 kg yield gives per vine. Although pergola system is seen more efficient than "T" and "Y" shape wire systems, total grape yield per hectare lower than "T-Y" shape system's because of the planting distances.

Key Words: Viticulture; training systems; pruning; GAP; grape cultivation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Raisin Production in GAP Region and the Importance of Besni (*Vitis vinifera* L.) Grape Cultivar

M. İlhan ODABAŞIOĞLU[1*], Kadriye YILDIRIM[2], Gülbahar DEMİRTAŞ[2], Sadettin GÜRSÖZ[1]

[1]Harran University, Agriculture Faculty, Department of Horticulture, Şanlıurfa-TURKEY
[2]Harran Univ., Graduate School of Natural and Applied Sci., Department of Horticulture, Şanlıurfa-TURKEY
*Corresponding author: milhanodabasioglu@gmail.com ; milhanodabasioglu@harran.edu.tr

Abstract

Raisin, one of the important export product of our country, is also one of the important income sources of the viticulture sector. Although important at this level, scientific research on raisins is not yet at the desired level. Considering the fact that our country (Turkey) one of the country who have a say in the world raisin market; it has become a necessary to quickly make new researches on this branch, to breed new grape varieties for raisin production and to determine the raisin production potential of the existing indigenous grape varieties and types. In this study; detailed information on the existing raisin production in the GAP region, which is one of the important grape cultivation region of our country, techniques and solutions used in grape drying, and local and standard varieties that stand out in production have been reviewed. In the study current status of the Besni grape variety which is prominent raisin variety produced in the GAP region, its current performance at the motherland, the effective temperature demand and drying methods were also examined. In addition, short ampelographic characterisation of local varieties, which have been found in previous studies in the area and have raisin potential, is reviewed.

Key Words: Raisin; GAP; Grape drying method; Besni grape variety

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Brief History of Viticulture and Wine Culture

M. İlhan ODABAŞIOĞLU[1*], Sadettin GÜRSÖZ[1]

[1]Harran University, Agriculture Faculty, Department of Horticulture, Şanlıurfa-TURKEY
*Corresponding author: milhanodabasioglu@gmail.com ; milhanodabasioglu@harran.edu.tr

Abstract

Grape varieties are one of the oldest plant groups on the earth where dates back 150 million years. Grape's first cultivated in the Caucasus was between 8000-6000 BC. It is believed that primitive viticulturing has been improved thanks to the cultivation of this wild plant (wild grapes) after 6000 BC years. After the invention of earthenware pots (5000-5500 BC) of wine production is assumed to be made. After first cultivation activities, grape varieties began to spread to the south of Euphrates by Semitic clans. After that wine culture spread from Syria to Anatolia (from east to west) and Anatolian clans such as Lydians, Phrygians, Mysians. Over the time wine culture also adopted by Persians and ancient Greeks. There are mosaics in Ancient Egypt indicating that the vineyard and the wine culture at the top level during the Fourth and Sixth Dynasties (2440 BC and 1400 BC). Among the famous codes (laws) of Hammurabi (King of Babylon at 1700 BC), there are articles regulating wine trade and consumption. Viticulture in Anatolia, continued to develop after it became Turks homeland (11th century AD). As the same time Turks do not inhibit the cultivation of wine grapes by Christian groups under their sovereignty, table grape cultivation which is very different and new for Europe, has spread from the Balkans to Italy, France and Spain during the Ottoman Empire period. The *V. vinifera* L. cultivation in America, where is the gene center of the grape species used as rootstock in today, began with the pioneer of Mexican missionaries at 1525. Nowadays, viniculture is done on a very wide geographical scale and is considered as an important agricultural activity. Viticulture and wine production, which has influenced many civilizations since 8000 BC, is still developing and has place in popular culture. Almost every organ of the grape that can be transformed into a different food product therefore it continues to have a distinct place and potential in agricultural production. In this study, a brief history of viticulture and wine culture and techniques applied in the past have been reviewed.

Key Words: Grape production; V. vinifera L.'s immigration; History of wine production; Ten millennium years with *Vitis vinifera* L.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Gibbellellic Acid (GA_3) Application Periods on Tulip Cultivation

Gamze GÜNDOĞDU[1*]

[1]Şırnak University, Agriculture Faculty, Department of Horticulture, Şırnak -TURKEY
*Corresponding author: gzengin32@hotmail.com; gzengin@sirnak.edu.tr

Abstract

This study was carried out in order to investigate effects of different Gibberellic Acid (GA_3) application soaking time (30 and 60 min) and doses (300 and 500 ppm) in a glasshouse. In the study, 50% compost, 30% perlite and 20% garden soil were used as growth media in the experiment. On sprout time, sprout rate, flowering time, diameter of flower, flowering period, plant length, number of tubers, tuber weight in tulip cv Cafe noir and Conqueror the effects were investigated. In study, applications and varieties effects on growth, development, early harvest time and quality characters of tulip were found important statistically. GA_3 aplications were found important statistically in respect of flowering time, plant length, number of tubers and tuber weight. Application soaking time was found important statistically in respect of plant length and tuber weight in tulip cultivation.

Key Words: Gibberellic Acid, Tulip

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Different Culture Containers Depth on the Yield and Quality of Radish (*Raphanus sativus*) Microgreen Cultured in Floating and Substrate Culture

Esra OKUDUR[1*], Nurgül ERCAN[2]

[1]Batman University, Sason Vocational School, Batman-TURKEY
[2]Akdeniz University, Faculty of Agriculture, Department of Horticulture, Antalya-TURKEY
*Corresponding author: esra.okudur@batman.edu.tr

Abstract

This study was carried out in the greenhouse located in the Akdeniz University, Faculty of Agriculture, Department of Horticulture research and application field, Ateş radish (large red) microgreen were cultivated in floating culture and substrate(peat) culture. In the study, radish microgreens were cultivated in three different container depths, 7,5 cm, 10 cm and 12,5 cm. The study was designed as 3 replications in the experimental design of factorial random blocks. Fifty seeds were sowed in the plastic pot. Every sides and bottom of each plastic pot was drilled holes (Ø 5 cm) with 5 cm distance. In this study, microgreen rootless length, root length, microgreen weight, microgreen diameter, cotyledon leaf width and length, plots yield, chlorophyll values were determined. Statistical analysis performed by using SPSS software (version 17).
According to the result of statistical analysis, microgreen weight, microgreen diameter, cotyledon leaf width and length in floating culture had significantly better results than substrate culture. Both growth methods (floating culture and substrate culture) and cultivation depth were statistically significant on microgreen rootless length, and root length. In terms of chlorophyll contents of cotyledon leaves, the cultivation method and container depth interactions were found statistically important. The microgreen weight was recorded 0.6 g and 0.29 g in floating and substrate culture respectively. The differences of microgreen weight was reflected as total yield value 445,18 g floating culture and 233,17 g substrate culture.

Key Words: Floating culture; substrate culture; microgreen

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of LED Lighting Applications in Different Wavelength on the Growth of Seedlings

Gamze ÇAKIRER[1*], Selen AKAN[1], Köksal DEMİR[1]

[1]Ankara University Faculty of Agriculture, Department of Horticulture, Ankara-TURKEY
*Corresponding author: gcakirer@ankara.edu.tr

Abstract

Production with seedling has a great importance in the success of plant production. The quality parameters of the seedlings have a significant effect on yield both the growth stage and elapsed time until planting stage. Possible delays at seedling planting period and seedling supply in production with seedling cause quality losses. This situation causes a serious problem in terms of seedling sector. There are different treatments to prevent of excessive elongation. Among the common methods, chemical treatments are used uncontrolled and widely. These treatments do not always give the expected results. Seedling shows very fast growth and development under suitable conditions and therefore, suppress of the growing in seedling production is necessary. As well as some physical applications, chemicals such as copper oxychloride, CCC, paclobutrazole and etephon are used to suppress of seedling growing. Growing is suppressed by chemical applications but some problems can occur. Continuation of growth stagnation after planting is the biggest problem. Studies on the plant growth and development for plant production have gained speed with LED lighting technology in the last few years. Having various impact on plant by different wavelengths of light sources and light color mixings, start to become widespread. The different wavelenghts of the light source are also evolving to other photoreceptors which produce significant physiological consequences. Thus, photoreceptors in plants can be stimulated by different wavelenghts of light sources. It is possible that the negativities of chemical treatments can be eliminated, and also, growth, development and quality parameters can be controlled by using this applications.

Key Words: seedling, light, LED lighting

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fruit Thinning and Its Importance

Sibel SÖYLEMEZ[1*]

[1]GAP Agricultural Research Institute, Şanliurfa-TURKEY
*Corresponding author: sblsylmz@gmail.com

Abstract

When a consumer buys fruit, it looks at its nutrition as well as its allure, bigness, shape, flavor and aroma. When this properties are better, agricultural products have so much in value. Therefore, besides obtain more product, to provid quality fruit which have a standard shape and quality, and high marked value to markets regularly every year is necessary for a profitable orcharding. Fruit thinning is one of the indispensable cultural processes in fruit trees for enhancing fruit quality but unfortunately it is not being done enough in our country. Fruit thinning can be done manually or chemically to provide labor savings. Growth regulators such as NAA, GA, Carbaryl (sevin), Benzyladenine can be used for chemical thinning. It is important to note that the thinning method, time, and application dose are adjust correctly. If the chemical thinning is done at the correct time, success can be achieved as much as at least manual thinning. However, in recent years all over the world and in our country as an important issue that should not be ignored to use environmentally friendly chemicals.

Key Words: Fruit growing, cultural processes, fruit quality

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Phenological and Pomological Characteristics of Some Local Pear (*Pyrus communis* L.) Cultivars Grown in the Perşembe District (Ordu)

Resul GERÇEKCİOĞLU[1*], Aycan ADIBELLİ[1], Öznur ÖZ ATASEVER[1]

[1]Gaziosmanpaşa Uni. Agricultural Faculty, Horticulture Department, Tokat-TURKEY
*Corresponding author: resul.gercekcioglu@gop.edu.tr

Abstract

In this research, the central district and villages of the Perşembe (Ordu) was conducted in the year 2015-2016. Among many local pear genotypes, the characteristics of varieties that may be of commercial importance to the local 28 were examined. These local varieties; fruit 536.37 weights g (gonoray)- 26.23g (kiraz armudu), fruit width(diameter) 80.49 mm (limon 2)-38.04 mm (kiraz armudu), fruit size of 94.52mm(limon 2)- 40.68mm(kiraz armudu, cherry) as a measured. Flesh firmness 27.37 lb (bağ armud)-13.90 lb (kara dalak), total soluble solids 15.20% (Hacı cur)-8.86%(kırmızı yanak) and titretable acidity 0.22% (bal armudu)-.0.96% (kiraz armudu) was determined. Local varieties of the fruit of the flesh colors white–creamy and white between was observed. Texture, no sandy (göynü söbek and kaba çörek) has been identified as sandy and less sandy.

Key Words: *Pyrus communis*, Local pear varities, Pomology

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Plantal Features of 'Sarı Aşı' Mulberry

Erdoğan ÇÖÇEN[1*], Hasan PINAR[2], Yüksel SARITEPE[1], Adnan CANBAY[1], Remzi KOKARGÜL[1]

[1]Apricot Research Institute, Malatya-Turkey
[2]Seyrani Faculty of Agriculture - Erciyes University, Kayseri-Turkey
*Corresponding author: erdogan.cocen@gmail.com

Abstract

Mulberry is grown in many parts of the world due to its high adaptability to different climatic and soil conditions. Because of the nutritional properties of the mulberry leaves and its use in silkworm production, the scientific studies carried out in the mulberry have focused more on leaf characteristics rather than mulberry fruit. There are more than 400 years of mulberry culture history in Anatolia. The mulberry genotypes collected from different region of the Turkey and many other countries are kept in Malatya Apricot Research Institute mulberry genetic resources parcels. In this study carried out in 2015-2016, it was aimed to determine the plant characteristics of the Sarı Aşı mulberry genotype found in the parcel. In the study, 10 years old trees were used as material. In the study; 'Sarı Aşı' mulberry genotype was abundant in male flower formation, female flower and fruit formation were not encountered. In the phenological observations of this genotype, which can be evaluated as leaf mulberry; the mouse ear stage of leaves was determined as 17 April, full leafing, as April 22, full flowering on male flowers as April 24 and full leaf fall as November 7. In morphological examination and measurements; the tree habitus developed upright and vigorous, and the branching in the trees was found medium. In terms of leaf morphology; leaf blade was elliptic shape, leaf blade edge notch was saw shape, leaf blade petiolar sinus shape was slightly indent, and leaf blade tip was pointed shape. In leaf upper side of the blade color measurement; average L, a and b values were determined as 36.7, -12.23, 14.72 respectively. At the end of the study, the plantal characteristics of the 'Sarı Aşı' genotype, which started to be registered in the name of the Directorate of Malatya Apricot Research Institute, are described in detail.

Key Words: Mulberry, Phenology, Pomology, Characterisation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Some Chemical Characteristics of the Earliness Apricot Cultivars Growing in Malatya Ecology

Yılmaz UĞUR[1*], Selim ERDOĞAN[2], Oktay Turgay ALTUN[1], Rukiye YAMAN[1], Nedim GÜLTEKİN[1], Cemil ERNİM[1]

[1]Apricot Research Institute, Malatya-TURKEY
[2]Inonu University, Faculty of Pharmacy, Malatya-TURKEY
*Corresponding author: yilmaz.ugur@tarim.gov.tr

Abstract

This study was conducted on 20 apricot varieties in genetic resource parcels of the Malatya Apricot Research Institute Directorate in 2016. Turkey has a share of 75% in dried apricots production of the world. Malatya, known as capital of the apricot in the country, produces almost all of the dry apricot in Turkey. The cultivation of table apricot has been neglected in Malatya which is the World leader in dry apricot production. Thanks to its favorable climatic conditions, our this province producing apricot which has rich flavor and aroma can also achieve the success in the table varieties as in the varieties suitable for drying. In this study, which we aimed to evaluate the table apricot potential of Malatya, erly growing apricot varieties were used as material. The chemical characteristics such as sugar (fructose, glucose and sucrose) and β-carotene were investigated. In the study, The amounts of β-carotene were between 17.63 - 87.70 ppm, fructose were 0.130 - 0.750 g/10 mL, glucose were 0.298 - 1.182 g/10 mL and sucrose were 0.156 - 0.388 g/10 mL.

Key Words: Earliness variety, β-carotene, sugar, table apricot

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of Outer Skin of Garlic as an Alternative Feed Source in Guppy Fish (*Poecilia reticulate* P.)

Selen AKAN[1*], F. Sertel SEÇER[2]

[1]Department of Horticulture, Faculty of Agriculture Ankara University, 06110 Dışkapı, Ankara
[2]Department of Fisheries and Aquaculture, Faculty of Agriculture Ankara University, 06110 Dışkapı, Ankara
*Corresponding author: sakan@agri.ankara.edu.tr

Abstract

Garlic (*Allium sativum* L.) and its extract have beneficial effects on fish health. Adding garlic or its extract into the fish feed has been used for decades. Garlic is used for improving fish health, prophylactic treatment for fish diseases and therapeutic for internal parasitic infections. However, the outer skin structure of garlic, which provides garlic to be stored for a long time was studied. The garlic skin, which is used as industrial waste, has polysaccharide, pectin, mannose, lignin, lipid, protein and phenolic compounds. Hence, this study planned to investigate the effect of the outer skin of the garlic for such a large purpose. Effects of feeding with the outer skin of garlic (OSG) was tested for 45 days of guppy (*Poecilia reticulate* P.) fries. Diet was prepared by adding a different ratio of outer garlic skin. The ratios were 0% (control), 1%, 5% and 10%. Growth parameters and survival were tested. Sampling was performed every 15th day. Total length and weight were measured. Final average weights of fish were 0.23, 0.21, 0.27 and 0.27g respectively. Final average lengths of fish were 27.00, 26.78, 29.00 and 28.33 respectively. Adding 5-10% OSG to fish food improve the growth of the fish.

Key Words: Garlic; Fish; *Poecilia reticulate* P.; Feed

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Phenological, Pomological and Morphological Features of 'Hacı Hamza' Pear

Yusuf BAYINDIR[1*], Erdoğan ÇÖÇEN[1], Remzi KOKARGÜL[1], Yüksel SARITEPE[1], İhsan AKGÜL[1]

[1]Apricot Research Institute, Malatya-TURKEY
*Corresponding author: ybayindir802@hotmail.com

Abstract

Pears, one of the pome fruits, are the most cultivated fruit species in the world after the apple. Anatolia is one of the main gene centers of this fruit which spreads from Eastern Europe to Caucasia and Turkestan. The 'Hacı Hamza' pear, which has been cultivated for many years in Malatya which is one of the important fruit production regions of Anatolia, is an important variety which is consumed and enjoyed by the region. In this study, carried out in 2016-2017, it was aimed to determine the phenological, pomological and morphological characteristics of the 'Hacı Hamza' pear considered as a material. In the study; flowering time was determined as the second week of April and harvesting time as the first week of October phenologically. In terms of tree morphology; it was determined that the tree vigor was strong and the tree crown shape was in drooping form. Examinations conducted in one years old shoots growth was straight length of internode was medium, number of lenticels was medium and vegetative buds were medium free. In the leaf morphology examinations, it was determined that the leaf blade length /width ratio were medium, the shape of leaf blade base was cordate, the shape of leaf blade apex was rounded and the incisions of margin was bluntly serrate. It was determined that flower buds lengths were medium, flower sepal length was long, shape of petals were large and broad ovate. In the pomological analyzes, it was determined that the average fruit weight was 118.88 g, fruit width was 56.56 mm, fruit stalk length was 47.79 mm, TSS value was 17.2%, TA value was 1.2% and pH value was 5.1. At the end of the study; the phenological, pomological and morphological characteristics of the 'Hacı Hamza' variety, which started to be registered in the name of the Directorate of Malatya Apricot Research Institute, have been defined in detail according to the UPOV criteria.

Key Words: Pear, Phenology, Pomology, Morphology, Characterization

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fruit Quality and Bioactive Content of Jujube Fruits (*Ziziphus jujuba*) Treated with Preharvest GA_3 and Parka Throughout Cold Storage

Burhan OZTURK[1*], Orhan KARAKAYA[1], Muhammed YILDIZ[1], Sefa GUN[1], Umut ATES[1]

[1]Ordu University, Faculty of Agriculture, Department of Horticulture, Ordu-TURKEY
*Corresponding author: burhanozturk55@gmail.com

Abstract

This study was conducted to investigate the effect of preharvest GA3 and Parka treatments on fruit quality and bioactive compounds of jujube during cold storage. Parka (1%) and GA3 (15 mg L^{-1}) were sprayed to experimental trees 3 and 2 weeks before the commercial harvest date. In the study, treatments were selected as control, Parka, GA_3 and GA_3+Parka. Fruits were stored in MAP (Xtend, StePac) at 0±0.05°C and 90±5% RH during 45 days. At the end of cold storage, weight loss of Parka and GA_3 treated fruits were lower than control. Respiration rate was delayed with Parka and GA_3 treatments. The highest firmness was measured in Parka+GA_3 treatment. While L* and hue angle values were higher in GA_3-treated fruits, chroma value was lower. The titratable acidity, total phenolics, total flavonoids and antioxidant activities (DPPH and FRAP assay) of GA_3-treated fruits were higher than control and Parka treatments. But the lowest SSC values were measured in GA_3-treated fruits. Parka delayed the loss of vitamin C in fruits. It was concluded that Parka + GA_3 treatment maintained the quality loss of fruit such as firmness, SSC, vitamin C, total phenolics, total flavonoids and antioxidant activity.

Key Words: Color, firmness, flavonoids, phenolics, respiration rate, SSC, weight loss.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Map and Methyl Jasmonate Treatments on Bioactive Compounds of Medlar Fruits (*Mespilus germanica* L.) Throughout Cold Storage

Burhan OZTURK[1*], Kenan YİLDİZ[2], Ahmet OZTURK[3], Orhan KARAKAYA[1], Sefa GUN[1], Serkan UZUN[1], Muttalip GUNDOGDU[4]

[1]Ordu University, Faculty of Agriculture, Department of Horticulture, Ordu-TURKEY
[2]Gaziosmanpaşa University, Faculty of Agriculture, Department of Horticulture, Tokat-TURKEY
[3]Ondokuz Mayıs University, Faculty of Agriculture, Department of Horticulture, Samsun-TURKEY
[4]Abant İzzet Baysal Univ., Faculty of Agriculture and Natural Sciences, Dept. of Horticulture, Bolu-TURKEY
*Corresponding author: burhanozturk55@gmail.com

Abstract

This study was carried out to investigate the effects of MAP and MeJA treatments on quality properties and bioactive content of medlar fruit during cold storage. Fruits were dipped to 0.1 mM MeJA solution during 1 min, and then placed inside MAP. The fruits were stored at 0±0.5 °C and 90±5% RH during 60 days. During cold storage, quality attributes of fruit were determined at intervals of 20 days. Weight loss and respiration rate of MeJA and MAP treatments was lower than control. The softening of fruit was delayed with MAP and MeJA treatments. MAP and MeJA didn't affect L* and hue angle values of fruit. At the end of cold storage, the lowest SSC and vitamin C were obtained in MAP-treated fruits, whereas the highest total phenolics, total flavonoids and antioxidant activities (both DPPH and FRAP assay) were measured from MAP and MeJA treatments. As a result, MAP and MeJA treatments cloud be used as a tool to delay the quality loss of medlar fruit during cold storage.

Key Words: Antioxidant, firmness, phenolics, respiration rate, weight loss.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of GA_3 Applications on Plant and Fruit Growth in Tomato Production

Gamze ÇAKIRER[1*], Selen AKAN[1], Köksal DEMİR[1]

[1]Ankara University Faculty of Agriculture Department of Horticulture, Ankara-TURKEY
*Corresponding author: gcakirer@ankara.edu.tr

Abstract

The role of plant regulators are very important to grow in yield and quality. When suitable material, dose and period were determined for application of GA_3, it is possible to use it for increasing the yield without causing health threat. In fact, hormones are found naturally in the plant, produced by different organs of the plant, regulating growth and many physiological functions. If the hormones were not found in the plant, it would not be possible to talk about a plant life. The problem with growth regulators is that they are arised from wrong informations and practices. Gibberellic acid applications could be effective in increasing yield and quality in the growing of tomatoes in the greenhouse. The Gibberellin hormone is naturally exist in the plant and it is play a role in increasing the cell's largeness and promoting flowering. Gibberellic acid is applied to tomato at different periods and doses in different growth stage for yield, plant growth, flowering and fruit quality.

Key Words: tomato, gibberellic acid, hormones

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Use of Essential Oils as an Alternative to Chemical Protective in Postharvest Storage

Ezgi OKAN ARIKAN[1*]

[1]Pamukkale Univ., Çal Voc. School, Plant and Animal Production Prog., Organic Agri. Dept., Denizli-TURKEY
*Corresponding author: ezgiokann@gmail.com

Abstract

In the world, developed and developing countries produce fruits and vegetables and market them. This countries use different technologies to market their harvested products for a long time. The most important part of the technologies used is the postharvest storage methods. In particular, various methods are used to fight against the diseases and pests that occur after the harvest and to prevent product losses. While many of these methods are chemical, alternative plant-based methods are being developed too. In this study, essential oils that is an alternative to herbal characteristics recently and used to prolong the products life in post-harvest storage, has been discussed in post harvest practises. Postharvest losses in crops are due to physiological disorders, physical injury and fungal infections. Many of the fruit are susceptible to the attack of various pathogenic fungi such as Alternaria alternata, Botrytis cinerea, and they cause mycosis by forming mycotoxin. Alternative methods to reduce the use of chemical fungicides to control post harvest decay are being investigated. For example, propolis was applied against bacteria and fungi causing decay in different fruits and vegetables and positive effects were observed. In another study, *Mentha arvensis* L. and Zingiber officinale Roscoe's essentional oils were found to have toxic effects on *P. italicum*. Studies show that the essential oils of plant origin are a natural preservative in the product's protection, and the synthetic preservatives have begun to take its place. With the increases in these studies, it is possible to protect natural life and sustainable environment.

Key Words: Essentional oils, postharvest, alternative methods

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Change in the Amount of Sugar in Different Periods of Maturation of Some Blackberry Species

Yılmaz UĞUR[1*], Oktay Turgay ALTUN[1], Rukiye YAMAN[1], Selçuk AVCI[1], Selim ERDOĞAN[2]

[1]Apricot Research Institute, Malatya-TURKEY
[2]Inonu University, Faculty of Pharmacy, Malatya-TURKEY
*Corresponding author: yilmaz.ugur@tarim.gov.tr

Abstract

Blackberries are in the *Rubus* family of the *Rosaceae* family. Almost all of the cultivars of the blackberries which motherland are South, West and Central Europe are of North American origin. Blackberry has an important potential in fruit species because it is commonly used in both the fresh and processing product. Sugars are among the criteria in fruit maturation as well as they are effective in several physiological events. In this study, it was aimed to determine the amount of sugar in different maturation periods of some blackberry species. In the present study, sugar (fructose, glucose, and sucrose) contents of the blackberry species grown in Malatya of Turkey were determined. As a result of the analyzes, it was observed that the sugar compositions of the fruits changed during different maturation periods. Fructose was the predominant sugar in the studied blackberry species and ranged from 0,280 to 3,431 g/10 g, glucose; range from 0,206 to 3,129 g/10 g and sucrose; range from 0,009 to 0,042 g/10 g.

Key Words: Blackberry, Fructose, Glucose, Sucrose

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Chemical Characteristics of "Köhnü" Table Grape

Yılmaz UĞUR[1*], Selim ERDOĞAN[2], Nihat ÖZKAN[1], Sibel KILIÇARSLAN[1], Hatice ŞAHİNER[1], Rukiye YAMAN[1], Oktay Turgay ALTUN[1], Hasan KOÇ[1], Makbule YANAR[1], Cemil ERNİM[1]

[1]Apricot Research Institute, Malatya-TURKEY
[2]Inonu University, Faculty of Pharmacy, Malatya-TURKEY
*Corresponding author: yilmaz.ugur@tarim.gov.tr

Abstract

'Köhnü' grape is a domestic grape that is evaluated as table and wine. It is intensively cultivated in Arapgir district in Malatya. It is also known as Arapgir grape. It is also grown in the Ağın and Keban districts in Elazığ. Grape grains are black-light purple, hazy, oval-shaped, medium-sized, 2-3 core, sweet, thin crusty and abundant juicy. The acidity is low, the TSS is moderate and the yield of juicy output is high (73%). The cluster weight is approximately 250 g. In the late period (the last week of September, the first week of October), it is mature. Shelf life is around 10 days. It can be stored in cold storage for up to 3 months without any application. Cultivation of 'Köhnü' grape has become increasingly widespread in recent years. In region, Serpene and Goble style are cultivated. The geographical patent of this local grape cultivar has been made. In Malatya and Elazığ provinces, the annual average production amount is around 7000 tons. This study was carried out in 2017 in the samples taken from a farmer's vieyard in Arapgir district. In order to determine some chemical properties of the grape, parameters such as TSS, pH, titratable acidity, maturity index, grain color, resveratrol and sugar composition were studied.

Key Words: Resveratrol, Arapgir, table grape

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Proteins Production System: Transcription and Translation

Sibel SÖYLEMEZ[1*], Bekir Erol AK[2], Ebru SAKAR[2]

[1]GAP Agricultural Research Institute, Şanliurfa-TURKEY
[2]Harran University Faculty of Agriculture, Şanliurfa-TURKEY
*Corresponding author: sblsylmz@gmail.com

Abstract

How the cells are bring about the bases of living organisms, the basis of the cells brings the proteins, too. The cell is not only coexisting many complex organelles and systems, but also is a result of their contact with each other. Protein molecules are like bricks that build cells. But the amino acids which constituting proteins are smaller molecules. So long chains of amino acids forming proteins and proteins which organized as a complex are create the cell. A cell that has a complex structure does not consist of only proteins. Furthermore, chemical substances such as carbohydrates, oils, glycolipids, phospholipids and DNA - RNA molecules are also participate in cell structure. But it is not possible to think of a protein-free cell. The plants are capable of synthesizing 20 of the standard amino acids which are required for them. The best known role of proteins is the task of enzymes as catalysts of chemical reactions. Enzymes affect most of the reactions involved in metabolism and catabolism, as well as DNA replication, DNA repair and RNA synthesis.

Key Words: Protein synthesis, Transcription, Translation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A New Apricot Cultivar 'Levent'

Erdoğan ÇÖÇEN[1*], Remzi KOKARGÜL[1], Yüksel SARITEPE[1], Adnan CANBAY[1], Cemil ERNİM[1], Mustafa AKÇAY[1]

[1]Apricot Research Institute, Malatya-TURKEY
*Corresponding author: erdogan.cocen@gmail.com

Abstract

Apricot is in third place in terms of the production of stone fruit species after peaches and plum in the world. There are a large number of early and mid-season apricot varieties suitable for table and dried food consumption in the world, while the late varieties are limited in number. Breeding studies to develop late varieties are continuing in the world and Turkey. At the end of selection studies conducted for many years by the Malatya Apricot Research Institute, 'Levent' apricot cultivar was registered as an extremely late cultivar in 2017. In this study carried out in the 'Levent' apricot cultivar in the apricot genetic resources parcel of Malatya Apricot Research Institute in 2016-2017; phenological observations revealed that the full bloom period was in the middle of March and 1-2 days before the 'Hacıhaliloglu' cultivar, the harvest time was in the middle of September and 2 months after the 'Hacıhaliloglu' cultivar. In pomological analyzes, fruit weight, TSS ratio, pH and TA were determined as 18-24 g, 17-19%, 4.2-4.6 and 0.60-0.80% respectively. At the end of the study, it was determined that the 'Levent' apricot cultivar registered in the name of the Directorate of Malatya Apricot Research Institute could be regarded as a table-type and extremely late maturing variety.

Key Words: Apricot, Characterization, Malatya

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Invenstigation of Mathers Breastmilk of Term and Preterm Infants with Regard to Some Free Amino Acids

Meryem AYDEMİR ATASEVER[1*], Betül ALKAN POLAT[2]

[1]Dept. of Food Hygiene and Technology, Faculty of Veterinary Science, Ataturk University, Erzurum-TURKEY
[2]Vocational School of Health Services, Erzincan University, Erzincan-TURKEY
*Corresponding author: meryematasever@atauni.edu.tr

Abstract

Due to its optimal protein and amino acid composition, human milk is considered to be the best source of nutrition for the human infant. Although the nutritional value of human blood has been extensively researched, very few publications have been published describing the free amino acid (FAA) content. The aim of the study is to determine the concent of some free amino acids in maternal milk. Human milk was obtained during two different stages of lactation (colostral ana transitional milk). One hundred samples were collected from 50 healthy mothers of term infants and 50 mothers of premature infants 29 to 37 weeks gestation (mean 33 weeks). Free amino acid levels were measured by using LC-MS / MS with respective analyze kits. Lactation period and gestational age affected free amino acid levels (especially; arginine, argininosuccinic acid, asparagine, glutamic acid, hydroxyproline, serine, carnitine, dopamine, histidine, leucine, lysine, phenylalanine). It is determined that, glutamic acid is the most abundant amino acid (term mothers; 2313 mmol/L, pretem mothers 1270 mmol/L), followed by alanine (term mothers; 239 mmol/L, pretem mothers 305 mmol/L). In comparing individual free amino acid, there were significant differences in concentrations between term and preterm human milk ($p<0.05$). As a result, it is estimated that human milk composition is significantly affected by gestational ageand lactation period. It has been founded that the free amino acid content of breast milks how wide variations. Due to this, new researches are needed in this regard.

Key Words: Breast Milk, Free Amino Acid, Gestational Age, Lactation.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Applications of CRISPR / Cas9 Technology on Plant Genomic Regulation

Ahmet SAY[1*], Özgür ÖZMEN[1], Anıl Mehmet BALTACI[1], Mehmet ARSLAN[1]

[1]Erciyes University, Faculty of Agriculture, Department of Agricultural Biotechnology, Kayseri-TURKEY
*Corresponding author: ahmet_sy@windowslive.com

Abstract

The application of genomic regulation using artificial nucleases has the potential to modify genomes with precise and predictable measures in a manner targeted by a guide RNA and to accelerate simple basic investigations of plant breeding. Plant regeneration studies provide a controlled mutation by silencing a specific gene or gene family with a targeted specific mechanism. In this study, we have recently described the technology of clustered regularly interspaced short palindromic repeat (CRISPR) / CRISPR-associated protein 9 (Cas9), which specifically sequenced the double-stranded DNA sequence. Homozygous gene knockout using CRISPR / Cas9 can be generated in a single generation to be used in breeding studies. Using a CRISPR / Cas9, the homozygote gene knockout is revealed in a single generation, making it available for breeding studies. We compared positive and negative aspects of this improved technology with plant regeneration and compared it with other genomic editing technologies, zinc finger nucleases (ZFNs) and transcriptional activator-like effector nucleases (TALENs). In this review we have recently made a general review of the work done with CRISPR / Cas9 technology. We discussed how effective this application could be in practice. Developed this new technology in plant breeding in Turkey Studies CRISPR / Cas9 will provide an overview of the use.

Key Words: Agriculture, Gene, CRISPR / Cas9, ZFNs, TALENs

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Next-Generation Sequencing (NGS) in Agriculture

Ahmet SAY[1*], Anıl Mehmet BALTACI[1], Özgür ÖZMEN[1], Mehmet ARSLAN[1]

[1]Erciyes University, faculty of Agriculture, Department of Agricultural Biotechnology, Kayseri, Turkey
*Corresponding author: ahmet_sy@windowslive.com

Abstract

Many plant species used in agricultural production have been sequenced and many gene regions have been identified. The detection of these gene regions and the recognition of the functions of proteins formed by the expression of gene regions play an important role in obtaining new varieties. Sequenced genomes are used to identify mutations and determine genetic diversity within species. In this way, breeding studies are carried out to develop the crops with superior properties in terms of yield characteristics and resistance to abiotic-biotic stress factors. Sequencing methods have been developed along with advancing technology and plants used in agricultural production have been sequenced with NGS techniques. NGS describes as DNA sequencing technology and it is a revolution for genomic research. NGS consists of different platforms. Millions of small fragmets of DNA can be sequanced by all NGS platforms and genetic maps can be formed by combining these fragments with bioinformatics analyzes. NGS techniques can be used for whole genome sequencing or sequencing a specific gene region. Sanger is at the head of the NGS platforms and has pioneered the development of sequencing technology in 1977 as the first NGS platform. Then, Roche (454), Illumina, SOLID and SMRT sequencing platforms were developed. Sanger can arrange fragments in the length of 300-1000 nucleotides and nowadays, SMRT can be sorted 2.3-2.9 kb lengths. Using these platforms, genomes of high-value crops were sequenced and gen regions, repeat regions were determined. This work will provide an overview of the use of NGS techniques in agriculture.

Key Words: Agriculture, Next-Generetion Sequencing, Genome, Gene

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Black Onion

Selen AKAN[1*]

[1]Department of Horticulture, Faculty of Agriculture Ankara University,06110 Dışkapı, Ankara
*Corresponding author: sakan@agri.ankara.edu.tr

Abstract

Onion (*Allium cepa* L.) have been consumed as a spice beside any kind of food since ancient times. Despite strong recommendation for onion in daily diet, some people do not prefer consume because of the pungent smell and bitterness flavor. Onions are used as a fresh in foods or processed food. One of processing method is fermentation process. Fermented onion also called black onion that is ferment under high temperature (60-80 ºC) and high humidity (90% RH) conditions for 30-60 days. By this process, unstable and highly odorous compounds of onion can be converted into stable and odorless compounds with black color. Black onion's amount of quercetin by a factor of 10 compared with fresh onions. Quercetin supplyes high antioxidant activity. Hence, black onion can be used as a potent natural antioxidative source. Nutrient content of black onion makes it more attractive to use as a diet supplement in addition to smell and taste. Japan and Korea consume black onion in diets, juices and extract powder. Moreover, black onion has a positive effect on human health by inhibitation of some diseases such as high blood pressure, cholesterol, blood clots and diabetes. In the future, black onion demand is expected to increase by clinical studies and additionally, black onion will be a part of cosmetic and pharmaceutical industry. Main goal of this is to provide a brief knowledge about ***black onion.***

Key Words*:* Black onion; Fresh onion; *Allium cepa* L.; Fermentation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Comparison of Pomological and Chemical Characteristics of Domestic and Foreign Apricot Cultivars Grown in Malatya Conditions

Makbule YANAR[1*], Yılmaz UĞUR[1], Tahir MACİT[2]

[1]Apricot Research Institute, Malatya, Turkey
[2]Directorate of Provincial Food Agriculture and Livestock, Malatya, Turkey
*Corresponding author: makbuleynr@hotmail.com

Abstract

This study was carried out in 2017 in order to identify and compare the morphological, pomological and chemical characteristics of domestic foreign table apricot varieties in the in genetic resource parcels of the Malatya Apricot Research Institute Directorate. For this purpose, pomological-morphological observations and analyzes were made in domestic apricot varieties (Hasanbey, Soğancı, Alyanak, Hırmanlı, Paşamişmişi, Aprikoz, Şalak, Kayısı Eriği and İsmailağa) and foreign apricot varieties (Paviot, Perfection, Canino, Cafona, Hungarian Best, Luizet, Wilson Delicious and Precoce de Colomer). In domestic apricot varieties, the fruit weight was between 54,95 - 22,37 g, kernel weight was 3.19 - 1,68 g, fruit meat firmness was 1,41 - 0,7, TSS was 20,93 - 10,7% and pH was 5,28 to 3.62. In foreign apricot varieties, the fruit weight was between 35.68 - 11.6 g, kernel weight was 2.85 - 1.62 g, fruit meat firmness was 2.95 - 0.45, TSS was 13.3 - 9.7 and pH was 4.5 - 3.42.

Key Words: Table apricot, Malatya, Hasanbey, Paviot

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Loquat Production in Turkey

Şerife Gülden YILMAZ[1*], Seyla TEPE[1]

[1]Bati Akdeniz Agricultural Research Institute, 07100, Antalya-TURKEY
*Corresponding author: sgylmz@gmail.com

Abstract

Loquat are being produced in the season due to be released first season fruit market value is very high in Turkey. According to production level, loquat is the fourth largest fruits in the soft stone fruits category cultivated in Turkey in 2017, There are 286000 loquat trees, 262000 of which are bearing and 15,2 tonnes loquat production, which has nearly 24 million TL marketing values. Akko XIII, Gold Nugget, Hafif Çukurgöbek, Sayda, Yuvarlak Çukurgöbek and Uzun Çukurgöbek are available loquat varieties in Turkey. Mediterranean Region has more suitable ecological conditions for growing loquat according to other regions of the country. Especially in terms of earliness is a very convenient area. In recent years, loquat production is done under the cover in Antalya province). Early fruits provides very high price (Çelikyurt et all. 2010). Turkey has been put forward in the loquat production. the total loquat production was 15184 tonnes in Turkey. Approximately 96% of Turkey's loquat production in the Mediterranean region (14557 tonnes), it also is produced almost exclusively in the province of Mersin (9691 tonnes). There are nearly 256 thousand loquat trees in mediterrian region, nearly 139 thousand loquat trees in Mersin (Anonymous, 2018).

Key Words: loquat production, areas, number of loquat threes

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effect of Methyl Jasmonate Applications on Some Growth Parameters İn Strawberry Plant under Cadmium Stress

Ferhad MURADOĞLU[1*], Rana BAYTIN[2], Gökhan AKKUŞ[3], İbrahim BAŞAK[2]

[1]Faculty of Agriculture and Natural Sciences, Horticulture Dept., Abant İzzet Baysal Univ., Bolu-TURKEY
[2]Faculty of Agriculture, Horticulture Department, Yuzuncı Yıl University, Van-TURKEY
[3]GAP Agricultural Research Institute, Şanlıurfa-TURKEY
*Corresponding author: muradogluf@ibu.edu.tr

Abstract

Heavy metals which are not the essential plant nutrients for plants generally have toxicity effect. As cadmium (Cd) is well known as one of the most toxic metals affecting the environment and can severely restrict plant growth and development. Plant hormones are small molecules that regulate plant growth and development, as well as responses to changing environmental conditions by modifying the production, distribution or signal transduction of these hormones, plants are able to regulate and coordinate both growth and/or stress tolerance to promote survival or escape from environmental stress. Jasmonates (JAs) modulate many advance plant processes and play an active role in plant defense mechanism against unfavorable environmental stress.

The present study was undertaken to test the influence of exogenously applied methyl jasmonate (MeJa) on some growth parameter of strawberry (Camarosa cv.) exposed to heavy metal (Cd) stress. The results present in this work show that growth parameter of strawberry was decreased parallel with the application of increasing concentrations of Cd. On the other hand, exogenously applied different dose of methyl jasmonate was modify of cadmium toxicity and root number, root weight, body weight, and leaf weight rose by 67.40%, 26.20%, 2,53% and 21.03 respectively, with depend on methyl jasmonate dose.

The results presented in this work suggested that Cd treatments have the negative effect on growth and methyl jasmonate apply play an important role in the strawberry responding to abiotic stress.

Key Words: Heavy metal toxicity, cadmium, Methyl Jasmonat, strawberry

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Characterization of Strawberry Population Based on Some Phenelogical Characteristics

Ebru KURT[1*], N. Ebru KAFKAS[1], Sevgi PAYDAŞ KARGI[1]

[1]Cukurova University, Faculty of Agriculture, Department of Horticulture, Adana-TURKEY
*Corresponding author: kurte@cu.edu.tr

Abstract

This study was done 2014-2015 growing period at experimental areas and laboratories of C.U.A.F. Horticulture Department and Alata Horticultural Research Station. The aims of this study; It is the characterization of some plant properties in strawberries. Foreign cultuvars such as Albion, Sabrosa and Fortuna used as matternal parent and Ebru, Sevgi, Kaşka as patternal parents previously created 9 various F1 cross population and their progenies were used as a plant materials. 9 various F1 cross population and their parents were characterized based their plant characteristics such as and plant growth, shape, plant vigor and yield and flower characteristics such as flower numbers, peduncle number, and its position to the leaves. It was determined that 2 populations of plant growth habit had upright and 7 populations had semi-upright. Populations in terms of plant vigor were medium properties. When fruit yield was examined, it was determined that 2 populations were high and 7 populations were medium in populations. Populations were medium in terms of flowers number. When the number of clusters is examined, it is determined that there are 8 clusters in the whole population. When the state of the flower clusters according to the leaves was examined, all the populations were in the same position with the leaves.

Key Words: Strawberry, Plant Growth, Plant Vigor, Yield, Flower Characteristic

Plant Protection Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Potential Weeds in Leaf Edible Vegetables of Eastern Mediterranean Cities, Turkey

Hilmi TORUN[1*], Dilek DİNÇER[1], Hasan DEDA BÜYÜKÖZTÜRK[1]

[1]Biological Control Research Institute, Adana-TURKEY
*Corresponding author: hilmi.torun@tarim.gov.tr

Abstract

This study was carried out in Mersin, Hatay, Adana and Osmaniye, Eastern Mediterranean Region of Turkey. Field surveys were done in lettuce, parsley, mint, rocket, purslane, cress and dill between January and December in 2015-2016. Weed species was found depending field decares for 10-18 frame thrown. The highest frequency and density of weed species were *Amaranthus retroflexus* (11.7% and 2.68 plant/m^2) in purslane, Mersin; *Urtica urens* (55.6% and 17.78 plant/m^2) in lettuce, Hatay; *Urtica urens* (10.2% and 3.26 plant/m^2) in parsley, Adana and *Sinapis arvensis* (5.6% and 0.89 plant/m^2) in parsley, Osmaniye. And also, *Cyperus rotundus* (20.0% and 6.00 plant/m^2 in mint, Hatay; 4.8% and 1.52 plant/m^2 in dill, Mersin), *Senecio vernalis* (25.0% and 4.80 plant/m^2 in rocket, Hatay) and *Portulaca oleracea* (6.3% and 1.60 plant/m^2 in cress, Adana) was found important in leaf edible vegetables.

Key Words: Leaf edible vegetables, Potential weeds, Eastern Mediterranean cities of Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Efficacy of Endophytic and Epiphytic Bacterial Antagonists for Botrytis Blight caused by *Botrytis cinerea* on sweet basil

Merve KARA[1*], E. Mine SOYLU[1,2], İ. Adem BOZKURT[1], Aysun UYSAL[1,2], Şener KURT[1,2], Soner SOYLU[1,2]

[1]Department of Plant Protection, Faculty of Agriculture, Mustafa Kemal Univ., Hatay-TURKEY
[2]Centre for Implementation and Research of Plant Health Clinic, Mustafa Kemal Univ., Hatay-TURKEY
*Corresponding author: mervekara@mku.edu.tr

Abstract

Being an economically important herb used in the food industry and for medicinal purposes, sweet basil (*Ocimum basilicum* L.) is harvested several times a season. *Botrytis cinerea* Pers. is one of the main foliar pathogens in the cultivated area of sweet basil. Gray mold infects the fresh wounds created during harvesting and also develops on harvested shoots. This fungal pathogen causes outstanding blossom and leaf blight symptoms. Control of this pathogen can be achieved with application of fungicide, however, a few chemical fungicides are registered against gray mold in sweet basil in Turkey. Additionally, fungicide resistance of causal agent is well known. Aiming at discovering efficient biocontrol agents against grey mold on sweet basil, we have selected 31 endophytic and epiphytic antagonist bacterial isolates from our biocontrol bacterial culture collection. Among 31 putative bacterial isolates, 10 bacterial isolates were found effective to inhibit of development *B. cinerea* in dual-culture assay. These antagonist bacterial isolates were identified as *Arthrobacter oxydans*, *Arthrobacter queen*, *Bacillus simplex* (2), *Bacillus endophyticus*, *Bacillus megaterium* (2), *Bacillus pumilis*, *Enterobacter cloacae* and *Micrococcus luteus* using morphological, biochemical tests and MALDI-TOF MS identification system. Among bacterial isolates against *B. cinere*a, *A. oxydans* was found to suppress mycelial growth (66.6%) significantly. Isolates of *Bacillus* spp. were also effective in mycelial growth inhibition in dual-culture assay. These bacterial isolates were observed to produce at least one of the antagonism mechanisms (such as phosphate solubilisation, cell wall degrading enzyme and siderophore production etc.), which might be involved in their mechanisms of suppressing the mycelial growth. Based on the origin of these bacterial isolates appear to be a good source of potential biocontrol agents against grey mold.

Key Words: Sweet basil, *Botrytis cinerea*, biological control, antagonist

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Biocontrol Potentials of Antagonist Bacterial Isolates Obtained from Different Plant Species Against Charcoal Rot Disease Agent on Mediterranean Sage (*Salvia fructicosa*)

Merve KARA[1*], İ. Adem Bozkurt[1], Şener KURT[1,2], E. Mine SOYLU[1,2], Soner SOYLU[1,2]

[1]Department of Plant Protection, Faculty of Agriculture, Mustafa Kemal Univ., Hatay-TURKEY
[2]Centre for Implementation and Research of Plant Health Clinic, Mustafa Kemal Univ., Hatay-TURKEY
*Corresponding author: mervekara@mku.edu.tr

Abstract

Mediterranean sage (*Salvia fructicosa* Miller) is one of the most commercially exploited medicinal plant naturally growing in eastern Mediterranean Turkey. *Macrophomina phaseolina* (Tassi) Goid remains the prevailing causal agent of charcoal rot disease that significantly suppresses the yield of a variety of crops including medicinal plants. On sage, pathogen causes stunting, blackening of stems, and rotting of the crown and roots. Pathogen's wide host range and ability to survive under arid conditions, coupled with the ineffective use of fungicides against it, have spurred scientific endeavours for alternative avenues to control this phytopathogen. Biological control is non-hazardous strategy to control plant pathogens and improve crop productivity. Rhizosphere inhabiting beneficial bacterial species have shown unique plant growth promoting as well as antagonistic activity against fungal phytopathogens. In the present study, antagonist bacterial species were isolated from rhizosphere of various host plants of the pathogen such as cotton, lettuce and strawberry. Bacterial isolates were identified by using morphological and MALDI-TOF analyses system. A total of 65 epiphytic bacteria belonging to *Acetobacter*, *Arthrobacter*, *Bacillus*, *Burkholderia*, *Enterobacter*, *Methylobacterium*, *Micrococcus*, *Pantoea*, *Pseudomonas*, *Rhizobium*, *Serratia*, *Stenotrophomonas* spp were selected as potential biocontrol agent and screened *in vitro* for their ability to suppress the mycelial growth of *M. phaseolina*. Among the tested bacterial isolates, eleven bacterial isolates were found to suppress mycelial growth of the disease agent in varying ratio (5.56-74.44%). Antagonist *Arthrobacter oxydans* was the most effective isolates by inhibiting mycelial growth (74.44% inhibition of mycelial growth over control). Antagonistic effect of the most efficient bacteria on hyphal morphology was studied by using Nomarski DCI-assisted light microscopy technique revealed that effective bacterial antagonist isolates was able to damage fungal mycelia may be due to cell wall degrading enzyme(s), establishing its role as a potential antagonist against *M. phaseolina*.

Key Words: Sage, biological control, antagonist, *Macrophomina phaseolina*

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Characterization and Identification of Fungal Species Associated with Root Rot in Cut-Flower Roses

Aysun UYSAL[1,2*], Şener KURT[1, 2], E. Mine SOYLU[1,2], Merve KARA[1], Soner SOYLU[1]

[1]Department of Plant Protection, Faculty of Agriculture, Mustafa Kemal Univ., Hatay-TURKEY
[2]Centre for Implementation and Research of Plant Health Clinic, Mustafa Kemal Univ., Hatay-TURKEY
*Corresponding author: aysunuysal31@gmail.com

Abstract

Rose (*Rosa* spp.) is the most important commercial cut flower plant in Turkey and worldwide. One of the most important constraints on commercially grown rose varieties is fungal root diseases. Root, crown and stem rot of rose was observed in commercial rose greenhouses house at 5-da area (approx. 30.000 seedlings) in İskenderun district, Hatay, during the fall of 2017. Disease incidence was more than 50% in the greenhouse consisting of Gardenia (hybrid), Samurai (domestic) and Grant Gala (hybrid) varieties. Infected roots and crown turned dark brown or black; the upper part of the plant showed a wilt symptom. Plants died a few days later due to disruption of translocation of water and nutrients. The objective of the present study was to characterize causal agents of diseased tissues obtained from infected roots and stems of roses. Infected root and stem tissues taken from the infected plants were surface disinfected with 1% NaOCl for 3 min, dried on sterilized filter paper and transferred to potato dextrose agar plates amended with 100 µg per ml streptomycin sulphate. After 2 to 3 days incubation at 24 °C in the dark, cultures were microscopically examined. *Cylindrocladium* spp, *Fusarium* spp. and *Rhizoctonia* spp. have been associated with root and crown rot of roses. Pathogenicity was conducted pipetting onto each of plant by 0.5ml of spore suspension (1×10^6 conidial/ml) on 30-day-old rooted cutting plants in the greenhouse. Two weeks after inoculation, the infected cuttings showed symptoms of leaf yellowing and water-soaked rot in roots.

Key Words: Cut-Flower Roses, Root Rot, Fungal pathogens, characterization

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Characterization of *Colletotrichum truncatum* Infecting Alfalfa in Hatay, Turkey

Aysun UYSAL[1*], Şener KURT[1]

[1]Department of Plant Protection, Faculty of Agriculture, Mustafa Kemal Univ., Hatay-TURKEY
[2]Centre for Implementation and Research of Plant Health Clinic, Mustafa Kemal Univ., Hatay-TURKEY
*Corresponding author: aysunuysal31@gmail.com

Abstract

Diseases can cause major yield reduction in alfalfa and reduce the feeding value of the forage. Leaves, stems, roots, and crown can be affected. In Hatay, anthracnose symptoms on stems were observed as a few irregularly blackened spots to large, sunken, and oval to diamond-shaped lesions. Stems eventually turned straw coloured and died. The objective of the current study was to characterize the causal agent of anthracnose disease on alfalfa. Diseased plants were collected during growing seasons of 2016 and moved to the laboratory for further processing. Diseased leaf tissues were surface-sterilized in 70% ethanol for 1 to 2 min, and transferred on to PDA (Potato dextrose agar). Based on colony morphology, mycelial growth, conidial formation and other characteristics, morphological identification of fungal culture was performed. Acervuli containing spores and dark setae were observed within lesions. Conidia were hyaline, one-celled, and falcate to nearly straight with and measured 15.2 to 22.4 × 3.4 to 4.0 µm. For molecular characterization, DNA was extracted from mycelium, Actin and GAPDH genes were amplified with ACT512F-ACT793R and GDRF1-GDR primers and sequenced. The sequences were compared by BLAST search to GENBANK database and showed 100% and 99% similarity to *Colletotrichum truncatum* isolates (Accesion Nos: MH001400, MG951803, respectively). The identify of the fungal isolate of *C. truncatum* was confirmed by analysing MALDI-TOF MS (Microflex LT). The identification of fungal isolates (ACt1) was reference isolate BISAK-ACt present in the library of MALDI-TOF MS.

Key Words: Alfalfa, Colletotrichum, characterization,

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Cluster Analysis of Plant Pathogen *Fusarium* Species by Maldi-Tof Mass Spectrometry

Aysun UYSAL[1,2*], Şener KURT[1,2], E. Mine SOYLU[1,2], Merve KARA[2], Soner SOYLU[2]

[1]Department of Plant Protection, Faculty of Agriculture, Mustafa Kemal Univ., Hatay-TURKEY
[2]Centre for Implementation and Research of Plant Health Clinic, Mustafa Kemal Univ., Hatay-TURKEY
*Corresponding author: aysunuysal31@gmail.com

Abstract

MALDI-TOF/MS has emerged as a rapid, accurate and sensitive technology for identification bacteria, fungi and yeast. Differences between protein spectra can be used for individual species typing by MALDI-TOF/MS. With these values, mass spectrometry-based cluster analysis is conducted in which closely related species. The goal of our study was to evaluate this approach for the rapid identification and typing of ten different species of Fusarium genus. For MALDI-TOF/MS analysis was used formic acid- ethanol extraction. Mass spectra acquisition and analysis was performed on Bruker Microflex Platform. The standard MALDI-TOF/MS Biotyper microorganism database (Bruker Daltonics) contains 364 MSPs for fungi, 6903 MSPs for bacteria, 63 MSPs for yeast, Also, total microorganism database of MALDI-TOF/MS Biotyper of BISAK comprises 236 MSPs. The Fusarium species is one of the most common groups of plant diseases. These Fusarium species, are *F.culmorum, F.solani, F.verticilloides, F.dimerum, F.incarnatum, F.oxysporum, F.proliferatum, F. moniliforme, F. equiseti, and F. ceralis*. *Fusarium culmorum* and *F. cerealis* related to closely, but *F. verticilloides, F. proliferatum, F.oxysporum* are not phylogentically related to. Thus, several *Fusarium* species are not phylogenetically related to base on protein profiling.

Key Words: *Fusarium* species, Cluster analysis, MALDI-TOF/MS

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Population Development of *Thirips* spp. (Insecta: Thysanoptera) that Was Seen in Sunflower (*Helianthus annuus* L.) which was Grown in Bingol Conditions

Emin KAPLAN[1*], Erkan BOYDAK[2]

[1]Bingöl University, Faculty of Agriculture, Plant Protection Department, Bingöl-TURKEY
[2]Bingöl University, Faculty of Agriculture, Department of Field Crops, Bingöl-TURKEY
*Corresponding author: eminkaplan021@gmail.com

Abstract

In today's world, in human nutrition, almost every repast and eat can be used that oil can be obtained from vegetable products or from animal products. However, it is known that the oils obtained from herbal products are more concentrated in our country. The oils are obtained from plants such as cotton, olive, maize, walnut, konola, soya and sunflower. Because, more than half of the vegetable oil production is obtained from sunflower plant. It is known that there are some problems in the production of sunflower which has a very important potential in oil production. In addition to the lack of climatic and soil characteristics from these problems, it is very important the damage caused by birds and harmful insects. Bird damage can be partially prevented when sunflower surfaces are blocked by wrapping a protective net or a pouch, it can not be get any prevented against insect damage. In this sttudy, it was investigated to the population development and density of *Thirips* spp. that is observed causing significant harm in the flowering period of the sunflower which produced in the research area of Bingöl University in 2017.

Key Words: Sunflower, *Thirips* spp., Population, Bingol

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of *Candidatus* Phytoplasma mali Infection Rates in Adana and Mersin Provinces

Şefika YAVUZ[1*], Mona GAZEL[2], Kadriye ÇAĞLAYAN[2]

[1]Biological Control Research Institute, Adana-TURKEY
[2]University of Mustafa Kemal, Department of Plant Protection, Hatay-TURKEY
*Correponding author: sefika.yavuz@tarim.gov.tr

Abstract

Apple (*Malus domestica* Borkh.) is among the temperate pome fruits that has been important production areas, and grown for many years in our country. According to apple diseases, apple proliferation phytoplasma (*Candidatus* Pyhtoplasma mali), which is located in the quarantine lists and limited the production to economically, causes significant losses. Surveys conducted between the years of 2013-2016 in apple orchards located in and around of Adana and Mersin provinces. 39 orchards and 234 trees were investigated for phytoplasma diseases. DNA isolations, PCR and RFLP (Restriction Fragment Length Polymorphism) analysis were performed. Gel profiles of 14 samples out of 234 tested by PCR/RFLP analysis observed as same as "*Candidatus* Pyhtoplasma mali" positive control. According to this study, the infection rate was determined as 5.98% in all tested samples. The infection rate of "*Ca.* P. mali" in Mersin province was detected as 8.86%, but there is no infection was detected in samples collected from Adana province.

Key Words: Phytoplasma, infection rate, *Canditatus* Phytoplasma mali, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of the Most Important Diseases and Pests in Artichoke Growing Areas in TRNC

Ayşegül ÇOLAK ATEŞ[1*], Hakan FİDAN[2], Deda BÜYÜKÖZTÜRK[1], Ayşe ERK[3]

[1]Biological Control Research Institute, Department of Phytopatholoy, Adana-TURKEY
[2]Akdeniz University Agricultural Faculty, Department of Plant Protection, Antalya-TURKEY
[3]Agriculture Research Institute, Department of Plant Protection, NORTHERN CYPRUS
*Corresponding author: aysegulcolak@hotmail.com

Abstract

In the Turkish Republic of Northern Cyprus (TRNC), an important export product after potatoes and citrus is artichoke. Due to the fact that climatic conditions are very suitable for artichoke cultivation in the country, artichoke production area reached 5.622 da and were obtained 12 tons of products in 2016. 66% of the Atrichoke production takes place in the Gazimağusa region and this followed by 15% of Güzelyurt region, 11 % of Iskele region and 8% of Lefkoşa region. Some plant disease and pests that restrict artichoke cultivation decrease the market value as well as the advantages that early in production have given.
During the years 2011-2015, White rot disease **(***Sclerotinia sclerotiorum***)** was determined from the most common fungal diseases in simptomatological and morphological analyzes in 32 location cultivated artichoke plants. The most intense *Artichoke latent Potyviru*s from viral agents has been identified in simptomatological and molecular determinations in artichoke fields. All of the artichoke production areas were determined to have snail damage on the artichoke leaves and fruit. It was determined that snail samples belonged to *Helix* spp., *Helicella* spp. and *Eobania* spp. species in the diagnoses made from snail samples. The results of this study are important in determining the effective method of combating artichoke production and quality in the region.

Key Words: Artichoke, plant disease and pest

Acknowledgements: This work is part of the project named "Determination of Disease, Pest and Weeds for the Principles of Quarantine and Certification in the Turkish Republic of Northern Cyprus".

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Identification of White Rot and the Most Common Virus Diseases in Lettuce Growing in Eastern Mediterranean Region

Ayşegül ÇOLAK ATEŞ[1*], Hakan FİDAN[2]

[1]Biological Control Research Institute, Department of Phytopatholoy, Adana-TURKEY
[2]Akdeniz University Agricultural Faculty, Department of Plant Protection, Antalya-TURKEY
*Corresponding author: aysegulcolak@hotmail.com

Abstract

Vegetables, sources of macro and micro nutrients such as carbonhydrate, fat, protein, vitamin and minerals are important for human nutrition. Plant diseases, which cause significant problems in lettuce fields, also limit the production value of the crop as well as the production. It is important to determine the correct diagnosis and prevalence rates of the factors that are effective in control these diseases that cause loss of crops in lettuce.
The study was carried out in 6969 da area and 70 fields, where lettuce grown in the provinces of Adana, Mersin, Osmaniye, Maraş and Hatay in 2014-2016. Lettuce is a study carried out in terms of fungal pathogens in growing areas; in Karataş province of Adana 25 da of the lettuce area was 3.3%; in 40 da of the lettuce area of Tarsus-Avadan village was 10.6%; in 400 da of the lettuce area of Osmaniye province was 4.6%, was found to be contaminated with *Sclerotinia sclerotiorum* causing White rot disease. In terms of viral agents, three viral diseases in the region were found in *Lettuce mosaic potyvirus* (LMV), *Miraflori lettuce big vein virus* (MiLBVV), *Tomato spotted wiltt tospovirus* (TSWV) in lettuce plants. *Lettuce mosaic potyvirus* (LMV) was identified as the most common viral disease in 21 samples from lettuce fields with 43.8%. LMV virus, which is most commonly found in lettuce, is obtained from the highest lettuce production areas in Mersin and followed by Adana, Hatay, K. Maraş and Osmaniye.

Key Words: Lecttuce, *Sclerotinia sclerotiorum*, *Lettuce mosaic potyvirus*

Acknowledgements: This study was supported by General Directorate of Agricultural Research and Policies, project number TAGEM-BS-15/09-10/02-08 (04).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Rare and Economically Important Species in Terms of Terrestrial Heteroptera Biodiversity in Southeastern Anatolia, Turkey

İnanç ÖZGEN[1*], Celalettin GÖZÜAÇIK[2], Barış ÇERÇİ[3]

[1] Fırat University, Engineering Faculty, Bioengineering Department, Elazığ-TURKEY
[2] Iğdır University, Agricultural Faculty, Plant Protection Department, Iğdır-TURKEY
[3]Köknar 4, Tarçın Sokak, Koru Mahallesi, Ardıçlı Evler, Esenyurt, İstanbul-TURKEY
*Corresponding author: inancozgen@gmail.com.

Abstract

In this study was carried out in Diyarbakır, Mardin and Şırnak during 2009-2017 years. In this study; a total of 8 species belonging to 4 families in 3 different provinces were recorded. The samples were made by sweep net method. In this study; Belonging to the family of Miridae; *Macrotylus weberi* Wagner, 1976, *Camponotidea fieberi* (Reuter, 1879) and *Notostira erratica* (Linnaeus, 1758), *Plinthisus longicollis* Fieber, 1861 and *Megalonotus colon* (Puton, 1874) from the Lygaeidae family, *Odontotarsus impictus* Jakovlev, 1886 species from the Scutelleridae family in Diyarbakir province, *Eurydema putoni* from the Pentatomidae family from the province of Mardin, *Peritrechus rhomboidalis* Puton,1877 from the Lygaeidae family from Şırnak province. From these species; Although *M. weberi* was reported to be an endemic and rare species in Nevşehir and Usak provinces, But; it has been found that this work also involves the fauna of Southeastern Anatolia. The *M. colon* species obtained by the study are in wide spread but rare species in our country. In case of *P. longicollis* and *N. erratica* species; *P. rhomboidalis* was also determined in the Southeastern Anatolia Region and Sırnak Province fauna for the first time. In additionally; *O. impictus* and *E. putoni* species; The monitoring of feeding behavior in cereal and vegetable fields in the Southeastern Anatolia region is important for economic entomology.

Key Words*:* Heteroptera, Southeastern Anatolia Region, Rarely, Economically, Biodiversity

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Species Composition and Inoculation Success of Mycorrhizal Genus *Glomus* spp. on Kiwi (*Actinidia deliciosa* Liang et Ferguson, 1984) and Use for the Management of *Meloidogyne* spp.

Anıl Fırat FELEK[1*], Faruk AKYAZI[1]

[1]Department of Plant Protection, Agricultural Faculty, University of Ordu, 52200, Turkey
[*]Corresponding author: anilfelek@hotmail.com

Abstract

Mycorrhizas are important to manipulate the plants in different ways in order to contribute the sustainable life of them in nature. Kiwi is one of the commercial plants in the world and many mycorrhizal studies were carried out on kiwi. The studies can be classified as inoculation success of the plant with mycorrhiza, identification of species or structures for fungi regarding mycorrhizal colonisation and a few studies for the management of *Meloidogyne* spp. The unique mycorrhizal genus to contribute the studies is *Glomus*. This genus is promising with its supports on kiwi plant by breaking dormancy with inoculation, inducing of plant growth, being sustainable during long time and increasing the tolerance of kiwi against *Meloidogyne* spp. In this context, the studies were summarized on the species, *Glomus etunicatum* Becker & Gerd,, *Glomus fasciculatum (*Thaxt.) Gerd. & Trappe. *G. macrocarpum* Tul. & Tul, *G.mosseae* Nicol. & Gerd., *G. monosporum* Gerd. & Trappe, *G. occultum* Walker and some strains of *Glomus* spp. The approach of today's agriculture focuses mainly on enviromental susceptibility beyond the applications based on syntetic formulations. Therefore, the *Glomus* species on kiwi were reviewed for the further studies to be conducted on kiwi and to emphasize the potantial of this mycorhizal genus and dependence level of kiwi to the mycorrhizal relations.

Key Words: *Glomus* spp., *Meloidogyne* spp., Kiwi, *Actinidia deliciosa*, Mycorrhiza

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Interesting Myrmecophil Species Record in the Pistachio Agroekosystem in Turkey: *Amorphocephala coronata* (Germar, 1817) (Coleoptera: Brentidae)

İnanç ÖZGEN[1*], Rostislav BEKCHIEV[2], Halil BOLU[3]

[1]Fırat University, Engineering Faculty, Bioengineering Department, Elazığ-TURKEY
[2]Natural Museum of Natural History, 1 Tsar Osvoboditel Blvd., 1000 Sofia-BULGARIA
[3]Dicle University, Agricultural Faculty, Plant Protection Department, Diyarbakır-TURKEY
*Corresponding author: inancozgen@gmail.com

Abstract

The Survey and population development studyies of *Amorphocephala coronata* were carried out between 2008 to 2009 years in Siirt (Center and Aydınlar) provinces of Turkey. But; The field observation study of this species were conducted in August period in 2016 years at each locations. In the results of working; *Amormomorpha coronata* (Coleoptera: Brentidae) species have been firstly determined to interact with ant some species in Turkey. The species was collected by light traps. *A. coronata* was firstly found in pistachio gardens in this study. In addition, this species is the first record for the Insecta (insect) fauna of the Southeastern Anatolia Region. This report has been written about a new locality record of this species. Moreover; It has been found May-August period in the pistachio orchards. As a result of the study, 126 individuals were collected with total light trapping and the highest population density was determined in the pistachio orchard of Siirt Merkez district. *A. coronata* has a myrmecophil property due to its mutualist life with ants. At the 2016 year, It has found inside *Camponotus* spp ants nests near the pistachio trees habitat. The work to be done in the following years has led to the conclusion that *A. coronata* should be studied in detail to behaviors in its agroecosystem of pistachios orchards.

Key Words*:* Myrmecophilous, *Amorphocephala coronata*, Pistachio, Population development, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

DAPI Staining Technique in Diagnosing Phytoplasmas

Havva GÜMÜŞ[1*], Mehmet Ertuğrul GÜLDÜR[1]

[1]Harran University Faculty of Agriculture, Department of Plant Protection, Şanlıurfa-TURKEY
[*]Corresponding author: gumush199@gmail.com

Abstract

Phytoplasmas, defined by numerous diseases worldwide, are obligate parasites, which are lack of cell walls, and are specific to the phloem of the host. Many plant infections cause symptoms such as yellowing, witches' broom, phyllody, virescence, leaf curling, stunting and general decline. Transmission of phytoplasmas to healthy plants are usually carried out leafhopper, grafting or *Cuscuta* spp. like parasitic plants. Detection of phytoplasma disease in plants occurred with indicator plants in the early days. Techniques based on DAPI and serological methods and techniques based on electron microscopy have provided an alternative approach to the detection of phytoplasmas. Currently, PCR-based techniques are widely used in the detection and identification of phytoplasmas. However, DAPI staining technique can be used as an alternative to these techniques for the detection of increasing phytoplasma diseases. The DAPI preferably binds DNA regions rich in Adenine-Timin so that phytoplasma located between infected phloem cells is observed on a fluorescent microscope. The DAPI technique is a fast, easy, and inexpensive method that can be used without resorting to molecular methods to detect and measure phytoplasma infections in plants. In this study, it was aimed to detect phytoplasmas by DAPI staining technique in plants suspected of being contaminated by phytoplasma.

Key Words*:* Phytoplasma, Preliminary techniques, diagnosis, DAPI staining

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Chemical Composition and Antibacterial Activity of Essential Oils Isolated from Medicinal Plants Against Gall Forming Plant Pathogenic Bacterial Disease Agents

İ. Adem BOZKURT[1*], Soner SOYLU[1,2], Merve KARA[1], E. Mine SOYLU[1,2]

[1]Mustafa Kemal University, Department of Plant Protection, Faculty of Agriculture, Antakya, Hatay-TURKEY
[2]Mustafa Kemal Univ., Centre for Imp. and Research of Plant Health Clinic, Antakya, Hatay-TURKEY
[*]Corresponding author: iabozkurt@mku.edu.tr

Abstract

Essential oils from different medicinal plant species belonging to Lamiaceae, Lauraceae and Apiaceae families such as *Thymbra spicata* var. *spicata* (Tss), *Thymus serpyllum* (Tsrp), *Thymus sipyleus* (Tspy), *Origanum syriacum* (Os), *Origanum majarana* (Om), *Ocimum basilicum* (Ob), *Mentha spicata* (Ms), *Melissa officinalis* (Mo), *Lavandula stoechas* var. *stoechas* (Lss), *Rosmarinus officinalis* (Ro), *Salvia officinalis* (So), *Laurus nobilis* (Ln) and *Foeniculum vulgare* (Fv), were isolated by hydro-distillation. The chemical compositions of essential oils were identified by gas chromatograph/mass spectrometer (GC/MS). Carvacrol for Tss and Os, thymol for Tsrp, geranial for Tspy and Mo, 4-terpineol for Om, linalool for Ob, carvone for Ms, 1,8 cineole for Lss, Ln and Ro, camphor for So and trans-anethole for Fv were identified as the major constituents of the essential oils studied, respectively. The essential oils were tested for their antibacterial activity against the most important gall forming plant pathogenic bacterial disease agents, *Pseudomonas savastanoi* pv. *savastanoi* (Pss), *P. savastanoi* pv. *nerii* (Psn) and *Agrobacterium tumefaciens* (At). Based on inhibition zone diameter values, At and Psn were recorded as the most sensitive and resistant bacterial species against the majority of the tested essential oils, respectively. Plants belong to Lamiaceae family were found to be more efficient than those belong to Lauraceae and Apiaceae families. The essential oils of Tsrp, Tss and, Os showed the highest antibacterial activities against all tested bacterial species. The findings of the present study suggest that essential oils have a potential to be used as antibacterial agents against gall forming bacterial disease agents.

Key Words: Antibacterial, Essential oil, Gall forming bacteria, *Pseudomonas, Agrobacterium*

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Investigation of *in vitro* Antifungal Effects of Essential Oils Against Major Soil-Borne Fungal Disease Agents of Strawberry

Merve KARA[1*], Soner SOYLU[1,2], Şener KURT[1,2], E. Mine SOYLU[1,2]

[1]Mustafa Kemal University, Faculty of Agriculture, Department of Plant Protection, Hatay-TURKEY
[2]Centre for Implementation and Research of Plant Health Clinic, Hatay-TURKEY
*Corresponding author: mervekara@mku.edu.tr

Abstract

In this study, *in vitro* antifungal volatile phase effects of the essential oils, obtained from different plant species such as fennel (*Foeniculum vulgare* Mill.), laurel (*Laurus nobilis* L.) and myrtle (*Myrtus communis* L.) growing in the Eastern Mediterranean Region of Turkey, were investigated against mycelial growth of *Fusarium oxysporum*, *Macrophomina phaseolina* and *Rhizoctonia solani* as major soil-borne fungal pathogens of strawberry. The essential oils at different concentrations showed variable degree of antifungal activities against fungal pathogens. Although all essential oils have a marked antifungal effect against fungal isolates, among the essential oils used in the study, the strongest volatile fungicidal activity was caused by the essential oil of fennel followed by laurel and myrtle essential oils, respectively. Essential oil of fennel completely inhibited mycelial growth at relatively low concentration (5.0 µl/plate concentration at volatile phase). Amongst the fungal disease agents, *R. solani* was found to be highly sensitive and *F. oxysporum* was highly resistant fungal species to essential oils tested. The essential oil of fennel was the most potent inhibitor with EC_{50} values 1.38, 1.92 and 2.68 µl/plate against *M. phaseoli*, *R. solani* and *F. oxysporum*, respectively.
Microscopic observation on pathogen hyphae revealed considerable structural deformations such as cytoplasmic coagulation, vacuolations, hyphal lysis and protoplast leakage in fungal hyphae exposed to essential oils under light microscope. The results indicated that the essential oil of fennel, which exhibited significant antifungal activity, could be used as possible biofungicide alternative to synthetic fungicides against phytopathogenic soil-borne fungal disease agents.

Key Words: Antifungal activity, essential oil, soil-borne fungal pathogens, fennel, laurel, myrtle

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Role of Herbivore Induced Plant Volatiles in Biological Control of Agricultural Pests

Ceyhan SÖNMEZ[1*], Mehmet MAMAY[2]

[1]Harran Univ., Graduate School of Natural and Applied Sciences, Dept. of Plant Protection, Şanlıurfa-TURKEY
[2]Harran University, Agricultural Faculty, Department of Plant Protection, Şanlıurfa-TURKEY
*Corresponding author: bitkikoruma_ceyhan@outlook.com

Abstract

Insects live as beneficial, harmful or neutral in terms of agriculture. Beneficial insects are live as predatory or parasitoid while harmful insects are generally live as herbivore. Several studies carried out shown that herbivores benefit from the organic compounds of plants to find their hosts. Plants have developed a multitude of defense mechanisms against herbivore pest attacks. The volatile organic compound odor is released by plants remaining under herbivore attack. Natural enemies in nature can find the location of their hosts via released this odor. Thus, natural enemies head towards to the right plant at the right time to find their hosts. Therefore, herbivore-induced plant volatiles plays an important role in biological control.

The information to be gained about the mechanisms governing natural enemy behaviors in finding prey is very important for the success of the biological management program. By this means, biological control programs can be developed and optimized. When these odors synthetically produced applied to any area, beneficial insects will be invited to that area.

Scientific studies show that it can be benefitted from herbivore-derived plant smells in order to increase the efficiency of biological control. Synthetically producing these odors were covered by IPM recently. In this way, using the stimulated plant response, the behaviors of natural enemies will be manipulated toincrease the hosts' search, helping them to keep and collect in necessary location. As a result, the possible exploitation of these compoundscan be thought in increasing populations of biological agents and classical biological control in agriculture.

Key Words: Herbivore, Plant volatiles, Natural enemies, Biological control

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A New Faunistic Record of Assassin Bugs at Cotton Field from Turkey: *Ectomocoris caucasicus* (Linnavuori, 1972) and *Ectomocoris ululans* (Rossi, 1970) (Hemiptera: Reduviidae: Peiratinae)

Tarkan AYAZ[1*], İnanç ÖZGEN[2], Paride DIOLI[3], Yusuf KARSAVURAN[4]

[1]Agricultural Quarantine Center, Şırnak-TURKEY
[2]Fırat University, Engineering Faculty, Bioengineering Department, Elazığ-TURKEY
[3]Museo di Storia Naturale Sezione di Entomologia Corso Venezia 55-Milano-ITALIA
[4]Aegean University, Agricultural Faculty, Plant Protection Department, İzmir-TURKEY
*Corresponding author: tarkan.ayaz@tarim.gov.tr

Abstract

The Reduviidae is the largest family of predaceous land Heteroptera containing about 7000 species and subspecies in 913 genera and 25 subfamilies. Most of them are generalist predators. This study has been carried out with the purpose tonew locality record of two Reduviidae species between 2015 and 2016 years from Şırnak province(Turkey). The specimens were mainly collected by light traps. *Ectomocoris caucasicusis* known from South Russia to Central Asia; present in Azerbaijan, Armenia, Georgia, Iran, Iraq. In previously study our country, *E. caucasicus* (Linnavuori, 1972)is recorded only Mardin provinces. In this study; It was found that in Şırnak province. It is second location records for this species in Turkey. *Ectomocoris ululans* (Rossi, 1970) was firstly recorded in Southeastern Anatolia Region of Turkey. *Ectomocoris ululans* was distributed in Adana, Erzurum, Hatay, Mersin and İzmir provinces from Turkey. The Species are found in cotton fields. For this reason, it is believed that the species are related to the pests in the cotton fields. In previous studies; *Ectomocoris* spp. were associated with *Heliothis armigera*, *Spodoptera litura* and *Pectinophora gossypiella* in cotton fields at abroad countries.In this study results were supported to cotton IPM and biological control studies in Turkey.

Key Words: Hemiptera, Reduviidae, *Ectomocoris caucasicus*, *Ectomocoris ululans*, Cotton, Southeastern Anatolia Region, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Contributions on Coleoptera (Insecta) Biodiversity in Cotton Agro-Ecosystem

Tarkan AYAZ[1*], Mehmet KAPLAN[2], İnanç ÖZGEN[3]

[1]Şırnak Agricultural Quarantine Directorate
[2]Diyarbakır Plant Protection Research Institute
[3]Fırat University, Engineering Faculty, Bioengineering Dept, Elazığ
*Corresponding author: tarkanayaz@gmail.com

Abstract

Study worked out in Silopi and Cizre province of Şırnak between 2016-2017. Species were collected using light trap and trap. Thirteen species belonging to 9 families were determined in the study. These species were *Cheirodessardous* Géné, 1839belonging toTenebrionidae; *Drasteriusbimaculatus* (Rossi, 1790) belonging to Elateridae; *Hyperanigrirostris* (Fabricius, 1775) belonging to Curculionidae; *Aphodiusquadrimaculatus* (Linnaeus, 1761),*Hybosorusilligeri* (Reiche, 1853) and*Pleurophorusapicipennis* (Reitter, 1892) belonging to Scarabaeidae; *Philonthuscorruscus* (Gravenhorst, 1802), *Tachyporusnitidulus* (Fabricius, 1781) and*Gabronthusmaritimus* (Motschulsky, 1858) belonging to Staphylinidae; *Anthicusnigritus* (Olivier, 1811) belonging to Anthicidae; *Brachinusbagdatensis* (Pic, 1902) belonging to Carabidae; *Cicindelaasiatica*Audouin&Brulle, 1839 belonging to Ciccindellidae; *Bruchusquadrimaculatus* (Fabricius, 1792) belonging to Bruchidae. Within these species, *H. illigeri, P. corruscus, T. nitidulus, C. asiatica* and*A. nigritus*were firstly determined in insect fauna of Şırnak. The most common species was determined as *D. bimaculatus.* It is needed to do detailed works to clarify the relations of these species with the useful and harmful insects, and weeds within cotton agro-ecosystem.

Key Words*:* Cotton, Coleoptera, Biodiversity

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fusarium Wilt and Ascochyta Blight of Chickpea in Turkey: Current Status and Future Prospects

Hatice POLATBİLEK[1], Feyza Nur KAFADAR[1], Derya İŞLER[1], Ali ÖZKAN[2], Selçuk BAŞBUĞA[1], Necip NALÇACI[1], Kamil SARPKAYA[3], Ayşe ANAY[4], Dürdane MART[5], Sevil GÜNEŞ[1], Ender ÖĞÜT[6], Canan CAN[1*]

[1]University of Gaziantep, Biology Department, Gaziantep-TURKEY
[2]University of Gaziantep, Gastronomy and Culinary Arts Faculty, Gaziantep-TURKEY
[3]Pistachio Research Institute, Gaziantep-TURKEY
[4]Mersin Directorate of Agricultural Quarantine, Mersin-TURKEY
[5]Eastern Mediterranean Agricultural Research Institute, Adana-TURKEY
[6]Antalya Directorate of Agricultural Quarantine, Antalya-TURKEY
*Corresponding author: can@gantep.edu.tr; ayselcan1938@gmail.com

Abstract

Legumes are traditional crop species in Turkey and the grain legumes are cultivated in almost every provinces covering 7.098.000 ha of area in 2016. Among them chickpea and lentils are the main grain legumes that have economic importance. Origin of legume (chickpea, lentil, pea) domestication occurred in the fertile crescent including Southeastern region of Turkey and the co-evolution of Ascochyta complex with *Cicer* spp as model system is well documented. Therefore, Turkey has an important resource for both grain legume diversity and their phytopathogens like *Fusarium* spp. and *Ascochyta* spp. to study plant pathogen interactions.
Yield and cultivation area of chickpea has been decreasing recent years in Turkey. The main reason of this reduction is biotic stress factors generated by *Fusarium oxysporum* fsp *ciceris* (Fusarium wilt) and *Didymella rabiei* (Ascochyta blight) that may cause complete yield loss. Plant breeding efforts against these devastating diseases in chickpea are being conducted in 10 research institutes and 15 universities in Turkey but resistance/tolerance is broken every 4-5 years in chickpea genotypes by *D. rabiei*. Studies conducted to determine population structure of *D. rabiei* revealed that 4 pathotypes and both mating types exist in the chickpea growing areas in Turkey. Fusarium wilt of chickpea is steadily increased especially in the Mediterranean and Aegean regions of Turkey. Yellowing and wilting races of Fusarium wilt exist in chickpea growing areas. In order to breed resistant/tolerant varieties in chickpea against Ascochyta blight and Fusarium wilt, more detailed analyses on population characterization is needed.

Key Words*:* Chickpea, Ascochyta blight, Fusarium wilt

Acknowledgements: This study was supported by Scientific and Technical Research Council of Turkey (TUBİTAK, Project no:113O071) and Gaziantep University research grand.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Determination of Prevalence and Severity of the Septoria Leaf Blotch Disease of Wheat [Zymoseptoria tritici (Desm. Quaedvlieg & Crous)] in Marmara Region

Zühtü POLAT[1*], Vesile URİN[2], Özge HELVACIOĞLU[2]

[1]Atatürk Central Horticultural Research Institute, Yalova-TURKEY
[2]Maize Research Institute, Sakarya-TURKEY
[*]Corresponding author: zuhtu.polat@tarim.gov.tr

Abstract

Wheat (*Triticum* spp.) is one of the most cultivated plants in the world and among the cultured plants in our country. It is high in terms of nutrition and it is the basic nutrient of many countries. The presence and prevalence of septoria leaf blotch, one of the fungal diseases that can cause significant crop losses in wheat, has been investigated in our region. For this aim, in Bursa, Bilecik, Kocaeli and Sakarya where wheat was cultivated in Marmara Region, the prevalence rate and disease severity rate of the disease which was carried out in 2015 were determined in our region. Kocaeli and Sakarya in 2015 in the survey of septoria leaf blotch was not detected. There was an intense strip rust epidemic in the region during the year. A total of 427 decare area surveys were carried out in Nilufer, Karacabey, M. Kemalpaşa and Yenişehir district in Bursa province and the prevalence rate was found to be 12.06% throughout the province. It was the highest district in Karacabey with a prevalence of 18%. Disease severity rate ranged from 2-47% in the district. Surveys conducted on a total of 96 decare area in Bilecik city center and Osmaneli District revealed a rate of 2.7% prevalence and 13% disease severity rate.

Key Words*:* Wheat, Zymoseptoria tritici, Disease prevalence, Marmara region, Turkey

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Pepper Grown into Open Fields in Eastern Mediterranean Region

Pelin KELEŞ ÖZTÜRK[1*], Saadettin BALOĞLU[2]

[1]Biological Control Research Institute, Adana/TURKEY
[2]Cukurova University The Faculty of Agriculture Department of Plant Protection, Adana/TURKEY
*Corresponding author: pkelesoz@hotmail.com

Abstract

Cucumber mosaic virus-CMV is distributed worldwide that has broad host range and causes significant loss of crops in many vegetable species, ornamental plants and leguminous crops. In this study, a survey study was carried out in open pepper grown areas and pepper samples showing virus symptoms were collected in the Eastern Mediterranean Region covering the provinces of Adana, Hatay, Kahramanmaras, Mersin and Osmaniye in 2014-2015. In the collected samples, the CMV was detected by Double Antibody Sandwich Enzyme-Linked Immunosorbent Assay (DAS-ELISA) and Reverse Transcription Polymerase Chain Reaction (RT-PCR) methods and its prevalence was determined. A total of 1225 samples of pepper plants were collected from Adana, Hatay, Kahramanmaras, Mersin and Osmaniye provinces and 414 of these samples were found to be infected with CMV. According to the results of the study, occurrence ratio of CMV in Adana, Hatay, Kahramanmaras, Mersin and Osmaniye was 25.5%, 28.5%, 43.1%, 23.7% and 47.6%, respectively.

Key Words: Pepper, *Cucumber mosaic virus*, East Mediterranean

Acknowledgements: This study was funded by The Scientific and Technological Research Council of Turkey (TUBITAK-1001 project no: 213 O 101).

Soil Science and Plant Nutrition Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effect of Nitrogen Fertilizer to Yield of Pomegranate (*Punica granatum* L.) on Harran Plain Conditions

Abdullah ŞAKAK[1*], Hatice KARA[1], A. Suat NACAR[1], Sadık YETİM[2], Tali MONİS[1], Abdulkadir SÜRÜCÜ[3]

[1]GAP Agricultural Research Institute, Şanlıurfa-TURKEY
[2]Şanlıurfa Provincial Coordinator of Agriculture and Rural Development Support Inst., Şanlıurfa-TURKEY
[3]Harran University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Şanlıurfa-TURKEY
*Corresponding author: asakak63@hotmail.com

Abstract

This research was carried out at the Koruklu Talat Demirören Research Station in the conditions of Harran Plain between the years of 2012-2016 with the aim of investigating the effect of the pomegranate nitrogenous fertilizer doses on the physical and chemical properties of the soil.
The experiment was set up to be 3 repetitions according to the design of random blocks design. Chemical nitrogenous fertilizer doses (0, 150, 300, 450 and 600 g N tree^{-1}) were used.
Increasing the amounts of nitrogen fertilizer application in the experiment caused increases in pomegranate yields in every five trial years. The highest average pomegranate yield was obtained from N_3 applied to 450 g tree^{-1} nitrogen in 2016, which is the 5th year of the experiment with 133.80 kg tree^{-1}. The lowest average pomegranate yield was 23,22 kg tree^{-1} with the first year In 2012, 600 g of tree^{-1} nitrogen was obtained from N_4 applied to nitrogen. The highest yield of pomegranate was obtained from 450 grams of tree^{-1} nitrogen treated N_3 (99.78 kg of tree^{-1}) and the lowest yield of N_0 (33.82 kg of tree^{-1}) in 5 year average.

Key Words: Harran Plain, Pomegranate, Nitrogenous Fertilizer

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Effects of Different Foliar Zinc Dozes on Phenology, Yield and Some Quality Parameters of Olive

Sibel SÖYLEMEZ[1*], Nesibe Devrim ALMACA[1], Ebru SAKAR[2], Bekir Erol AK[2]

[1]GAP Agricultural Research Institute, Şanlıurfa-TURKEY
[2]Harran University, Faculty of Agriculture, Department of Horticulture, Şanlıurfa-TURKEY
*Corresponding author: sblsylmz@gmail.com

Abstract

Nutrient problems have often occur in our olive gardens because of the both they take place widespread inclined lands and do not have enough maintenance works. Olive trees are more resistant to the negative conditions than the other fruit trees, but in this conditions some problems like decrease of yield and quality may occur. Although, olives are rich plants of poor soil but they are also extremely sensitive to the lack of plant nutrients such as boron, zinc and iron. The aim of this study was to determine the requirement for micro nutrient of Gemlik olive cultivar. In the trial, olive trees were 13 years old and planted 6x6 interval-distance. According to the applications, zinc sulfate ($ZnSO_4.7H_2O$, % 23 Zn) was used as zinc source. Experiment was designed as randomized block design with three replications. Within the scope of this study foliar Zn (0-300-600-900 ppm) was sprayed at different concentrations in 2 periods with 15 days intervals about three weeks before flowering in spring. At the end of the chemical and pomological analysis, it was determined that foliar Zn application did not have an statistically importanat effect on phenology period and yield and quality. but some quality parametrers was found statistically significant and its importance for human nutrition was showed. However, it should not be forgotten that fertilization applications can lead to different conclusions about yield and quality when different ecologies, cultivars, cultural practices, different application, time, and dozes if studied for longer.

Key Words: Sanliurfa, Olive, Zinc, Yield and Quality

Veterinary Medicine Poster Presentations

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Plasma Prolactin Levels According to Lactation Periods and Milk Productivity of Holstein Cows

Sibel BAYIL OĞUZKAN[1*], Ahmet Sarper BOZKURT[2], Sami Serhat TONUS[1], Çağlar ÖÇAL[3], Mahmut ARSLANTÜRK[3]

[1]Department of Medical Services and Techniques, Health Services, Gaziantep University, TURKEY
[2]Department of Plant and Animal Production, Tecnical Services, Gaziantep University, TURKEY
[3]Nurdağı Agriculture and Food Farm, TURKEY
*Corresponding author: bayil@gantep.edu.tr

Abstract

Prolactin (PRL) is a hormone in the polypeptide that is secreted from the pituitary gland in mammals and has many functions in terms of biological activities. One of the most important functions of animal husbandry is the role played in the initiation and maintenance of lactation. In this study, 150 holstein cows that were specialized in milk yield, in 305-day lactation period, aged 2-3 years, 500-550 kg. These animals were divided into 2 groups as 1st lactation and 2nd lactation. Animals in the 1st and the 2nd lactation periods were grouped according to their milk productivity (over 35 lt and under 25 lt). 5 mL blood was taken from the Holstein cows, from vena jugularis with sterile needle into the straight gauge biochemistry tubes. Plasma prolactin levels were studied by enzyme immunoassay and cattle prolactin standards. The levels of prolactin in cows in the second lactation period were higher than those in the first lactation period. Daily milk yield did not lead to significant differences in prolactin levels.

Key Words: Prolactin, Holstein, lactation

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Conjunctival Brucella Vaccine to Serum Protein Profiles and Oxidant/Antioxidant Status in Sheep

Gülay ÇİFTCİ[1*], Filiz KAZAK[2], Özkan YİĞİT[1], Alper ÇİFTCİ[3]

[1]University of Ondokuz Mayıs, Faculty of Veterinary Medicine, Department of Biochemistry, Samsun
[2]University of Mustafa Kemal, Faculty of Veterinary Medicine, Department of Biochemistry, Hatay
[3]University of Ondokuz Mayıs, Faculty of Veterinary Medicine, Department of Microbiology, Samsun
*Corresponding author: gciftci@omu.edu.tr

Abstract

The investigation of the effects of conjunctival *Brucella* vaccine against total protein, albumin, globulin levels, protein profiles and oxidant/antioxidant status (TOS/TAS) in sheep were aimed.
The animal material was consisted of 20 Karakaya sheep which were 5 months old. Trial groups formed which were vaccinated after drawing blood for control groups. The vaccine was administrated with a single dose against *Brucella mellitensis* and after 1 month blood was drawled from Vena jugularis. Total protein, albumin, globuline levels were measured by autoanalyzer. The protein profiles were determined by SDS- and native-PAGE. TOS and TAS levels were detected by using Rel Assay Diagnostics Kits.
The total protein and globulin levels were found as slightly increased ($P>0.05$) in a seropositive sera of vaccinated sheep. There were no important changes in a protein profiles between control and vaccinated animals. However, the density of albumin was slightly decreased and the density of gamma-globulin was slightly increased in vaccinated animals. In vaccinated animals, TAS levels were decreased ($P<0.05$), and TOS levels were slightly increased ($P>0.05$) in vaccinated animals.
In conclusion, conjunctival *Brucella* vaccine was considered to be used as a safe house to protect them from Brucellosis, and after vaccination giving the antioxidants to the animals could be recommended for decreasing the oxidative stress.

Key Words: *Brucella mellitensis*; Conjunctival vaccine; Sheep; Protein profile; Oxidative stress

Acknowledgements: This study was supported by Scientific Research Projects Commission of Ondokuz Mayis University (Project No: PYO.VET.1904.14.002).

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Increte Approach to Diabetic Treatment

Gülay ÇİFTCİ[1*], Ayşenur KIRAN[1]

[1]Ondokuz Mayıs University, Faculty of Veterinary Medicine, Department of Biochemistry, Samsun-TURKEY
*Corresponding author: gciftci@omu.edu.tr

Abstract

It was aimed to put forth the secretion of the incretin hormone and the relation of diabetes in this review. Incretins are hormones secreted by specific cells in the gastrointestinal tract in response to food intake and stimulating to the insulin secretion. It was published that in the early of twentieth century, some intestinal factors related to food intake were secreted and their blood-sugar-lowering effects. These factors were called "incretins". The effect of incretins has been explained by showing that the glucose given orally is more insulin responsive than the glucose given intravenously as the same amount in 1964. Incretins are secreted from the gastrointestinal tract during food intake and connect to receptors in some tissues. The incretin effect is responsible for approximately 60% of the total insulin release after the food intake. Gastric inhibitor polypeptide (GIP) and glucagon-like peptide-1 (GLP-1) are the main incretin hormones responsible for intestinal incretin effect by 20% and 80%, respectively. The incretin hormones are rapidly spread to inactive metabolites by the enzyme dipeptidyl-peptidase IV (DPP-4). In type 2 diabetic patients, insulin secretion contribution via incretin is of little or no.
GLP-1 levels are increased in diabetes, supporting insulin resistance and reducing the amount of free-fatty-acids, suppressing glucagon secretion, and promoting pancreatic β cell proliferation. The native peptide is rapidly degraded by the dipeptidyl peptidase IV (DPP IV) enzyme, but resistant analogues as well as DPP IV inhibitors are still evolving and both approaches have demonstrated bone multiplier efficacy in experimental and clinical studies.

Key Words: Dipeptidyl peptidase IV; Diabetes; Incretin effect

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects on Levels Fur Trace Elements of Wheat Grass in Rat Applied High-Dose Gentamicin

Semih YAŞAR[1*], Leyla MİS[2]

[1]Dept. of Medical Lab. Techniques, Voc. High School of Ozalp, Yuzuncu Yil Univ., Ozalp, Van-TURKEY
[2]Dept. of Physiology, Faculty of Veterinary Medicine, Yuzuncu Yil University, Tuşba, Van-TURKEY
*Corresponding author: yasarsemih@gmail.com

Abstract

This study was aimed to search the effect of wheat grass (BG) on the trace elements in the rat fur applied high-dose gentamicin. Control (C) group was injected physiological saline with i.p. for 7 days; Gentamisin (GM) group, Gentamisin (80 mg/kg/day, Genta 80 mg) was injected with i.p. for 7 days; Wheat Grass (WG) group was given WG extraction (10 ml/kg/day) with orally for 6 weeks; GM+WG group gentamicin (80 mg/kg/day) was injected with i.p. for 7 days and WG extraction (10 ml/kg/day) was given with orally for 6 weeks. At the end of six weeks, fur collected from all the rats. Compared to the control group, there was a statistically significant decrease in Cu and Mn levels, Zn and Na levels in the WG group; A statistically significant decrease in Zn and Na levels in the GM group; There was a statistically significant decrease in Na levels and Cu levels in the GM+WG group. As a result, wheat grass may use of in order to address the lack of copper in fur. Most of the groups analysed trace element levels showed declines compared to the control. It was determined that aplication of wheat grass didn't mitigated for the effects of gentamicin.

Key Words: Fur, gentamicin, trace elements, wheat grass

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Bromelain Supplementation Into the Broiler Rasion on Liver Tissues

Seçkin ÖZKANLAR[1*], Güler YENİCE[2], Cihan GÜR[1], Semin GEDİKLİ[3]

[1]Ataturk University, Faculty of Veterinary Medicine, Department of Biochemistry, Erzurum-TURKEY
[2]Ataturk Univ., Faculty of Vet. Medicine, Dept. of Animal Nutrition and Nutr. Disorders, Erzurum-TURKEY
[3]Ataturk University, Faculty of Veterinary Medicine, Dept. of Histology- Embryology, Erzurum-TURKEY
*Corresponding author: seckinozkanlar@yahoo.com

Abstract

In this study, the effects of Bromelain added to the broiler ration in different doses were investigated on liver tissues. Four groups were constituted as control 0g/kg Bromelain, 0,15g/kg Bromelain, 0,30 g/kg Bromelain and 0,45 g/kg Bromelain. At the end of the study, activities of catalase (CAT) and superoxide dismutase (SOD); levels of malondialdehide (MDA) and glutathione (GSH) and histopathologic analayses were performed in the liver tissues of sacrificed animals. High doses of bromelain added to the ration of the groups increased the levels of MDA, CAT, GSH and decreased the activities of SOD. In histopathological analyses, hepatocyte degeneration, mononuclear cell infiltration, increase of connective tissue around central vein and portal region were determined. As a result, it has been concluded that high doses of Bromelaain suplementation in to rasion may negatively affect liver tissues of broilers.

Key Words: Broiler, Bromelain, Liver

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Usage of PON1 Enzyme Activity in Animal Improvement

Mikail ARSLAN[1], Muberra DEMİR[2], Adem KABASAKAL[1]

[1]Departmant of Veterinary Medicine, Susurluk Vocational High School, Balikesir Univ., Balikesir-TURKEY
[2]Departman of Biology, Institute of Science, Balikesir University, Balikesir-TURKEY
*Corresponding author: Not identified

Abstract

In this study was investigated activities of serum Paraoxonase 1 (PON1) from different cattle breeds namely Holstein, Simmental and Jersey. As research material; a total of 54 cattle were used in 3 different races and 3 different ages. The PON1 enzyme activity towards paraoxon substrate was quantified spectrophotometrically. In the study, it is found that PON1 activity may become a sensitive biomarker that can be used for the assessment of long-therm health risk of cattle exposed to pesticide.

Key Words: PON1, Biomarker, stress.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fattening Performance and Some Slauhghter Characteristics of Charolais Cattle Breed

Mikail ARSLAN[1], Adem KABASAKAL[1], Orhan YILMAZ[2], Hasan ATALAY[3]

[1]Departmant of Veterinary Medicine, Susurluk Vocational High School, Balikesir Univ., Balikesir-TURKEY
[2]Department of Animal Science, Faculty of Veterinary Science, Van Yuzuncu Yil University, Van-TURKEY
[3]Dept. of Animal Nutrition and Nutr. Diseases, Faculty of Vet. Medicine, Balıkesir Univ., Balıkesir-TURKEY
*Corresponding author: Not identified

Abstract

The study was carried out to investigate fattening and some slaughter traits of young Charolais bulls imported for Turkey's meet need in short time. The study carried out at cattle farm of Dort Mevsim Meat Integrated Facility in Boğaz village, Susurluk district, Balikesir province, Turkey. 67 Charolais bulls were imported at 9-10 months age, were subjected to fattening for 237 days, and slaughter were determined according to market conditions. The initial fattening weight, slaughter weight, hot carcass weight, chilling carcass weigt, hot dressing percentage, chilling dressing persentage and daily weight gain were 341.4kg, 681.5 kg, 397.0 kg, 384.7 kg, 58.20 %, 56.39% and 1.447 kg respectively. The results of the study suggested that Charolais cattle can be used beef production for Turkey's meet need in short time.

Key Words: Fattening performance, Charolais bulls, slaughter traits

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Chemical Sterilization in Domestic Animals

Alper BAŞA[1*], İbrahim CANPOLAT[1]

[1]Department of Surgery, Faculty of Veterinary Medicine, Firat University, Elazig-TURKEY
*Corresponding author: alper_basa32@hotmail.com

Abstract

Sterilization of animals dates back to 7000 BC. Sterilization or castration of domestic animals has been applied for centuries to control the number of animals, genetic selection, tranquillity of aggressive animals and, most importantly, to ensure the production of high quality meat from human needs. An ideal castration should be in such a way that it will require permanent, low-cost treatment, block spermatogenesis and androgenetic and not affect animal welfare levels. The main methods of castration are operative castration, hormonal castration and chemical castration. Chemical sterilization or castration has found application area for male monkeys, goats, bulls, hamsters, rabbits and dogs. Calcium chloride, lactic acid, sodium chloride, chlorhexidine, formalin, zinc tannate, zinc gluconate, glycerol, glucose, ethanol, silver nitrate are commonly used in chemical castration. After intratesticular application, destruction in seminifer tubules and leydig cells, decrease in testosterone and sperm production, atrophy in testicles is observed. In this review, the methods of chemical castration were mentioned in domestic animals.

Key Words: Domestic animal, Chemical Castration, Sterilization, Sperm, Testicle,

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Dystocia due to Ascites in an İvesi Sheep

Tuğra AKKUŞ[1*], Abuzer Kafar ZONTURLU[1], Ömer KORKMAZ[1], Birten EMRE[1]

[1]Harran University Veterinary Faculty, Department of Gynecology and Obstetrics, Şanlıurfa-TURKEY
*Corresponding author: tugraakkus08@hotmail.com

Abstract

In this case, a 3-year-old, 40 kg-weighted Ivesi-race female sheep was brought to our clinic with the complaint of obstructed labour during birth. It was noted that the patient's history had given birth twice previously, fetal fluids were ruptured 12 hours ago, and that there was no appearance of the offspring despite efforts of the mother. Body temperature was 39.5 °C, pulse and breathing were normal. The physical examination revealed that the mammary glands were full and milk secretion was present. Transvaginal examination revealed that the cervix was not completely dilated; dilatation was two fingers width and no abnormal smell was detected. For the purpose of treatment, Cesarean section was performed with an inverted "L" block anesthesia in the left paralumbar fossa. After uterine incision, the fetus close to the birth canal was removed, a noticeable ascites was seen and the fetus was dead. Later, another fetus was identified in the cranial cavity of the uterus. The fetus was delivered, there was no anomaly formation, and it was alive. No complications were observed in the follow up performed one week after the operation, and it was told that the live fetus was healthy. As a result, we successfully performed a treatment with a cesarean operation in a twin-pregnant ewe that was brought to our clinic due to difficult birth. Early intervention and appropriate surgical approach have been performed without any complication in a case with pregnancy pathology that had a high risk of mortality.

Key Words: Ascites, twin pregnancy, sheep

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Molecular Characterisation of Giardia Duodenalis in Diarrhoeic Pre-Weaned Goat Kids in Diyarbakır, Southeastern Anatolia City, Turkey

Duygu Neval SAYIN İPEK[1*], Polat İPEK[2]

[1]Department of Parasitology, Dicle University Faculty of Veterinary Medicine, Diyarbakır-TURKEY
[2]GAP Internatıonal Agrıcultural Research And Traınıng Center, Diyarbakır-TURKEY
*Corresponding author: dneval.sayinipek@dicle.edu.tr, dnsayin@hotmail.com

Abstract

Giardia duodenalis is common enteropathogenic protozoan which cause mainly diarrhea in humans and animals, including livestock. The main route of infection is fecal-oral transmission via contaminated food and water. The most common clinical symptoms associated with G. duodenalis are the excretion of malodorous diarrhoea, weight loss and a failure to thrive, often resulting in significant production losses and sometimes death. The present study genetically characterized, for the first time, Giardia from goats in this country to assess whether they harbour genotypes with the potential to infect humans. From February 2016 to March 2016, a total of 112 faecal samples were collected from the rectum of diarrhoeic goat kids less than one month of age (2-4 week). To confirm the presence of Giardia cytsts, the commercially available Crypto/Giardia-Cel FITC Staining Kit was used. For molecular characterisation, total DNA extractions were conducted with the direction of suggestion of kit by using ZR Fecal DNA MiniPrep kit. DNA extracts were subjected to a nested PCR protocol to amplify a fragment of the SSU-rDNA gene of Giardia (130 bp). The secondary PCR products were sequenced on an automated sequencer. Microscopic analysis of 112 diarrhoeic faecal samples revealed the presence of Giardia cytsts in 32 (28.57%) samples. According to BLAST analysis (NCBI GenBank data-base), sequence analysis all SSU-rDNA were identified as assemblage E.

Key Words: Giardia duodenalis; Diarrhoeic goat kids; Diyarbakır; SSU-rDNA

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Bilateral Anophthalmia in a Simental Calf

Semih ALTAN[1*], Fahrettin ALKAN[2]

[1]Department of Surgery, Faculty of Veterinary Medicine, Dicle University, 21280 Diyarbakir-TURKEY
[2]Department of Surgery, Faculty of Veterinary Medicine, Selçuk University, 42030 Konya-TURKEY
*Corresponding author: semih.altan@dicle.edu.tr

Abstract

Anophthalmia or congenital absence of the eyes in calves have been reported occasionally. In this anomaly, the appearance of the eyes is variable. In most cases, the eyelids are closed and the eyeballs are not visible. Besides anophthalmia, anomalies of other organs, particularly caudal vertabral defects can be seen. The purpose of this study is to describe bilateral anophthalmia in a 4-days old Simmental calf. The calf was brought to surgery clinic complaints with closed of eyelids. Clinical examination was performed on the calf and it was found that the calf did not have eyeballs bilaterally. Eyelids completely were closed and undersized. The right palpebral fissure was 1,8 cm long and left one was rudimentary. In addition, there was narrowing on left nasal orifice. In clinical examination of the caudal region of the calf, tail was very short and, there was observed caudal vertebral defect as radiologically. Right eyelid could not be opened with surgery. For this reason, necropsy was suggested but the owner wasn't accepted. Briefly, such congenital anomalies that cannot be treated are rarely seen in calves and these cause economic losses due to generally result in death.

Key Words: Anophthalmia, Calf, Congenital Anomaly

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Antimicrobial Drugs Preferred in Respiratory System Infections in Diyarbakır and Malatya

Feray ALTAN[1*]

[1]Univ. of Dicle, Faculty of Vet. Medicine, Department of Pharmacology and Toxicology, Diyarbakir-TURKEY
*Corresponding author: feray.altan@dicle.edu.tr

Abstract

The increase in the prevalence of antimicrobial resistance has resulted in restrict of veterinary antimicrobial drug use. The aim of this study was to characterise antimicrobial drugs preferred clinician veterinarians in respiratory system infections which are thought to be related to Mycoplasma and Pasteurella in ruminants. Six questions to evaluate antimicrobial prescribing habits was sent to 40 clinicians. Data were derived from 40 veterinary clinicians who agreed to participate in six-question study on veterinary clinics working on cattle in Diyarbakır and Malatya provinces. Respondents were asked if they would prescribe antimicrobials to animals described in Mycoplasma and Pasteurella, and, if so, to provide details of the prescription. When all the data are evaluated, it is seen that the macrolide group is the most preferred group for both Mycoplasma and Pasteurella infections. It has, however, been found that it has been used extensively in oxytetracycline preparations. According to these results, it was seen that the majority of patients who did not differ in drug preferences in different cities or in the same city in respiratory system diseases preferred medication according to the indications.

Key Words: antimicrobial drugs; respiratory infections; preferred drugs

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Fattening Performance and Some Slauhghter Characteristics of Belgium Blue Cattle Breed

Mikail ARSLAN[1], Adem KABASAKAL[1], Orhan YILMAZ[2], Hasan ATALAY[3]

[1]Susurluk Vocational High School, Balıkesir University, Balıkesir-TURKEY
[2]Department of Animal Science, Faculty of Veterinary Medicine, Van Yüzüncü Yıl University, Van-TURKEY
[3]Dept. of Animal Nutrition and Nutr. Diseases, Faculty of Vet. Med., Balıkesir University, Balıkesir-TURKEY
*Corresponding author: Not identified

Abstract

The study was carried out to investigate fattening and some slaughter traits of young Belgium Blue bulls imported for Turkey's meet need in short time. The study carried out at cattle farm of Dort Mevsim Meat Integrated Facility in Boğaz village, Susurluk district, Balikesir province, Turkey. 62 Belgium Blue bulls were imported at 9-10 months age, were subjected to fattening for 229 days, and slaughter were determined according to market conditions. The initial fattening weight, slaughter weight, hot carcass weight, chilling carcass weigt, hot dressing percentage, chilling dressing persentage and daily weight gain were 339.9 kg, 667.3 kg, 380.3 kg, 367.4 kg, 56.97%, 55.04% and 1.437 kg respectively. The results of the study suggested that Belgian Blue cattle can be used beef production for Turkey's meet need in short time.

Key Words: Fattening performance, Belgium Blue bulls, slaughter traits

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Intratesticular Administration of Zolazepam-Tiletamine Combination Produces Effective Sedation in Cats

Latif Emrah YANMAZ[1*], Sıtkıcan OKUR[1], Elif DOĞAN[1], Uğur ERSÖZ[1], Mümin Gökhan ŞENOCAK[1], Zafer OKUMUŞ[1]

[1]Department of Surgery, Faculty of Veterinary Medicine, Atatürk University, Erzurum-TURKEY
*Corresponding author: emrah.yanmaz@atauni.edu.tr

Abstract

Castration in cats is a common elective surgical procedure that is routinely performed to reduce the incidences of prostatic diseases and testicular tumours. However, no specific anaesthetic method for this surgical intervention exists. This experiment was conducted to evaluate zolazepam-tiletamine (ZT) combination via the intratesticular route for castration in cats. Healthy mixed-breed cats (n=8; 1.2±0.2 years old; 3.54±0.4 kg) were anaesthetized by injection of 10 mg/kg ZT combination into the parenchyma of left testis. Following the induction of anaesthesia, routine castration procedure was performed. The left testis was removed prior to the right one to prevent further absorption of the ZT combination. The pulse rate, peripheral capillary oxygen saturation, respiratory frequency, and rectal temperature were measured by a "veterinary vital signs monitor". The length of anaesthesia (the time from lateral recumbency to the time of first head movement) was 35±3.56 minutes. Recovery (the time from the first head movement to the time for standing on its own) was 50±4.20 minutes. No anaesthetic complication was noted and successful recovery was observed. In conclusion, intratesticular administration of 10 mg/kg the ZT combination provided 30 minutes sedation without any anaesthetic complication and can be suggested for castration in cats.

Key Words: castration, cat, intratesticular, zolazepam, tiletamine

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Different Administration Routes of Zolazepam-Tiletamine Combinatıon in Cats

Latif Emrah YANMAZ[1], Elif DOĞAN[1], Sıtkıcan OKUR[1], Uğur ERSOZ[1], Zafer OKUMUŞ[1]

[1]Department of Surgery, Faculty of Veterinary Medicine, Atatürk University, Erzurum-TURKEY
*Corresponding author: emrah.yanmaz@atauni.edu.tr

Abstract

Zolazepam-tiletamine (ZT) combination has been widely used for wild animal restraints, and short time procedures in cats. This study was aimed to determine the different routes of ZT administration on some anaesthetic parameters. Twenty-four mixed-breed cats aged 1 year (mean weight 3.45 ± 0.7 kg) were used in this study. Animals were randomly divided into three groups; Intranasal (IN), Intramuscular (IM), Intratesticular (IT) administrations each has 8 animals. In all groups, anaesthesia was achieved with 10 mg/kg administration of ZT combination. For IN administration, ZT was administered equally into the medial wall of each nasal cavity. For IM administration, ZT was injected into the quadriceps femoris muscle. For IT administration, ZT was injected into the left testis. The pulse rate, peripheral capillary oxygen saturation, respiratory frequency, rectal temperature was measured by a veterinary vital signs monitor. All measurements were recorded immediately before administration (T0; baseline) and at 5, 10, 15, 20, 30 min after administration of ZT. The administration route of ZT had no effect on pulse rate, peripheral capillary oxygen saturation, respiratory frequency and rectal temperature. ZT had no effect on onset of sedation and length of surgical anaesthesia in cats, when administered by IM or IN or IT routes. However, IT administration of ZT decreased the recovery time in cats compared to IN or IM administration. In conclusion, IN or IT administration of ZT combination could be used in cats for anaesthesia.

Key Words: cat, intramuscular, intranasal, intratesticular, zolazepam, tiletamine

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

A Macroanatomical Study of Front Legs Arteries in Hasak Sheeps

Hülya KARA[1*], Zekeriya ÖZÜDOĞRU[1], Derviş ÖZDEMİR[1], Hülya BALKAYA[1]

[1]Department of Anatomy, Faculty of Veterinary Medicine, Ataturk University, Erzurum-TURKEY
*Corresponding author: h.goktas@atauni.edu.tr

Abstract

Hasak which is trihybridised with German Black Head, Hampshire and Akkaraman is an sheep race. Arterial feeding of the front legs is provided by a. axillaris which is a part of right and left a. subclavia and is located between chest cavity and m. teres major. In this study, it was aimed to investigate the morphological structure of the front legs' arteries in Hasak Sheep. In the present study 8 Hasak Sheeps were used that they were bought from Konya Bahri Dağdaş International Agriculture Institute. Anesthetized animals' the arteria carotid communis were cut and the blood was drained off. Their body cavities were opened. The front legs were obtained and fixed in 10% formaldehyde solution. And then the arteries were examined. It was determined that a. brachialis was a part of a. axillaris between collum radii and m. teres major's beam and then it was rename as a. mediana. A. mediana ended after separating the branches in different regions of the antebrachium. It was observed that the the thickest branch of a. axillaris was a. subscapularis. In conclusion; in this race it was found that the formation of front legs' arteries are similar to each other and with many sheep races, it was also found that there were some differences in terms of the course of some branches of these arteries.

Key Words: Hasak, Sheep, Front Leg, Artery

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Distribution of CD8- and CD-68 positive cells in Corneal Acidic Burn of Rabbits

Semih ALTAN[1*], Hakan SAĞSÖZ[2], Berna Güney SARUHAN[2], Feray ALTAN[3], Zeki OĞURTAN[4]

[1]Department of Surgery, Faculty of Veterinary Medicine, Dicle University, 21280 Diyarbakır-TURKEY
[2]Department of Histology and Embryology, Faculty of Vet. Medicine, Dicle University, Diyarbakir-TURKEY
[3]Dept. of Pharmacology and Toxicology, Faculty of Vet. Medicine, Dicle University, Diyarbakir-TURKEY
[4]Department of Surgery, Faculty of Veterinary Medicine, Selçuk University, Konya-TURKEY
*Corresponding author: semih.altan@dicle.edu.tr

Abstract

Acids are generally less harmful than alkali substances. They cause damage by denaturing and precipitating proteins in the tissues where they contact. The coagulated proteins act as a barrier to prevent further penetration. The one exception to this is hydrofluoric acid (HFA), where the fluoride ion rapidly penetrates the thickness of the cornea and causes significant anterior segment destruction. Hydrofluoric acid is associated with chronic, severe inflammation of the ocular surface. The purpose of this study is to examine the localization and distribution of CD8- and CD68- positive cells in cornea burned with hydrofluoric acid in the rabbit. For this purpose, 36 mature male New Zealand rabbits were used. Under general anesthesia, after a corneal burn was formed by hydrofluoric acid, drug treatments of DMSO, indomethacin and DMSO+indomethacin were performed. The animals were euthanized on the 2nd, 7th and 14th days of the experiment and each cornea was fixed in 10% neutral formalin. There was no difference among the DMSO, indomethacin and DMSO+indomethacin groups in terms of CD8 and CD68 expression. But, there were differences between the days of application. On the 2nd and 7th days of experiments, the number of CD8- and CD68-positive cells in the corneal stroma were increased. Because inflammation decreased in 14 days, the numbers of CD8- and CD68-positive cells were decreased in all groups. In conclusion, these findings indicate that there is no difference between the groups and CD8- and CD68- positive cells were increased during the inflammation period.

Key Words: Acidic burn, cornea, CD8, macrophage, rabbit

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Methicillin Resistance *Staphylococcus aureus*: A Foodborne Pathogen?

Belgin SIRIKEN[1*], Gökhan İNAT[2], Alper ÇİFTCİ[3]

[1]Dept. of Aquatic Animal Diseases, Faculty of Vet. Medicine, Ondokuz Mayıs University, Samsun-TURKEY
[2]Dept. of Food Hygiene and Technology, Faculty of Vet. Medicine, Ondokuz Mayıs Univ., Samsun-TURKEY
[3]Department of Microbiology, Faculty of Veterinary Medicine, Ondokuz Mayıs University, Samsun-TURKEY
*Corresponding author: bsiriken@omu.edu.tr; bsiriken@yahoo.com

Abstract

Generally, staphylococcal infections are treated with penicillin. However, over the years, these pathogens have developed resistance to penicillin associated with production of ß-lactamase. Methicillin was developed to counteract this resistance mechanism; however, methicillin-resistant *Staphylococcus aureus* (MRSA) strains have appeared which have phenotypic resistance to methicillin and related ß-lactam antibiotics. Methicillin resistance (MR) in *S. aureus* is primarily mediated by overproduction of the penicillin-binding protein (PBP) 2a, an altered PBP with extremely low affinities for ß-lactam antibiotics. The *mec*A gene encodes a form of PBP2a that is not present in susceptible isolates. Today, MRSA is among the most important causes of antimicrobial-resistant health care– associated infections worldwide. The reasons because (i) it can become resistant to antibiotics more easily than can other microorganisms, (ii) it acquires resistance to single antibiotics and to entire groups of antibiotics, (iii) the Panton-Valentine leukocidin toxin is an important virulence factor in community-acquired MRSA strains, and these strains are generally considered more likely to carry the gene coding for this toxin than are other MRSA strains, and (iv) MRSA infections are among the most important infections in the world because they require long-term inpatient treatment and have a high mortality rate. There have been three types of MRSA; (1) Hospital-Associated (HA-MRSA), (2) Community-Associated MRSA (CA-MRSA) and (3) Livestock-Associated MRSA (LA-MRSA). The widespread and rapid growth in CA-MRSA and LA-MRSA has raised the question as to whether MRSA is indeed a food-borne pathogen. A high prevalence of MRSA has been found in various retail foods worldwide. Therefore, it is true that consumption of foods of animal origin containing MRSA has been recognized as a health hazard since 1994, and many studies have highlighted the public health threat associated with the presence of MRSA in foods.

Key Words: MRSA, animal origin food, public health

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Sensory Quality of Fish Crackers Made from *Luciobarbus esocinus*

Nermin KARATON KUZGUN[1*]

[1]Fisheries Faculty, Munzur University, Tunceli-TURKEY
*Corresponding author: nerminkaraton@hotmail.com

Abstract

In this study, the aim was to study the production of fish crackers with *Luciobarbus esocinus* and to investigate the sensory quality of these crackers. The dough was produced using 20 % fish meat, 1.10 % salt, 1.90 % sugar, 13 % sunflower oil, 1.63 % egg, 0.90 % vinegar, 13 % butter, and 48.47 % flour. The ingredients were stirred until a homogeneous mixture was obtained. The homogeneos mixture was compressed in an extractor and baked. The general acceptability score obtained for the sensory quality by a group of panelists was high (4.50±0.47).

Key Words: Fish cracker; *Luciobarbus esocinus*; baking; snack food; sensory quality.

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Cytotoxic Potential of Coconut Oil on NIH-3T3 Fibroblast Cells and Its *in vitro* Wound Healing Activity

Taçnur BAYGAR[1*], Tuba BAYGAR[2], Nurdan SARAÇ[3], Aysel UĞUR[4]

[1]Dept. of Seafood Processing Technology, Faculty of Fisheries, Mugla Sitki Kocman Univ., Muğla-TURKEY
[2]Material Research Laboratory, Research Laboratories Center, Mugla Sitki Kocman Univ., Muğla-TURKEY
[3]Department of Biology, Faculty of Science, Mugla Sitki Kocman Univ., Muğla-TURKEY
[4]Section of Medical Microbiology, Dept. of Basic Sciences, Faculty of Dentistry, Gazi Univ., Ankara-TURKEY
*Corresponding author: baygar@mu.edu.tr

Abstract

Coconut oil has many area of use such as skin care, hair care, weight loss, anti-infective drug, improving digestion, and boosting immune system. Its also an aromatic additive for food industry. Nowadays, it is sold in supermarkets for personal use. The MTT-colorimetric monocyte mediated cytotoxicity assay, based upon the ability of living cells to reduce 3- [4, 5-dimethylthiazol-2-yl]-2, 5 diphenyltetrazolium bromide (MTT) into formazan, was evaluated using NIH-3T3 cells and IC50 value was calculated for coconut oil. Wound healing is a complex and dynamic process which depends on cell migration and proliferation. Fibroblasts are the key cells responsible for initiating angiogenesis, epithelialization and collagen formation. Coconut oil in this study was evaluated for its in vitro wound healing effects on the fibroblast cell migration and proliferation using scratch wound assay technique. The results of the present study indicated that the coconut oil may be useful in effective management of wounds.

Key Words: Coconut oil; cytotoxicty; wound healing; fibroblast; cell culture

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

The Effects of Freezing and Thawing Cycles under Different Conditions on the Skin and Meat Color of Seabream

Taçnur BAYGAR[1*], Yunus ALPARSLAN[1], Cansu METIN[1],
Hatice HASANHOCAOĞLU YAPICI[1], Zerrin EKŞI[1]

[1]Dept. of Seafood Processing Technology, Faculty of Fisheries, Mugla Sitki Kocman Univ., Muğla-TURKEY
*Corresponding author: baygar@mu.edu.tr

Abstract

The present study was designed to determine the color changes for skin and meat of aquacultured seabream after freezing and thawing under different conditions. Frozen seabream of 300 ± 50g were thawed in refrigerator (4 °C), in water (15 °C), in microwave (Defrosting mode) and under ambient conditions (22 °C). Some of the frozen seabream were thawed for two times (at 7th and 30th days) and the rest were thawed once (at 30th day). Color measurements were done at 5 different points on skin and meat of the seabream by a digital color measurement system. Lightness (L*) of the fresh seabream skin and meat were 82,06 and 44,59; redness (a*) were --1,48 and -1,88; yellowness (b*) were -0,82 and -3,84, respectively. It was observed that the L* lightness of seabream skin was higher than meat. L* value of the seabream skin decreased; a* value increased towards to green and b* value increased towards to yellow after repeated freezing-thawing processes. b* value of the group that thawed under ambient conditions was higher than the other thawing groups. Freezing and thawing for one cycle had similar color results to the fresh samples. Freezing for 30 days was found to have positive effects on L* value of seabream meat while the a* and b* values were found to be same with skin. It was resulted that thawing more than once caused negative effects on skin and meat color of seabream fillets. The most appropriate thawing methods were found to be in water and in refrigerator.

Key Words: Seabream, Sparus aurata, freezing, thawing, color measurement

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Microbiological and Histological Quality of Ready-to-Cook Meatballs in Erzurum

Sevda URÇAR GELEN[1*], Hayrunnisa ÖZLÜ[2], Semin GEDİKLİ[3], Mustafa ATASEVER[1]

[1]Ataturk University, Department of Food Hygiene and Technology, Erzurum, Turkey
[2]Ataturk University, Department of Nutrition and Dietetics, Erzurum, Turkey
[3]Ataturk University, Department of Histology and Embryology, Erzurum, Turkey
*Corresponding author: surcar@atauni.edu.tr

Abstract

The aim of this study was to determine the microbiological and histological quality of ready-to-cook meatballs purchased from different supermarkets in Erzurum.The study was performed with 20 ready-to-cook meatballs collected from different supermarkets in Erzurum. Water activity and pH values, microbiological and histological characteristics of the meatball samples were evaluated. The average microbial counts of the ready-to-cook meatball samples were determined as; total mesophilic aerobic bacteria 4.59±1.04 log cfu/g, total psychrotrophic aerobic bacteria 4.42±1.22 logcfu/g, coliform bacteria 2.67±1.02 log cfu/g, *Micrococcus*/*Staphylococcus* 4.13±0.90 log cfu/g, *Staphylococcus aureus* 2.60±0.88 log cfu/g, *Lactobacillus* spp. 3.56±0.89 log cfu/g, *Lactococcus* spp. 3.93±0.90 log cfu/g, *Enterobacteriaceae* 2.46±0.97 log cfu/g and yeast-mould 3.69±0.76 log cfu/g. Water activity and pH values of meatball samples were detected in the range of 5.82-8.45 and 0.936-0.988, respectively. Histological analysis showed that 55% of the meatball samples were undesirable tissues such as cartilage tissue, bone tissue, lymph tissue, lung tissue, skin, keratin and hair follicle. It was determined that ready-to-cook meatballs sold in different supermarkets in Erzurum were not suitable microbiological and histological quality in terms of public health.

Key Words: Histology, microbiology, ready-to-cook meatball

1. INTERNATIONAL GAP AGRICULTURE & LIVESTOCK CONGRESS
25-27 April 2018 – Şanlıurfa/TURKEY

Acrylamide in Foods

Meryem AYDEMİR ATASEVER[1*], Hayrunnisa ÖZLÜ[2]

[1]Dept. of Food Hygiene and Technology, Faculty of Veterinary Medicine, AtaturkUniv., Erzurum-TURKEY
[2]Department of Nutrition and Dietetics, Faculty of Health Science, Ataturk University, Erzurum-TURKEY
*Corresponding author: meryematasever@atauni.edu.tr

Abstract

Acrylamide is a chemical substance that is soluble in water, ethanol, methanol, dimethyl ether and acetone, and is insoluble in heptane and benzene. It is a white, crystal structure, odorless and weak acid compound. Acrylamide is used in water treatment, oil, plastic, paint, paper, textile and cosmetic industries. It is a toxic substance that is not found naturally in food, but could be occurs at high temperatures (above 100-120ºC) during processing. The most important factors triggered acrylamide formation are; processing conditions (temperature, time), moisture of the raw material, reducing sugars (e.g. glucose, fructose) and amino acids (e.g, asparagine). Acrylamide occurs during frying, baking, grilling and roasting. Nevertheless, acrylamide formation has not been reported in raw foods, untreated foods at high temperature, boiling, and microwave heating and cooking. Acrylamide in foods can be form from asparagine, oils, some organic acids, or during the maillard reaction. Acrylamide is found mostly in foods such as potatoes, corn chips, bakery products, bread, bread crust, breakfast cereals, biscuits, crackers and toast and rarely in roasted almonds, asparagus, sunflower seeds, soya bean, hazelnut, hazelnut paste, covered peanuts, cakes and cereal.
The International Agency for Research on Cancer (IARC) has classified acrylamide as a Group 2A human carcinogen. The presence of acrylamide was detected by Swedish scientists in heat-treated foods in 2002. Prolonged exposure to acrylamide contaminated water and food could be cause dizziness nausea, vomiting, sweating, weakness in arms and legs, numbness, tingling, speech disorder, hallucinations, abnormal swellings in limb joints, muscle weakness and urinary system disorders.
Consequently, because of the direct relationship between human health and nutrition, it is necessary to be carefully in food consumption. Considering the consumption habits, for healthy life, it is need to determine acrylamide content and to prevent acrylamide formation in foods.

Key Words: Acrylamide, Foods, Carcinogen

UGAP2018

www.ugap.turkiyekongre.com

www.igap.turkiyecongress.com

ugap2018@gmail.com

1ST INTERNATIONAL GAP AGRICULTURE AND LIVESTOCK CONGRESS • 1. ULUSLARARASI GAP TARIM VE HAYVANCILIK KONGRESİ • ŞANLIURFA - TURKEY • ŞANLIURFA

ugap2018@gmail.com

APRIL 25 - 27, 2018

www.ugap.turkiyekongre.com

ÖZET BİLDİRİ KİTABI

ABSTRACT BOOK

ISBN 978-975-7113-64-5