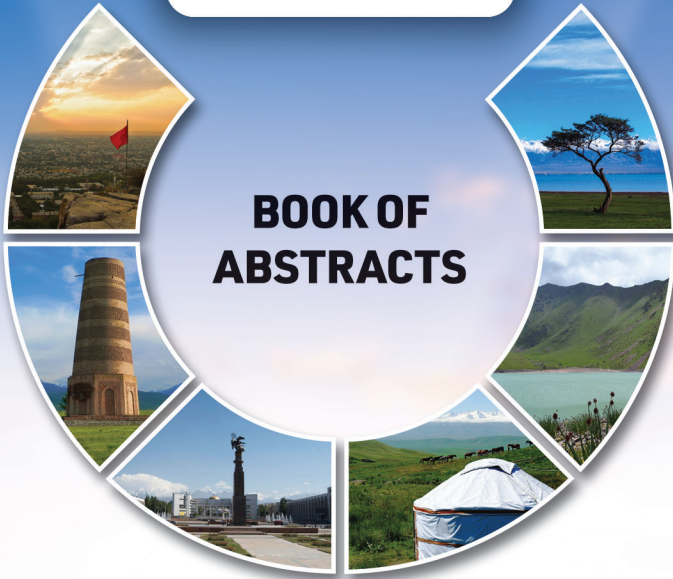




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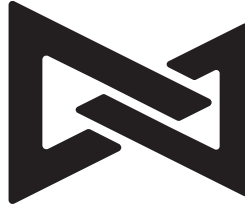


**BOOK OF
ABSTRACTS**

**The Eurasian
Agriculture and Natural Sciences Congress,**
Kyrgyzstan September 20-23, 2017



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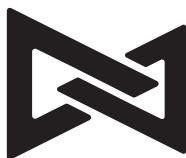
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PREFACE

The necessity of increasing agricultural production due to the rapid growth of the world population, increasing the importance of the solution of environmental problems caused by extreme chemical applications and the importance of new agricultural techniques development is increasing day by day. When increasing of the population and agricultural production need are considered together, the most intensive use of agricultural inputs is seen in underdeveloped or developing countries. Chemical fertilizers, pesticides and other technological developments are at the forefront of agricultural chemicals. This has created hesitations in humans, and people have begun to become conscious, eventually demanding healthy herbal and animal products. Scientists working on agriculture are working hard to overcome these concerns. Sustainable studies about agriculture and livestock and new methods developed from seed to table together with shows that healthy products can be grown. The fact that the farmers who make agricultural production cannot have the right information is also one of the important problems. In this context, the producers should be fully informed of the active participation of the producers and their individual experiences, and the producers should be made aware of the new techniques. As yield increases in plant and animal production, there is a decline in quality. The works about increasing plant and animal production in the coming years is likely to increase again. In addition, improvement of organic agriculture, sustainable agriculture and traditional agriculture practices, increase of environmental sensitivity and achievement of quality besides yield will be among the priority targets. The Eurasian Agriculture and Natural Sciences Congress (20- 23 September 2017) which is organized for discuss current scientific information, share and discuss the results of the completed scientific works, held in Bishkek where is the capital city of Kyrgyzstan hosted by Kyrgyzstan-Turkey Manas University and under the auspices of the Rector of Kyrgyzstan-Turkey Manas University Prof. Dr. Sebahattin BALCI, Deputy of Rector of Kyrgyzstan-Turkey Manas University Prof. Dr. Asilbek KURMIZAYEV, Rector of Selçuk University Prof. Dr. Mustafa ŞAHİN, Rector of Yüzüncü yıl University Prof. Dr. Peyami BATTAL and Rector of Necmettin Erbakan University Prof. Dr. Muzaffer ŞEKER

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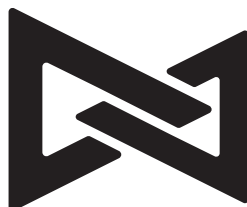


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ORAL PRESENTATION ABSTRACT

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Vegetative and Phenological Characteristics of Promising Walnut (*Juglans regia L.*) Genotypes in Uşak (Turkey) Province

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Abstract:

This study was conducted out to determine genetic variability and select superior walnut types within seedling population between 2015-2017 years in the Uşak province. 53 walnut types were selected according to lateral fruitfulness and late leafing times. The selected 53 genotypes were found to be in the range of 533 m to 1257 m altitude. Estimated ages of genotypes ranged from 15 to 100 years, and trunk diameters ranged from 15 cm to 96 cm. It was determined that the habitats of the trees were vertical (40%) and semi-vertical (38%). In selected walnut types, the percentage of lateral bud fruitfulness was determined between 10% and 90%. The time of leafing in selected walnut types was detected between March 30 and April 15.

Keywords: Genetic resources, Morphological properties, Selection, Walnut

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**SNP Discovery in Olive (*Olea europaea* L.) *****Ahmet İPEK, Meryem İPEK***Uludag University, Faculty of Agriculture, Horticulture Department, Bursa, Turkey**e-mail: maipek@uludag.edu.tr***Abstract:**

Olive is an important fruit species for Mediterranean region and cultivated since ancient times. Molecular markers are important for assessing genetic diversity, cultivar identification and marker assisted breeding. Recently, single nucleotide polymorphism (SNP) markers have become choice of marker type worldwide due its codominant nature, precise location in the genome and presence in the plant genomes in large numbers. We used genotyping by sequencing method based on next generation sequencing to discovery SNP markers in an olive F1 mapping population. We identified a total of 10,941 SNPs and a high-density genetic linkage map for the olive genome was constructed with 5736 SNP markers. This linkage map was composed of 25 linkage groups, covering 3049 cM of the olive genome and this map is the most saturated genetic linkage map in olive to date.

Keywords: GBS, Genetic mapping, Molecular markers, Olive, SNP,

**Acknowledgement:* This work was supported by the Commission of Scientific Research Projects of Uludag University, project number OUAP(Z)-2013/33

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Analysis of Genetic Diversity in Tunceli Garlic

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Abstract:

Tunceli garlic (*A. tuncelianum* ((Kollman) Ozhatay, Matthew & Siraneci)) belongs to genus *Allium* which is classified under Alliaceae family. The species has been proposed as wild ancestor of cultivated garlic because of its morphological similarity to garlic and its mild garlic odor. Tunceli garlic is a wild species endemic to Turkey and it has potential as an alternative food source for domestication and germplasm source for breeding. The purposes of this study were to generate molecular markers for Tunceli garlic genome and analyze genetic diversity among the genotypes. In order to generate molecular markers, garlic expressed sequence tag (EST) sequences were screened and SSR motifs were determined. Primer pairs were designed for SSR motifs and their amplification patterns were tested in both garlic and Tunceli garlic genomes. Fifteen SSR motifs which have good amplification pattern in Tunceli garlic genome were selected and used for genetic diversity analysis among 44 Tunceli garlic genotypes. Genetic relationships among the genotypes were revealed by constructing UPGMA dendrogram with polymorphic markers. The genetic diversity among the genotypes was as low as 0.30 and all genotypes were differentiated from each other with 15 SSR markers. This result demonstrated that 15 SSR markers developed in this study are sufficient to detect genetic variation among Tunceli garlic genotypes and genetic diversity among Tunceli garlic genotypes is high.

Keywords: *Allium tuncelianum*, Breeding, Germplasm, SSR markers,

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

The Selection of Indigenous Almonds to (*P. amygladus*) Midyat and Savur

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Abstract:

This study was carried out between 2012-2014 with the aim of determining late flowering and high-quality genotypes among natural almond population grown in Midyat and Savur (Mardin area). And 97 genotypes were examined in this study. In conclusion, 13 genotypes were determined promising according to weighted rating method. 2013 and 2014 flowering dates of these promising genotypes are march 22-25 and march 13-16, respectively. Shell weight of promising genotypes changed between 3.52 g (47-MRD-28) and 6.70 g (47-MRD-13) and average shell weight was determined 5.08 g. Kernel weight of selected 13 promising almonds changed between 0.80 (47-MRD-28)-1.26 (47-MRD-43) g, kernel rate between % 17.51 (47-MRD-54) – 22.63 (47-MRD-28), skin thickness 2.97 (47-MRD-28)-3.79 (47-MRD-13) mm, double kernel rate between % 0.00-23.00, twin kernel rate was % 0.00 and safe kernel rate between % 60.00 - 100.00. In terms of fruit shape 4 of the genotypes were long and narrow, another 4 genotypes were long and oval and the rest 5 genotypes were heart-shaped. Skin color of 5 genotypes were light, 6 genotypes were medium light colored and 2 genotypes were dark. Although 4 of the promising genotypes were determined large, 4 genotypes medium and 5 genotypes were small, all of them placed in sweet almond category. The kernel color was determined quite light colored in one genotype, medium light colored in 7 genotypes and dark in 5 genotypes. Tree shape was determined broad in 4 genotypes and vertical-broad in 7 genotypes while vertical in 2 genotypes. Flower color was also recorded white in 7 genotypes, pink in 4 genotypes and light pink in 2 genotypes.

Keywords: Almond tree, Genotype; Mardin, Selection

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Determination of The Effects of Bacterial Fertilizer on Yield and Plant Growth Parameters of Tomato

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Abstract:

The use of fertilizers is important in agricultural production. In particular, it was more focus on organic fertilizer that increases yield and quality of crops and is not harmful to environment at the same time. In this study, the effect of bacterial fertilizer on yield and some quality parameters were investigated in two tomato cultivars (*Solanum lycopersicum* L., cv. Cevahir F1 and Pala F1) in greenhouse conditions. Three different concentrations (1, 3, and 5 gL⁻¹ and control (no application)) of two different (*Azotobacter* spp. (1x10⁹), mixed of *Bacillus subtilis* and *Bacillus megatarium* (1x10⁹)) bacterial fertilizer were evaluated in a completely randomized design with 3 replications. The applications were treated after a week of planting of the seedlings. The solutions were given to the root zone of the plant and repeated 3 times at intervals of 10 days. Average fruit weight, fruit number per plant, fruit weight per plant, plant length, fruit width and length, total soluble solid, pH, ascorbic acid, chlorophyll content, dry matter yield and mineral content were evaluated on tomato. The effects of applications were found significant on plant growth parameters. Bacterial fertilization demonstrated that it increased yields and other parameters in all applications. Besides, the effects of applications were significant on mineral content of tomato fruits.

Keywords: Macro and micro elements, Nutrition, Plant development, *Solanum lycopersicum* Yield

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Morphological Characteristics of Some Chestnut (*Castanea sativa* Mill.) Cultivars/Genotypes in The Marmara Region****Cevriye MERT, Arif SOYLU***Uludag University, Faculty of Agriculture, Department of Horticulture, Bursa, Turkey**e-mail: cevmer@uludag.edu.tr***Abstract:**

Chestnut cultivation and production in Turkey has been employed from ungrafted seedling trees and from old plantations which established with selected and grafted local cultivars. Marmara region has the oldest and richest chestnut culture in the country. Many local chestnut cultivars have been developed and grown in this region for centuries. Chestnut fruits consumed as freshly or valued in various ways (e.g. candied chestnut, seeds in syrup, flour production etc.). In the recent years, old plantations have been renewed and many new plantations have been established. In this respect quality cultivar selection studies must be taken into consideration. In this study 15 local cultivars/genotypes have been recorded with respect to their nut qualities, maturity times, and morphological characteristics. As the results of this study the cultivars/genotypes have been divided into 3 groups concerning their maturity time as: early maturing, matured at the middle of the season, and late maturing cultivars/genotypes. The following nut specialties have been recorded: Nut dimensions and weight, shell color and brightness, shell thickness and nut shape. The following seed characteristics have also been recorded: inner color of the seeds, degree of pellicle entrance into the seeds, easiness of peeling of the pellicle etc. The local cultivars/genotypes have been classified as: those have large fruits, and those show high quality specialties.

Keywords: *Castanea sativa*, fruit quality, morphological traits

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Effect of Different Nitrogen Dozes in Cauliflower-Crispy Lettuce Intercropping Systems on Plant Growth and Yield

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Abstract:

This study was conducted to determine the effect of different nitrogen doses in cauliflower-crispy lettuce intercropping on plant growth, yield and Land Equivalent Ratio in Erzurum ecological conditions in 2014-2015. The effects of different nitrogen doses (16, 20 and 24 kg da⁻¹) applications and intercropping cauliflower with crispy lettuce significantly affected plant weight, leaf weight, yield, head weight, head diameter, head height, chlorophyll value (SPAD) and amount of vitamin C. In the experiment, land equivalent ratio value was also calculated as an expression of field use efficiency for intercropping in studies. It has been observed that the yield of cauliflower was significantly affected by different nitrogen level applications, and generally increased with increasing nitrogen level. Cauliflower intercropping with crispy lettuce treatments did not affect negatively plant growth and yield of cauliflower regardless of nitrogen treatments. The land equivalent ratio (LER) values as land use efficiency were more than 1 in intercropping plots. The highest LER values were determined in cauliflower+crispy lettuce treatments when 16 and 20 kg da⁻¹ N was applied. As a result, it has been determined that cauliflower intercropping with crispy lettuce can be more effective than sole cauliflower cropping to utilize and increase the total yield obtained per unit area.

Keywords: Cauliflower, Crispy lettuce, Intercropping Nitrogen, Yield

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Some Physical Properties of Snake Melon (*Cucumis anguria L.*) Seeds

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Abstract:

Some physical properties of snake melon seeds (dry base (d.b.)), the average length, width, thickness, geometric mean diameter, sphericity, true density, bulk density, angle of repose, porosity and terminal velocity) were determined as function of moisture content in the range of 5.05 to 30% (w.b.). The result showed that at the moisture content of 5.05% of snake melon seeds were 10.35 mm, 3.92 mm, 1.57 mm, 3.98 mm, 38.6%, 956.6 kg m⁻³, 526.25 kg m⁻³, 33°, 44.99% and 5.3 m s⁻¹, respectively. By increment of moisture content from 5.05% to 30% d.b, average length, width, thickness, bulk density, true density, sphericity and geometric mean diameter were decrease from 10.35 mm to 10.24 mm, 3.92 mm to 3.81 mm, 1.57 mm to 1.50 mm, 526.25 kg m⁻³ to 478.88 kg m⁻³, 956.6 kg m⁻³ to 932 kg m⁻³, 38.6% to 37.8% and 3.98 mm to 3.86 mm, respectively while terminal velocity, angles of repose and porosity increased from 5.31 m s⁻¹ to 6.08 m s⁻¹, 33° to 37.5° and 44.99% to 48.62%, respectively.

Keywords: Mechanical properties, Physical properties, Snake melon

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Effects of Different Temperature Applications on Mushroom (*Agaricus bisporus* (Lange) Sing.) Yield and Carpophore Properties

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Abstract:

This study has been applied in three different growth chambers and the mycelial growth stages in each room, 85-90% moisture content, temperature values, 22, 24 and 26 °C, carpophore circuit formation of the 80-85% moisture content, temperature values, 16, 18 and performed at 20 °C. Each application is planned to be four replications and each replicate experiment three bags, compost bags was 8 cm in height. A total yield (g), the total number of mushrooms (pieces), the average carpophore weight (g), the average weight of a cap (g), average stalk weight (g), the average cap size (mm), average stalk height (mm) parameters were studied. As a result of statistical analysis of these parameters micellar pre-development stage, the highest values at 26 °C was obtained. The highest values of the initial stage carpophore mushroom yield (g), the number of mushrooms (pieces) and mushroom stalk height (mm) 20 °C application, carpophore weight (g), stalk weight (g), cap thickness (mm) and stem diameter (mm) and 18 °C, and finally the application of the cap weight (g) and the cap diameter (mm) is 16 °C was observed. Temperatures during the pre-development and the formation of micelle interactions carpophore the number of mushrooms and mushroom yield of 26:20 °C, carpophore weight and the weight of a cap 24:18 °C, stalk weight, stalk diameter and thickness of a cap 22:18 °C, a cap diameter 26:16, stalk height 22:20 °C was observed that the application of the highest values.

Keywords: *Agaricus bisporus*, Carpophore, Mushroom, Mycelium

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Viability and Germination Characteristics of *Gypsophila* sp. Seeds Naturally Spreading (Distributing) in Erzurum-Center****Hilal Beyza DURSUN, Fazilet P. KARAGÖZ***Atatürk University, Agriculture Faculty, Department of Horticulture, Erzurum, Turkey**e-mail: f.parlakova@atauni.edu.tr***Abstract:**

Gypsophila species are considered to be one of the most important alternatives to diversification of products in the cutflower sector. Despite the rich plant diversity in Turkey flora, the studies on taxonomic and plant characteristics of naturally grown *Gypsophila* species are insufficient. The study was planned to reveal the viability and germination characteristics of the seeds obtained from the genotypes selected from the natural *Gypsophila* (*Gypsophila* sp.) population in Erzurum-center. According to the results obtained, the average 72.56 % seed viability and germination rate of 46.99 % were determined. The average germination speed, germination index and germination energy of vernalized *Gypsophila* seeds was determined as 2.09 day, 42 days and 53.15 % at the optimum temperature conditions, respectively. 53.15 % of the seeds germinated until the 7th day. These results and germination rate results were parallel to each other. Significant differences in seed viability and germination characteristics were observed among the collected natural populations. It may be possible to use the specie in the ornamental plant industry through the application of breeding and improved growing techniques with the results of our study had the characteristics of pre-study.

Keywords: Germination energy, Germination index, *Gypsophila*, Natural population

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

A Study on Nicotine an Alkaloid in The Family of Solanaceae

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Abstract:

Rapid population growth is accompanied by increasing food demand to ensure adequate and balanced nutrition. The concept of "functional food" has been promoted with increasing public awareness. The functional food properties of vegetables and fruits are determined by their content of secondary metabolites and their proportions. Secondary metabolites may act as anti-carcinogenic, carcinogenic, mutagenic or toxic agents depending on their composition and quantity in plants. Nicotine is a secondary metabolite that exists in varying quantities in *Solanaceae* family of plants. It is a member of the alkaloid family of compounds and a toxic substance, which is also used as insecticide in organic agriculture. Nicotine is found predominantly in tobacco and in much lower quantities in tea and *Solanaceae* family of plants. In accordance with their nicotine content, commonly consumed *Solanaceae* family vegetables are listed as eggplant, potato, tomato and sweet pepper. The nicotine levels in fresh potato, tomato and sweet pepper are below 10 µg/kg while they can increase up to 100 µg/kg in eggplants. Nicotine intake by food ranges between 1.1-1.3 µg/day. 60-70% of the nicotine in the digestive track is metabolized in the liver. Hence, nicotine intake through digestive track is reported not to have as much harmful effects as those induced by nicotine intake through respiratory track.

Keywords: Nicotine, Secondary Metabolite, *Solanaceae*, Tobacco, Eggplant

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Development of New Cherry Varieties Using Different Breeding Methods*

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Abstract:

Turkey is one of the leading sweet cherry producers in the world; however, cherry exports of Turkey have not the desired level. While Turkey is expected to be a leader country in breeding of the cherry cultivars and rootstocks, there are not national cultivars but 0900 Ziraat. This cultivar has good fruit quality parameters (e.g. texture, flavor, color) but its yield is instable in some years. There is a need to develop some new cultivars harvested in different seasons to increase production and also meet consumer demands. The first cherry hybridization and mutation breeding program have been initiated to obtain new cherry cultivars at the beginning of the new Millennium by Atatürk Central Horticultural Research Institute in Yalova-Turkey. In this study, cross breeding method was applied to obtain new self-compatible, good fruit characteristics and yielding cultivars, crossed 0900 Ziraat and self-compatible cultivars (Stella and Sweetheart). Also mutation breeding method was used to obtain higher quality fruit, a compact growth and better yielded cultivars than 0900 Ziraat. Two mutant cherry varieties (Burak and Aldamla) have been registered in the first step. Also good quality new hybrids were obtained from cross breeding program, which were over 27 mm calibration, 9.0-14.1 g fruit weight and self compatible. Using molecular methods and the calibration are our main selection criteria. Selections are still continuing in several cherry types and various new promising types have been selected among them. In addition to, new hybridization studies have been continued according to changing conditions.

Keywords: Cherry, Cultivar, Hybridization, Mutation, Breeding

**Acknowledgement:* This study was funded by General Directorate of Agricultural Research and Policies, Scientific Research Project # TAGEM/BBAD/16/A08/P01/01

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Comparison of Different Harvesting Methods on Walnut (*Juglans regia L.*)

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Abstract:

Among various mechanical applications, mechanical harvesting are essentials for economical and feasible for walnut growing because these applications decrease the labour payment and increased the fruits' quality. For these purpose the needed machines which should be cheaper and easy to use, were introduced from foreign country and or to be made in Turkey. In addition, maintenance, repair and most effectiveness, and also applicability to our orchard conditions must be suitable. So, they can be presented to our walnut growers. The mechanical harvesting machine called trunk shaker machine was introduced. Additionally, the branch shaker apparatus was also purchased which made in Turkey. Some tree properties such as tree crown volume, trunk and crown height, and trunk diameter were recorded in the trial orchard. Fruit removal force was measured using a dynamometer during the harvest time. Walnut fruits were harvested with the trunk and branch shakers and also traditional method. The three types of harvesting methods were compared with respect to their efficiency in harvest facility. After being discussed the results of the study it was decided that trunk shaker machine was more effective than the brunch shaker and it can be recommended to the walnut growers to facilitate the harvesting.

Keywords: Conventional harvest, Limb shaker, Trunk shaker, Walnut,

**Acknowledgement: This study was funded by The Scientific and Technological Research Council of Turkey 106 G 152-107 G 248, Scientific Research Project # 2007-2011*

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Production Systems and Sustainability****Zühal ÖZKAN¹, Musa SEYMEN², Ali KAHRAMAN³**

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Abstract:

World population is expected around 9 billion in 2050 which caused to growing impress on agricultural activities to provide necessity. Green Revaluation developed at the end of twentieth century gave rise to developing new varieties, increase in fertilizer and pesticide usage. Present day, pesticides are main factor to getting better yield and quality. Growing pesticide usage caused to growing concern over the world and thus, several arrangements are realized. These arrangements aim at protection of environment, production by bio-control and non-chemical techniques and sustainability. Consumer demands for non-pesticide residue products are growing and these are increasing in markets day by day. Developing of modern pesticide industry brings progress in rotation, mechanical combat, selection of well adaptable varieties. Today, good agricultural practices, organic farming, sensible farming methods are developed and grow up to provide sustainability, minimizing of pesticide damages while production of genetic modified plants are produced by 18 million farmers in 27 countries and 175 million hectares, approximately. Providing of sustainability in agriculture should take into account; evaluation effects on human and environment for whole stages from soil to dining table, increasing of viewership and control, sensitivity for sanctions. Hereby, the following facts would be realized: For producers; preference for domestic and foreign markets, compete, well yielded and quality products, decrease in production costs, for consumers; reducing of risk in food security and human health, take information about product source, reliability, for environment; natural life and biodiversity protection, decreasing effects of agriculture on environment and realization of conservator management plan.

Keywords: Food security, organic agriculture, pesticide, sensible agriculture, sustainable agriculture.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

The Morphological and Physiological Response of Garnem Rootstock Against Drought Stress in Vitro Culture Conditions*

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Abstract:

In present study, it was investigated morphological and physiological response of Garnem rootstock under drought stress establishing on in vitro culture media including different Polyethylene Glycol-8000 (PEG-8000) levels. In order to make drought stress condition, three PEG levels (-0.5MPa, -1.0MPa, -1.5MPa) was used. Plants were measured at 0, 3, 5, 7, 9, 11, 13 and 15 days for morphological and biochemical parameters such as plant height, relative plant weight, leaf area, chlorophyll content, proline content and protein content. The permeability of membranes and leaf relative water content (LRWC) were also measured. The highest growth of plant height was obtained by control (25.03%), the lowest growth was obtained by -1,5MPa drought stress level (3.88%). The lowest increase rate of relative plant weight was measured from -1,5MPa drought stress level (12.36%). The lowest leaf area was determined to be 1.01cm² in -1,5MPa while the highest leaf area was determined to be control (2.39cm²). The chlorophyll content was measured by SPAD-502 and the lowest value was obtained from -1.5MPa application (16.78ppm). According to the leaf membrane permeability result, -1,5MPa (97.43%) drought level was found the highest value. LRWC was the lowest in -1,5MPa drought stress level (2.48%). Total protein level decreased linearly from initial day to end of the study in all application. The highest changing rate of protein content was found at-1.5MPa level. Unlike protein content, the proline content increased linearly from initial day to end of the study. The highest proline content was found in -1.5MPa level (64.70 µg g⁻¹ FW).

Keywords: Drought stress, Garnem, PEG, Plant tissue culture

**Acknowledgement:* This study was funded by Selçuk University, Scientific Research Project # 12101007

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Fungal Diseases in Antalya Greenhouse Tomato Cultivation and Determining Effectiveness of Some Fungicides against Tomato Powdery Mildew

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Abstract:

This study was conducted in order to determine the effects of different fungicides against tomato Powdery mildew disease and rates of occurrence of fungal diseases in tomato greenhouses in Aksu, Serik and Manavgat districts of Antalya province. Ten tomato greenhouses from each county and twenty plants were randomly observed from each greenhouse every month and disease surveillance was carried out for eight months. The diseases caused by named causal agents (damping-off: *Pythium spp.*, *Fusarium spp.*, *Sclerotinia spp.*, *Rhizoctonia solani*, *Alternaria solani*) *Fusarium oxysporum f.sp. lycopersici*, *Sclerotinia sclerotiorum*, *Phytophthora infestans*, *Botrytis cinerea*, *Alternaria solani*, *Cladosporium fulvum*, *Leveillula taurica* were determined as 8.33%, 40.03%, 44.20%, 48.95%, 53.99%, 58.43%, 63.37% and 64.83% respectively. In order to determine the efficacy of some fungicides against the powdery mildew disease, which was highest in the uncovered tomato cultivation, a fungicide test was conducted in four replicates according to the randomized split-block trial design using the susceptible Keyta F1 hybrid tomato variety. As a result of the fungicide treatment, the highest effect was obtained with 92.30% from 80% micronized sulfur, which was followed by triadimenol 250g / l, Fluopyram 200g / l + Tebuconazole 200g / l, Azoxystrobin 250g / l Penconazole 100 g / l with 86.2%, 80.3%, 76.36% and 74.5% / L, respectively.

Keywords: Fungicide, Greenhouse, Powdery mildew, Tomato

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Evaluation of Chemical Control Approach and Applications of Bean Farmers by Human Health and Environmental Risk

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Abstract:

One way of achieving efficient and high-quality crops in crop production is to protect crops against problems related to plant protection. For this, effective combat against disease, insect and weeds must be carried out by using appropriate methods of agricultural struggle. The most widely used method of agricultural struggle is the chemical struggle, which is accepted by producers against diseases, harmful and weeds due to effective and short-term results. Although the use of medicines in the agricultural struggle has a significant advantage in terms of effective combating against disease, insect and weeds, it is also a disadvantage in terms of human health and the environment. The most important factor in creating the risk of the pesticide in terms of human health and environment is the chemical control approach and application behaviors of the pesticide users. We conducted this research in order to reveal the level of risk of human health and environment in terms of the chemical control approaches and practices of the bean breeding farmers. For this reason, it has been tried to evaluate the chemical control approaches and practices of human beings in terms of human health and environmental risk by asking face to face questions with the bean producers of Konya, where beans were produced the most. Analysis of the answers to questions asked by a total of 60 bean farmers surveyed revealed that about 70% of the farmers did not take the necessary precautions during the preparation phase of the pesticide and during the application.

Keywords: Bean, Farmer, Konya, Pesticide

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**The Effect of Methyl Jasmonate and Salicylic Acid on Yield and Tuber Quality of Radish (*Raphanus sativus* L.)****Ozan ZAMBI¹, Nuray AKBUDAK², Sila ÖZKAN², Ayşenur ŞAHİNER²**¹*Kalecik Vocational School, Ankara University, Kalecik, Ankara, Turkey*²*Department of Horticulture, Faculty of Agriculture, University of Uludag, Gorukle Bursa, Turkey**e-mail: nakbudak@uludag.edu.tr***Abstract:**

This study investigates the effects of different 5 and 10 mM Methyl Jasmonate (MEJA) and 2, 5 mM Salicylic acid (SA) doses on growth and tuber quality of Radish (*Raphanus sativus*) (cv. Akkaya). tuber weight, tubers diameter (cm), tubers weight (g), leaf length (cm), number of leaf, total soluble solids (%), colour, total phenol (mg kg⁻¹ gallic acid) were determined in the harvested plants. At the end of the study, it was determined that SA applications were higher than MEJA applications in tuber weight. The same results were obtained in tuber diameter and tuber length. The highest total phenol was in 5 mM of MEJA (1056,12 mg kg⁻¹ gallic acid) and 2, 5 mM Salicylic acid (935,68 mg/ g⁻¹ gallic acid) applications respectively. The increasing MEJA and SA applications caused an increase in total phenol.

Keywords: Colour, plant growth regulator, phenol, white radish, yield

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Determination of The Effect of Water Deficit Stress on Enzyme Activity, Chlorophyll and Stoma Properties in Different Melon Genotypes*

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Abstract:

In this study, it was aimed to determine the effects of water deficit stress on twelve melon genotypes collected from the Lake Van Basin and some commercial melon cultivars. The study was carried out in 3 replications according to the completely randomized experimental design in the climate chamber conditions. Water deficit stress was applied on the basis of the amount of drainage in two true leaf stages by forming a water restriction of 50% according to the amount of water supplied to the control, and the experiment was terminated when the stress indication was observed in the plants. At the end of the study, catalase (CAT), superoxide dismutase (SOD), ascorbate peroxidase (APX), malondialdehyde (MDA), chlorophyll-a, chlorophyll-b, total chlorophyll, carotenoid, number of stoma, stoma size and stoma width were investigated in melon genotypes. It was determined that the CAT content was found to be significantly ($P<0.05$) differed among melon genotypes only in water-restricted condition, while APX, chlorophyll-b, total chlorophyll content and stoma size were found to be significantly ($P<0.05$) differed among melon genotypes in control application. The number of stoma and stoma width were significant ($P<0.05$) among melon genotypes in both water-restricted condition and control application. In terms of enzyme, chlorophyll and carotenoid parameters with respect to the control condition, YYU-13 genotype and Napolyon F1 cultivar were found to be tolerant to water deficit stress, while YYU-1 genotype and Lokum F1 cultivar were found to be susceptible to water deficit stress.

Keywords: *Cucumis melo* L., Genotype, Lake Van Basin, Tolerance, Water restriction,

*Acknowledgement: This study was funded by Yuzuncu Yil University, Scientific Research Project # 2015-ZF-B067

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Determination of The Effect of Salt Stress on Enzyme Activity, Chlorophyll and Stoma Properties in Different Melon Genotypes*

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Abstract:

This study aimed to determine the effects of salt stress on thirteen melon genotypes collected from the Lake Van Basin and four commercial melon cultivars. Two salinity applications (controlled conditions and 50 mM NaCl concentration) were applied to melon genotypes. The study was carried out in 3 replications according to the completely randomized experimental design in the climate chamber conditions. The experiment was terminated when the salt stress indication was observed in the plants. At the end of the study, catalase (CAT), superoxide dismutase (SOD), ascorbate peroxidase (APX), malondialdehyde (MDA), chlorophyll-a, chlorophyll-b, total chlorophyll, carotenoid, number of stoma, stoma size and stoma width were investigated in melon genotypes. It was determined that melon genotypes react differently in many aspects examined for salt tolerance. Amounts of chlorophyll, an important parameter of salt tolerance, decreased in salt sensitive genotypes, while it increased in salt tolerant genotypes. Stoma width, height and number were found to increase in all genotypes in salt stress, but this increase was more in sensitive genotypes. In addition, the enzyme activities (CAT, SOD and APX) were increased, while the MDA content was found to be even higher in sensitive genotypes than tolerant genotypes.

Keywords: *Cucumis melo* L., Genotype, Lake Van Basin, Salt stress, Tolerance

*Acknowledgement: This study was funded by Yuzuncu Yil University, Scientific Research Project # 2015-ZF-B067

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Nutrient Contents of "Erciř" (*Vitis Vinifera* L.) Grape Cultivar Canes

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Abstract:

Viticulture can be performed in a limited area in Van due to the restrictive effect of the temperature. "Erciř" cultivar is unique grape variety that adapts to ecological conditions of Van and continues to its popularity from the Urartu civilization to nowadays. This study aims to determine nutrients content in one-year old canes that pruned in winter pruning season to obtain canes in "Erciř" cultivar. N, Ca, Cu, Fe, K, M, N and Z elements were considered as nutrients. The study was conducted to randomized plot design with five replications. Each replication was consisted of three vines and two pieces of canes were taken from each vine. Canes were pruned with two years-old branches over the 16 buds in April 2015. They were split to 4 pieces that 1.-4., 5.-8., 9.-12. and 13.-16 internodes by using pruning shears. Then these pieces were dried in an oven and grounded. Dried and grounded cane samples were stored in small polyethylene bag in cool and dry room until analysis. Friedman test was performed to determine whether differences between the internodes groups of canes for the considered nutrients. In conclusion; for Cu, Fe, Mn and P elements, the differences between the means of internodes were found statistically significant ($p < 0.05$). In addition, nutrient values ranged from 1.020 to 1.15% for N, 0.39 to 0.50% for Ca, 15.22 to 27.40 ppm for Cu, 13.70 to 27.50 ppm for Fe, 0.23 to 0.31% for K, 0.03 to 0.04% for Mg, 9.53 to 12.90 ppm for Mn, and 13.10 to 64.30 ppm for Zn.

Keywords: Cane, Grapevine, Macro and micro elements, Nutrition, Pruning

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Viticulture and Grape Products in Turkey****Ruhan İlknur GAZİOĞLU ŞENSOY¹, Ethem Ömer BAŞI²**

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Abstract:

This paper aims to reveal the present condition of viticulture in Turkey which is an ancient culture for thousands of years, and different uses of the vineyard products in Turkey. Turkey has about 4 million tones grapes production in 435 226 ha mainly utilize table grape (1 990 604 tones), for raisin (1 536 862 tones), fruit juice and wine (472 534 tones). Turkey, which is the largest seedless raisin producer and exporter in the world, achieves 40-45% of world exports of seedless raisins. Nearly all of the country has a very important potential for grape growing in terms of climate and ecological conditions. Grape is widely used in the country as table grape, as well as in raisin, wine, vinegar, and traditional products such as pekmez, sucuk, bastık, muska etc. The grape leaves are made commercially pickled/brined, to be wrapped for a traditional dish, sarma. Grape plants can also be utilized in house pergolas, for ornamental and shade purposes. Moreover, the seed of grape is used as a pharmaceutical and food supplement, and soap and cosmetic products because of its rich phenolic and antioxidant effects. In recent years, grape seed and pulp have been ground and added to flour products, so the nutritional value of the products is being increased at a high rate.

Keywords: Grape, Local products, Turkey, Viticulture

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Determination of Oyster Mushroom (*Pleurotus ostreatus*) Postharvest Quality Losses in Modified Atmosphere Storage Conditions

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Abstract:

In this study; the oyster mushrooms were stored at + 4 ° C temperature in modified atmosphere conditions for 20 days in polyvinyl chloride (PVC), polystyrene containers and commercial plastic bags. During the storage weight loss, soluble solids, respiratory rate, titratable acidity and color changes were determined 5 days intervals. The rate of quality loses of the oyster mushroom that stored in polyvinyl chloride (PVC) containers is slower than polystyrene containers and commercial bags. Mushrooms could be store in PVC containers for 10 days.

Keywords: Oyster mushroom (*Pleurotus ostreatus*) , storage, modified atmosphere packaging, shelf life

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Fatty Acid Composition of Some Walnut (*Juglans regia* L.) Genotypes from Kyrgyzstan*

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Abstract:

Kyrgyzstan has quite large walnut (*Juglans regia* L.) tree forests. In this study, the oil contents and fatty acid compositions of walnuts from two important forest regions selected from Kyrgyzstan were examined. For this purpose, walnuts of Sary-Chelek, Arslanbop, Kara-Alma forest zones from Jalal-Abad region and walnuts of Uzgen forest zone from Osh region were studied. Oil content of walnuts was performed by soxhlet extraction. Fatty acid composition was identified by capillary gas chromatography of their methyl esters. The oil contents of walnuts were between 55.5 and 65.3%. The fatty acid profiles of walnuts were in good agreement with literature values of general walnut fatty acid composition, as expected linoleic acid was the predominant fatty acid (C18:2n6c) changing from 46.3 to 62.1%. The values of oleic acid (C18:1n9c) and palmitic acid (C16:0), the other major acids, changed between 18.7% and 32.2% and between 5.0 and 7.7% respectively. Walnut is significant source of linolenic acid known as w-3 fatty acid. The linolenic acid (C18:3c) content changed from 6.7 to 13.1%. The stearic acid ranged from 2.36 to 4.25% while there was a trace amount of miristic acid (0.02-0.04%) in the walnut samples.

**Acknowledgement: This research is supported by Kyrgyz Turkish Manas University Scientific Research Projects (Project No: KTMÜ-BAP-2015.FBE.04).*

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Investigation of The Effects of Plant Growth Promoting Rhizobacteria in Tomato (*Solanum lycopersicum* L.) under Salt Stress*

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Abstract:

In this study, it was aimed to determine effect of certain rhizobacteria (PGPR) to salt stress in tomato. Interland tomato cultivar and CA 41/1 (*Bacillus thuringiensis*), 18/1 K (*Pseudomonas putida*), S5/4 ep (*Pseudomonas putida*) and 30 (*Pseudomonas putida*) bacteria isolates were selected. The concentrations of 25 and 50 mM NaCl were applied for salt stress. The shoot and root lengths, shoot diameter, leaf number, shoot and root fresh weights shoot and root dry weights as well as 0-5 scale, tolerance percentage, content of nutrition of shoot and root were determined in the study. With use of PGPR, sodium intake decreased, on the contrary, amount of potassium, phosphorus, copper, zinc, rate of K/Na and Ca/Na significantly increased compared to the control. While S5/4ep isolate had the lowest sodium increase rate with 94.35 % among PGPR applies in 25 mM salt concentration compared to 0 mM, in 50 mM NaCl, it was determined that this rate was 167.14 % in CA41/1 isolate. Meantime for 25 mM salt concentration in shoot the highest K/Na increase rate was in S5/4ep with 55.42 % compared 0 mM, CA41/1 provided an increase in rate of 70 % for 50 mM. In this respect, it was indicated that PGPR isolates ensured positive effects in seedling growth parameters to tomato plants under salt stress and had an effect on favorable in plant development by facilitating nutrient uptake.

Keywords: PGPR, Salt stress, Seedling, *Solanum lycopersicum* L., Tomato

*Acknowledgement: This study was funded by Yuzuncu Yil University, Scientific Research Project #2015-FBE-YL-026

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Determination of Total Phenol and Antioxidants and Some Yield Parameters in The Fruits of Miniature Tomato Cultivars (*Solanum lycopersicum* L.) Cultivated with Different Fertilizer Applications*

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Abstract:

This study was carried out on farmer conditions by applying 3 different fertilizer applications [1st application: Only base fertilization with DAP; 2nd application: Base fertilization with DAP + chemical fertilizer; 3rd application: Base fertilization (DAP) + organic fertilizer + biochemical fertilizer] and three miniature tomato cultivars (Black Zebra, Window Box Yellow and Sweet Pea Currant) in completely randomized factorial experimental design with four replications. In tomato fruits, total phenolics, antioxidants and some yield parameters (the average fruit weight, the average number of fruits per plant, the fruit weight per plant and the fruit yield) were determined. The total phenolic and antioxidant values were found to be significant ($P < 0.05$) among the miniature tomato cultivars in all applications. In Window Box Yellow cv., there were also significant differences in fertilizer application for total phenolic content, and in Sweet Pea Currant cv., there were also significant differences in fertilizer application for antioxidant content, Yield parameters were also significant ($p < 0.05$) among the miniature tomato cultivars and fertilizer applications in each miniature tomato cultivar. In terms of total phenolic and antioxidant, The Sweet Pea Currant cv. had the highest contents, but the Window Box Yellow cv. had the lowest contents compared to other cultivars. The highest fruit yield was obtained from Black Zebra cv. in the 3rd fertilizer application, while the lowest fruit yield was obtained from Window Box Yellow cv. in 1st fertilizer application.

Keywords: Antioxidant, Fertilizer, Miniature tomato, Total phenolic

* *Acknowledgement: This study was funded by Yuzuncu Yil University, Scientific Research Project #2014-BMYO-B172*

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Recent Advances in Anther Culture of Eggplants in The Contexts of Cytological Observations and Incubation Conditions

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Abstract:

The purpose of this study is to utilize diploidization techniques to obtain different parent plants from different eggplant genotypes that can be used for breeding hybrid cultivars, and to increase the ratio amount of haploid plant samples via anther culturing. Anthers of different eggplant cultivars cultured on the medium DDV. In the studies which was conducted at different labs in Ankara, Tokat, and Antalya, flower buds containing microspores at the uninucleate stage were collected and after surface sterilization, their anthers were planted into the C medium. The appropriate microspore stage for the culture; late uninucleated microspore determined by DAPI staining protocole and observed with a fluorescent microscope. The cultivars were kept for 8 days at a temperature of +35oC in dark conditions, after which they were kept for 4 days at 25oC in a photoperiodic system and transferred to the R medium after the 4 days. During their incubation in a growth chamber, haploid embryos in the cultures were observed to have grown after 30-50 days of incubation under flourescent lamps or LED lightening conditions. These haploid embryos were then transferred to MS mediums, from where they were acclimated progressively to outside environments. The ratio of haploid embryo formation was observed to differ according to the "cultivar x light source x growth regulatory applications" basis. This ratio differed between 0%-38.4%. The highest haploid embryo formation frequency in Anamur F1 cultivar was obtained from the anther cultures planted into 120g/L sucrose and 1mg/L of both 2,4-D and Kinetin containing C medium.

Keywords: Androgenesis, *Solanum melongena*, Light, Auxin, Sitokinin

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

The Response of Sweet Cherry Sapling Applied Plant Growth Promoting Rhizobacteria (PGPR) against Salinity*

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Abstract:

In present study was conducted with cultivar '0900 Ziraat' grafted on MaxMa-14 rootstock both 2013 and 2014 years. The effect of PGPR (*Bacillus subtilis* EY2, *Bacillus atropheus* EY6, *Bacillus sphaericus* GC subgroup B EY30, *Staphylococcus kloosii* EY37 and *Kocuria erythromyxa* EY43) were investigated under salt stress conditions. PGPR's effects were tested on plant growth (shoot length and diameter, stem diameter, leaf area, plant fresh and dry weight and root fresh and dry weight), leaf relative water content (LRWC), membrane permeability, stomatal conductivity, photosynthetic activity and chlorophyll content (by SPAD-502). The saplings were grown in pots filled 2:1 torf: perlite. Salinity was obtained by NaCl: Na₂SO₄: CaCl₂: MgSO₄ (7:9:3:1) solution mix. Salt mix was applied once a week with irrigation during growing period. When the salinity reached 2-2.5 dS/cm, salt mix application was ended. All bacteria treatments significantly increased plant growth compared with the salt treatment in both two years. As estimated, the control had highest values in all parameters. In the EY43 treatment, shoot length and shoot diameter was found 50.99cm and 6.30mm, respectively. The LRWC range from 12.01% (salt treatment) to 21.63% (EY43 treatment). The highest rate of membrane permeability was found in salt (31.95%). The stomatal conductivity was decreased in salt application (149.93mmol/m²s) unlike EY37 treatment (322.92mmol/m²s). Similarly, EY73 treatment significantly increased photosynthetic activity (12.89µmol CO₂ m⁻²s⁻¹) compared with the salt treatment (8.78µmol CO₂ m⁻²s⁻¹).

Keywords: 0900 Ziraat, PGPR, Salt Stress, Sweet Cherry

**Acknowledgement:* This study was funded by Selcuk University, Scientific Research Project No:14101013

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Characterization of Walnut Genotypes Selected from Kyrgyzstan's Walnut-Fruit Forests*

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Abstract:

Kyrgyzstan has extensive walnut-fruit forests. This study was conducted to evaluation walnut genotypes collected from Jalal-Abad (Sary-Chelek, Arslanbop, Kara-Alma) and Osh (Uzgen) regions. The sixteen genotypes were characterized according to fruit traits as fruit size, shell thickness, kernel ratio and color. The protein and ash contents of genotypes were determined. The fruit weight of genotypes ranged between 5.09 and 21.96 g. The shell thickness varied between 1.01 and 2.50 mm. The percent kernel of genotypes was found 31.91 to 51.23%. The protein content was changed from 15.84 % to 24.33 % in the genotypes. Ash ranged from 1.01 to 2.69 % while the moisture content of the kernels was found between 2.77 and 3.87%. Generally, kernel colors of genotypes were light and light amber. Based on this evaluation, collected genotypes, except a few, were found to have superior fruit characteristics.

Keywords: Fruit size, Kernel, Walnut

**Acknowledgement: This study was funded by Kyrgyz-Turkish Manas University, Scientific Research Project #KTMÜ-BAP 2015-FBE-04*

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

A Study on The Determination of Performances of Some F1 Walnut Genotypes*

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Abstract:

In this study, the performances of the F1 walnut genotypes obtained for breeding of the new walnut varieties which lateral bud fruitfulness, late leafing time, high nut quality and short vegetation period were examined. Hartley, Akça and Oğuzlar 77 walnut varieties were used in the crossings. The characteristics of the F1 genotypes were examined in the breeding plot between 2015 and 2016. The characteristics of the F1 walnut genotypes are compared with the Chandler and Franquette cultivars. Leafing times of the F1 genotypes were determined between April 07 (55-60-12) and April 23 (55-60-80), the date of foliage were observed between November 5 (55-60-81, 55-60-78, 55-19-79) - November 18 (55-60-12, 55-60-38, 55-60-80). The leafing times of the F1 genotypes were observed later than the Chandler cv. and earlier than the Franquette cv. In F1 genotypes, the nut length was between 43,55 mm (55-60-81) - 51,92 mm (55-19-79), nut suture 37,48 mm (55-60-37) - 39,84 mm (55-19-79), nut cheek 33,98 mm (55-60-80) - 40,37 mm (55-60-12). In F1 genotypes, the average nut weight was determined between 14,34 g (55-19-79) to 21,71 (55-60-12), kernel weight ranged from 8,32 g (55-19-89) to 11,57 (55-60-12) and kernel percentage changed 51,61 % (55-60-80) to 57,59% (55-60-79). In Chandler cv. nut weight, kernel weight and kernel ratio were determined as 13,25 g, 5,99 g and 44,99%, respectively. Our F1 genotypes have more positive features than the F1 genotypes under investigation in the University California Davis breeding program.

Keywords: *Juglans regia*; late leafing; lateral bud fruitfulness; germplasm, crossing breeding

**Acknowledgement: This study was funded by TÜBİTAK, KAMAG 106 G 152*

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

The Breeding of Walnut Genotypes with Late Leafing and Lateral Bud Fruitfulness in Turkey*

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Abstract:

Turkey is one of the most important producers of walnut in the world. In 2015, Turkey ranked fourth in world production with 180807 t of production. *Juglans regia* L. is a very important species commercially grown in Turkey. Continuous seed propagation in Turkey has given rise to a great number of seedling walnut trees, which represent valuable walnut gene resources. In this study 55 walnut genotypes with lateral bud fruitfulness in the population of walnut which is grown from seed in counties of Turhal and Zile have been examined. In the study 21 genotypes were selected. The percentage of lateral bud fruitfulness of selected types is determined between 35 % (60-TR-12) and 85 % (60-ZL-01). The nut weight ranged between 8.16 g (60-TR-16) to 14.71 g (60-TR-03), kernel weight changed between 3.98 g (60-TR-16) to 7.4 g (60-ZL-01), nut length was determined as 24.41 mm (60-ZL-06) 42.50 mm (60-TR-07), nut suture 22.25 mm (60-ZL-06) - 34.58 mm (60ZL-04), nut cheek 23.77 mm (60- ZL-06) - 35.58 mm (60-ZL-02), shell thickness ranged from 0.36 mm (60-TR-22) to 1.48 mm (60-TR-03) .

Keywords: Breeding, lateral bud fruitfulness, nut quality, walnut

**Acknowledgement: This study was funded by Gaziosmanpaşa University, Scientific Research Project #2015/140*

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Statistical Evaluation of Watermelon (*Citrullus lanatus*) Genotypes Exhibiting Different Features under Stress Conditions*****M. Zeki KARİPÇİN***Siirt University, Faculty of Agriculture, Horticulture Department, Siirt, Turkey**e-mail: zkaripcin@siirt.edu.tr***Abstract:**

It is impossible to obtain results for genetic sources reflecting phenotypic differences and dissimilar groups. Thus, in addition to applying a standard statistical model using different watermelon genotypes under drought stress, a new formula was also used. The present study also suggests that according to the groupings in the statistical evaluation, the genotypes in the top groups did not yield positive results; thus, the parcel data may change according to the evaluation criteria. The use of a new evaluation model comprising comparative changes in these respective studies is more accurate. In the present study, the data for TSS (total soluble solids), average fruit weight and total yield values were evaluated using both methods of analysis. In conclusion, as a result of the standard statistical analysis, genotype nos. 325 and 26 have the best group, while the evaluation according to comparative variation criteria demonstrated that genotype nos. 24, 25, 27 and 218 have the best group. Thus, the most reliable evaluation method was to use the new evaluation model comprising comparative variations.

Keywords: Abiotic, Statistical evaluation and grouping, Watermelon genotypes

**Acknowledgement: This study was funded by SODES and GAP Agriculture Research Institute.*

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Investigation of European Candidatusphy Toplasma Pruner Diseases at Stone Fruits Trees in The Marmara Region in Turkey

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Abstract:

Stone fruits take an important place between our agricultural products with 2,337,688 tons of yearly production. While considering importance in total export quantity of these products, phytoplasma diseases are most factors threatening the cultivation. European Stone fruit yellow phytoplasma (*Candidatus Phytoplasma prunorum*) diseases causes especially the fatal outcome in native varieties. In this study, It is aimed to understand results of phytoplasma infection between the years of 2014-2015 in Çanakkale and Bursa provinces. The survey has been done between May and October. 300 peaches and 10 apricot samples were collected from 20 orchards. Direct and nested-PCR analyzes were performed of these 400 samples. According to analysis results, 9 apricots, 6 peaches samples from Çanakkale, 27 peach samples from Bursa has been determined to be infected. RFLP analysis of nested PCR products has been carried out using the enzymes SspI and bsaA. According to cut off enzyme analysis results, all diseased samples were infected with European Stone fruit yellow phytoplasma. Considering the previous studies, it is concluded that European Stone fruit yellow phytoplasma diseases is common and the epidemic increases rapidly every passing year.

Keywords: Apricos, *Candidatus Phytoplasma prunorum*, Nested-PCR, RFLP

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Safe Food Tomatoes Production in Greenhouse by Using Biological Pesticide, Predator Insect and Microbial Fertilizer

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Abstract:

Safe food management has gained great importance in recent years and quality taken the first place in terms of consumer preferences. Consumers began to examine production practices in terms of health instead of quality criteria such as food size, appearance colour and so on. At the same time from the producer point of view, safe food production has gained great importance due to the exportation. Although Turkey has very favourable ecological conditions for organic farming and high export potential, its share in the world organic production market is very low. Nevertheless, the production is considered very risky without using pesticides and chemical fertilizers. The main aim of this study is both protect human health, prevent the destruction of natural resources and demonstrate its feasibility in farmers' conditions. Study was carried out in the 2014-2015 production period of tomato production on a 1000 m² plastic greenhouse conditions. No chemical drug used is against pest and disease instead of this 1,5% *Pseudomonas fluorescens* strain PL1 for nematode, 1,5% *Paecilomyces lilacinus* strain PL1 for fusarium rizotania and lead mildew, 1,5% *Ampelomyces quisqualis* strain Aq1 for shading, 1,5% *Verticillium lecani* strain V1-1 for whitefly , 1,5% *Paecilomyces fumosoreus* strain PFs-1 for the red spider, and the biological fighting agent *Necidiocoris tenius* was applied. To provide plant nutritional needs *Chlorella* algae and organic based fertilizers isolated in freshwater moss and in the microbial fertilizer class have been applied. As a result of the study, nutrient deficiency was not observed and in terms of diseases and harms, nematode and shrinkage problems were encountered in the first trial year, however, 8,500 kg / da crop was obtained. By changing the way of using the biological pesticides used in the second trial year of the study, problems were solved and 10.000 kg / da crop was obtained.

Keywords: Tomato, biological pesticide, microbial fertilizer, predator insect

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Some Eco-Friendly and Rnai-Based Biotechnological Applications against Phytopathogenic Fungi*

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Abstract:

The food needs of the world have become unrecoverable due to reasons such as the rapid increase of the world population, the gradually decrease of agricultural land, resistance problems in chemical control. Nowadays, scientists have begun to look for eco-friendly ways of struggle in order to minimize the loss of crops caused by plant diseases and pests. In recent years, with the increase in research in the field of agricultural biotechnology, new ideas have emerged in terms of the struggles and these struggles have begun to be accepted. RNA interference (RNAi), one of these control ways, is a mechanism that plays a role in the regulation of gene expression. This mechanism is seen a natural process in living organisms, and dsRNA (double-strand RNA) molecule which is homologous to the target gene minimize or block the gene expression by degrading the mRNA molecule. In mechanism, dsRNA molecules that are homologous to the gene sequence responsible for virulence of plant pathogens are artificially produced. As a result, gene expression is reduced or eliminated. RNAi in combating phytopathogenic fungi is applied in different forms; such as host-induced gene silencing (HIGS) which is generally used hairpin RNA (hp-RNA), BSMV (*Barley stripe mosaic virus*)-mediated HIGS. In this review, the information on RNAi-based biotechnological applications and limited aspects of these applications will be provided.

Keywords: dsRNA, RNA, HIGS, hp-RNA, Fungi.

**Acknowledgement: This study was funded by Selcuk University-ÖYP Coordinatorship, Project Number: #2016-ÖYP-056.*

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

The Effect of Pre-Treating Two Eggplant (*Solanum melongena* L.) Genotypes with Hydrogen Peroxide, Nitric Oxide, and Salicylic Acid under Salt Stress Conditions

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Abstract:

One of the methods used to reduce the harmful effects of salt on plants and to revert the loss of productivity, is to apply some chemicals externally on plants. In this study, the effects of H₂O₂, NO and SA pre-treatment on the salt stress of two eggplant *Solanum melongena* L. genotypes that have different tolerances [salt tolerant (Mardin) and salt sensitive (Artvin)] were investigated. Eggplant seedlings at the 4-5 leaf stage were sprayed with 1 mM H₂O₂, 0.1 mM SNP (as a NO source), 0.1 mM SA, and their combinations on to the leaves. Forty-eight hours after application, the plants were exposed to 100 mM NaCl for 10 days. In both of the eggplant varieties, salinity increased proline and lipid peroxidation levels compared to the control, with more increases observed in the Artvin genotype. In pre-treated groups, the amount of proline increased compared to the group to which salt stress was applied, but lipid peroxidation decreased. The lowest level of lipid peroxidation was observed when H₂O₂+NO+SA was applied to the Mardin genotype, while this case was observed when only H₂O₂ was applied in the Artvin eggplants. It was determined that the amount of internal H₂O₂ increased in the groups treated with salt stress compared to the control groups, especially in the Artvin genotype. As a result, it was determined that pre-treatments with H₂O₂, NO and SA alone or in combinations were effective at varying tolerance rates on both of the eggplant genotypes for reducing the negative effects of salt stress.

Keywords: Hydrogen peroxide, Lipid peroxidation, Nitric oxide, Proline, Salicylic acid, Salt tolerance

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Assesment of Mineral Nutrient and Heavy Metal Concentrations in *Macropipus depurator* Shells and Muscle Tissues Collected from The Sea of Marmara in 2016 Summer Season

Aslı HOCAOĞLU¹, İbrahim İlker ÖZYİĞİT², Bahattin YALÇIN³, Efsun Görkem ATASOY², Neşet Kaan KARAHAN², Cansu TETİK², Abdullah TATLIDİL⁴

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Abstract:

Macropipus depurator (Linnaeus, 1758), which is known as "harbour crab" is the most abundant crab in the North Sea, Atlantic Ocean, Mediterranean Sea and Black Sea. It grows up to 50 mm (2.0 in) in width and 40 mm (1.6 in) long and can be distinguished from other crab species. Since it has a wide range of distribution in the Sea of Marmara, it has chosen a study material. In this study, *M. depurator* samples were collected with a trawl from four stations. Six individuals were used as samples in each location and the whole-body mass of individuals was interpreted. Shell and muscle tissues were isolated from each individual and dried in an oven at 120 oC for 48 hours. Approximately, 0.2 g of samples were isolated and wet ashing method was used for the digestion of the materials. Trace element (heavy metal and mineral nutrient) concentrations were measured by using ICP-MS. According to our results, the accumulation of heavy metals were higher in shells when compared to the muscle tissues. Blood circulation and the functions of kidney and liver could be the reason of this situation in living muscle tissues. Additionally, the results showed that, heavy metal values especially obtained near industrial areas showed that *M. depurator* accumulates heavy metals related to the increasing concentrations and it could be use a good biomonitor animal for environmental researches.

Keywords: Biomonitor, Heavy metal, Nutrient elements. Sea pollution Sandy swimming crab

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Determination of Mineral Nutrient and Heavy Metal Accumulations in *Parapenaeus longirostris* Samples Collected from The Sea of Marmara (Turkey) in 2016 Summer Period

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Abstract:

The Sea of Marmara is the only inland sea in Turkey. Also, this sea connects the Black Sea with the Mediterranean Sea. That is why it serves as a biological corridor between the Black Sea and the Mediterranean Sea. *Parapenaeus longirostris* (Lucas, 1846), is a demersal shrimp living in depths of 20 m to 700 m and can be found in all over the Mediterranean. In this study, *P. longirostris* samples were collected with a trawl from the four stations. Six individuals were used as samples in each location and the whole body mass of individuals was appraised. Heavy metal and mineral nutrient analysis were conducted with ICP-MS. According to our results, the highest Al, B, Ba, Cu, Fe, Li, Ni, Pb, Sb, Sn, Ti, U and Zn were measured in samples collected from Büyükçekmece Bay, while the highest As, Ca, Cd, Co, Hg, Sr and Tl were measured in samples collected from Lapseki coast. However, Ba, Cd, Cr, Co, Cu, Fe, Ni, P, Pb, U and Zn were in lowest concentrations far from the Marmara Island. Measured higher amounts of Al, B, Ba, Cu, Fe, Li, Ni, Pb, Sb, Sn, Ti, U and Zn could be the result of urban and industrial pollutants and domestic wastewaters of Büyükçekmece district. In addition, opening thermal power plants, iron-steel industries, and ship yards could be the main factors of the high amounts of As, Ca, Cd, Co, Hg, Sr and Tl in samples from Lapseki coast.

Keywords: Biomonitor, Deepwater pink shrimp, Heavy metal, Nutrient elements, Sea pollution

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Assessment of Mineral Nutrient and Heavy Metal Concentrations in *Brissus unicolor* and *Spatangus purpureus* from The Sea of Marmara in 2016 Summer Period

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Abstract:

Brissus unicolor (Leske, 1778) and a *Spatangus purpureus* (O. F. Mller, 1776) species are the common Echinoderms in the Sea of Marmara. Members of this class have a flat hemisphere shape and have no arms. All their bodies are covered with limestone plates. They are not economically important, but eggs are eaten in some countries. In this study *B. unicolor* and *S. purpureus* samples were collected with a trawl from different stations. Six individuals were used as samples in each location and the whole body mass of individuals was interpreted. Standard procedures were applied and mineral nutrient and heavy metal concentrations were analyzed by using ICP-MS. According to our results the highest Al, B, Ba, Be, Co, Cu, Fe, K, Li, Mg, Na and Ni concentrations were measured in *B. unicolor* samples collected from open sea near Marmara Island, while the highest Ag, Al, Ba, Be, Cd, Co, Hg, K, Li, Mg, Mn, Na and Ni concentrations were at the same location for *S. purpureus*. Lowest amounts of Al, Ba, Be, Ca, Cd, Co, Cr, Hg, K, Li, Mg and Ni found at Prince Islands coasts for *B. unicolor* and Al, Ba, Be, Cd, Co, Cr, Hg, Li, Mg and Ni and at same location for *S. purpureus*. The upper stream comes from the Bosphorus and the polluted waters carried by the Danube River pollutes the Black Sea. This pollution also affects the Sea of Marmara. That is why around the Marmara Island area some elements may have been higher.

Keywords: Biomonitor, Groove burrowing urchin, Purple hearth urchin, The Sea of Marmara, Sea pollution, Heavy metal.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Heavy Metal and Mineral Nutrient Status of Some *Serranus hepatus* Tissues (Muscle, Gill and Liver) from The Sea of Marmara in 2016 Summer Period

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Abstract:

The Sea of Marmara, a northeastern extension of the Mediterranean Sea, separates Asian and European sides of Turkey, also two continents. Thus, it serves as a biological corridor between the Black Sea and the Mediterranean Sea through the Bosphorus Strait. Serranidae family member *Serranus* is a genus of fish and it is one of five genera, which are known commonly as the "Atlantic dwarf sea basses". In the Sea of Marmara, *Serranus* L. populations have been widely distributed. In this study, *Serranus hepatus* (Linnaeus, 1758) samples were collected with a trawl from different stations. Six individuals were used as samples in each station. The collected samples were speared to three main materials as muscle, gill and liver tissues. These tissues were dried in the oven at 120 oC for 48 hours. 0.2 g of samples were isolated from each tissue and weighted and digested by using wet ashing method. Standard solutions were prepared, heavy metal and mineral nutrient concentrations were analyzed by using ICP-MS. According to our results, the highest concentrations were generally found in the liver, then in the gills and muscle tissues. It was also seen that the heavy metal values were mostly found in the samples taken in third dredge, which was in the coast of Büyükçekmece District. In the District, domestic and/or industrial wastewater discharge or diffuse pollution are the main pollution sources, and their reflections to the Sea of Marmara could be the result of these higher heavy metal values in the studied fish tissues.

Keywords: Biomonitor, Brown comber, Sea pollution, Heavy metal, Nutrient elements.

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

The Effects of Some Heavy Metals Mixture (Cd, Cu, Ni and Pb) on Physiology and Genotoxicity of Aquatic Plant *Myriophyllum spicatum* L.

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Abstract:

Heavy metals are major pollutants of water ecosystems and soil as they leach from nearby industrial factories such as metal, battery, dye, glass and plating facilities. Heavy metals can cause DNA damage by binding to functional sites in plants. It is vital to identify and remediate these polluted areas for maintaining ecological sustainability. *Myriophyllum spicatum* L. (spiked watermilfoil) is a submerged aquatic plant native to Europe, Asia, and North Africa. *M. spicatum* generally prefers clear waters as it needs high sunlight intensity. *M. spicatum* is an invasive aquatic weed which grows in still or slow-moving water. It can also cover an entire lake surface and halt boat traffic on it. Random Amplification of Polymorphic DNA (RAPD) is a PCR reaction that randomly amplifies DNA regions and by doing this, the method informs us about genotoxicity in a wide range against any heavy metals applied in different concentrations. In this study, three different concentrations (100, 200 and 400 µM) of heavy metals mixture (Cd, Cu, Ni, Pb) were applied to *M. spicatum* plants in different aquatic water tanks for a duration of 14 days. Leaf samples were then harvested for DNA isolation. Sample DNA's were isolated from leaves by using CTAB method and RAPD-PCR technique was used to amplify DNA samples via RAPD primers. Heavy metal application related variation in band intensity, loss of normal bands and appearance of new bands compared with the control group. According to our results, changes in band densities were observed.

Keywords: RAPD, Spiked watermilfoil, Aquatic plant, Heavy metal

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Investigation of *Ascochyta* Blight Resistance in Inbred Chickpea (*Cicer arietinum* L.) Lines of Turkey by Using Molecular Markers (STMS, RAPD and ISSR)

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Abstract:

Genus *Cicer* (Fabaceae), contains the cultured chickpea *Cicer arietinum* L. which has a quite high commercial and economic value. Chickpea plant is originating from the Southeast Anatolia in Turkey, while India is the biggest producer in the world. *Ascochyta rabiei* in Ascomycota order is a pathogenic fungus. It leads to *Ascochyta* blight (anthracnose) disease in chickpea. The major symptoms of disease are leaf and trunk lesions and wilting. Molecular markers are defined as specific gene regions within the genome and DNA fragments associated with this region. At this point, a specific region of the genome can be identified. Especially after the introduction of the polymerase chain reaction, they have begun to be used more frequently and have been frequently preferred in studies. These markers have two important advantages: they are very diverse and resistant against environmental conditions. In this respect, the sequence variations in DNA can be determined very efficiently. In this study, *Ascochyta* blight resistance was investigated in inbred chickpea varieties, by using molecular markers. Chickpea seeds were planted in greenhouse conditions and the plants were placed in -86°C for DNA isolation. DNA was isolated from young leaves and PCR technique was used to amplify DNA samples. Disease tolerance was determined by three molecular markers and results were monitored using gel-electrophoresis. According to our results, STMS primers demonstrated the distinctive feature for *Ascochyta* blight resistance. In addition, monomorphic bands were obtained from RAPD and ISSR primers, not demonstrating the reliable results in detection of resistance against *Ascochyta* blight disease.

Keywords: Anthracnose chickpea, Molecular markers, *Cicer arietinum* L.

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Investigation of Accumulation Capacity and Consequential Mineral Nutrient Status of Heavy Metal (CdCl₂) Treated *Ludwigia glandulosa* Walter in Aquatic Tanks****İbrahim İlker ÖZYİĞİT¹, Mehmet Emin URAS¹, Uğur ŞEN¹, Zeyneb Zişan GÖKÇE¹
Aslı HOCAOĞLU², Gizem Müzeyyen AYGÜN¹**¹Marmara University, Faculty of Science and Letters, Department of Biology, Istanbul, Turkey²Mustafa Kemal University, Faculty of Science and Letters, Department of Biology, Hatay, Turkey

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Abstract:

Ludwigia glandulosa Walter is an amphibious plant from Onagraceae family that can grow partially or fully submerged in aquatic ecosystems. It's native to southeast United States and grows slowly, reaching a maximum height of 40 cm. Also known as cylindrical fruit primrose-willow, this species desires plentiful CO₂ for growth and is known to react morphologically to inadequate light by changing leaf colors from red/purple to dark green. In addition to natural restrictive agents such as light and CO₂, plants are known to react to different levels of heavy metals and mineral nutrients in their environments. Most heavy metals are considered undesirable for plants and may cause serious harm, however some plants are known to develop adaptations to different stresses. Heavy metal accumulation is one of these adaptations. Cadmium is an important heavy metal contaminating aquatic habitats as a result of mainly industrial activities. Cadmium stress is known to be the cause of physical and physiological effects such as water imbalance, root growth inhibition, chlorosis and genotoxicity. This study aims to determine effects of different Cd concentrations (100, 200 and 400 µM) on *L. glandulosa*. The samples were treated in water tanks for 14 days and leaf, root and stems were collected and analyzed for Cd accumulation. Obtained results revealed that plants treated with higher Cd concentrations accumulated higher amounts of Cd, whereas their mineral nutrient concentrations were lower in contrast to Cd levels. On the contrary lower concentrations of Cd treatment resulted in lower accumulation and consequently higher mineral nutrient uptake.

Keywords: Cylindric fruit primrose-willow, Aquatic plant, Heavy metal pollution, Aquatic ecosystem, Plant stress

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Assessment of Genetic Diversity and Phylogenetic Relationships in Some Poppy (*Papaver somniferum* L.) Varieties Cultivated in Turkey****Uğur ŞEN¹, Ertuğrul Filiz², İbrahim İlker Özyiğit¹, Mehmet Emin URAS¹**¹Marmara University, Faculty of Science and Arts, Department of Biology, Istanbul, Turkey²Duzce University, Department of Crop and Animal Production, Cilimli Vocational School, Duzce, Turkey

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Abstract:

Papaveraceae family includes 28 genus and approximately 250 species in the world. This family members spread on subtropical region at northern hemisphere. In Turkey, there are 5 genus that one of them is *Papaver* L. Within this genus, *Papaver somniferum* (Opium poppy) is an annual and usually glaucous herb and is also known as "haşhaş" in Turkey. It is a major source of many pharmaceutically and economically valuable alkaloids such as morphine, codeine, and noscapine. Some candidate genes/regions in plants have been proposed as a possible standard marker but none of them was commonly accepted by taxonomic communities. However, nuclear ribosomal DNA (nrDNA) ITS regions have been often used in phylogenetic studies. Additionally, chloroplast trnL - trnF spacer was also employed in relationship studies of plants and other organisms. Also, inter simple sequence repeats (ISSR) markers are the most used markers for giving reproducible, highly polymorphic and informative results. In this study, 12 varieties of opium poppy was studied which is cultivated in Turkey. This study attempted to investigate genetic diversity in plant genomes using ISSR-PCR by using 15 primers and the genetic relationship between *P. somniferum* varieties by using internal transcribed spacer (ITS) and trnL-trnF intergenic spacer. According to our results, three main groups were observed and the most homogenous was Group A including TMO 4, Ofis 8, Bolvadin 95, Ofis 96, TMO 2 varieties and the most diverge group was Group C including TMO 4, Ofis 4 and TMO1 varieties and TMO 1 was the most diverge opium poppy variety.

Keywords: Opium poppy, phylogeny, ISSR, ITS, trnL-trnF

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Floristic and Ecological Characteristics of Biotopes in Bayrampasa District (Istanbul), Turkey

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Abstract:

In this study, the floristic and ecological characteristics of biotopes in Bayrampasa district were investigated. Bayrampasa is ever-increasing population density as well as the industrialization and urbanization accordingly. In this regard, the measures and precautions to be taken for the consequences of unplanned urbanization were identified. In addition, the types of biotope in Bayrampasa district were determined, and an inventory was formed for characteristic natural and exotic taxa in these biotopes. For this, plant samples were collected from different biotopes of Bayrampasa district during vegetation season, and then samples were dried according to the herbarium techniques and identified. The list of exotic plants was obtained from the Bayrampasa Municipality Parks and Gardens Directorate. In addition, chemical analyses of the soil samples taken from identified biotopes were performed by Quality Control and Research & Development laboratories under Parks and Gardens Directorate in Anatolian Side. Ombro-thermic diagram was prepared in determination of bio-climatic factors by using obtained meteorological data. Biotopes identified in Bayrampasa district include the parks, gardens of public buildings, industrial areas, road sides, railways and abandoned lands. A total of 236 plant taxa were determined, of which 121 were natural and 115 were exotic taxa. Asteraceae / Compositae family was fixed as the richest family for the natural taxa whilst, Rosaceae family was fixed as the richest family for the exotic taxa. Moreover, in last part of thesis, the necessity of expansion of urban ecological studies in all urban areas, particularly in Bayrampasa was emphasized.

Keywords: Bayrampasa, Biotopes, Ecological planning, Urban ecology

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

The Way of Yield Increasing and Cost Reducing in Agriculture: Smart Irrigation and Fertigation

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Abstract:

The plants can only use the 50% of the applied nitrogenous fertilizer. It has been observed that the dynamic fertigation applications help to improve the fertilizer effectiveness. In the dynamic fertigation approach, water and plant nutritional elements are calculated and determined according to the plant dry matter generation rate and root volume. Smart agriculture is an knowledge based decision making approach established upon quantification and observations of the changes in each level of production. With this system, saving can be provided by only supplying the plant's daily need of water and fertilizer and preventing the excess irrigation and fertilizing, so yield increase can be achieved by keeping away the plants from the stress conditions. Agricultural production can be increased five times by irrigation but shortening in water sources and decrease in quality reasoned by fast growing are restricted of irrigation which is the main user of freshwater sources. Increasing the water and fertilizer effectiveness with the smart irrigation techniques which can save water and fertilization management applications are the essential strategies to be able to reach the yield increase in order to supply the growing food needs of developing population and help to minimize the environmental damage. In the study, the researches and applications related to smart irrigation and fertilization were tried to be included in a wide scope and tried to keep a light to obtain higher yield with less water and fertilizer use in agriculture.

Keywords: Dynamic fertigation, Irrigation and fertigation use efficiency, Yield

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Effect of Human Factor to Reallocation Phase of Land Consolidation*

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Abstract:

Land consolidation is one of the important devices provide productivity growth in agricultural production. Land consolidation not only gather divided lands, but also enhances agricultural, technical, social and cultural standards of landowners. Land consolidation projects consist of various phases. Land reallocation is the most important, complicated, time-consuming one of these phases. Land reallocation is a process which is time-consuming, high execution costly and causes a lot of disagreements between landowners. In block reallocation process of land consolidation studies; after road and irrigation network is passed, plots covered by road and irrigation networks (block) are placed locationally according to claimed amounts by considering soil graduation. Regular parcels are created graphically according to shape of the blocks after this placing and given to the landowners. Reallocation and creating new parcels should be made equally and fairly between employers. Otherwise there will be rejections, farmer satisfaction will not be provided and project will not be accepted. From this point of view it can be said that block reallocation is the most sensitive and care demanding process of land consolidation. In this study, acquired results of block priority based reallocation method, which is applied by two different person, are compared. According to this comparison, effect of human factor to reallocation is studied.

Keywords: Land Consolidation, Land Reallocation, Interview Based Reallocation, Block Priority Reallocation.

**Acknowledgement: This study has been prepared by benefiting from the inventions of the project whose number is 114Y608 which supported by TÜBİTAK.*

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Molecular Characterization Wild Rhubarb (*Rheum ribes L.*) Grown in Van-Turkey by SSR and ISSR Markers*

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Abstract:

Turkey is among the countries rich in biodiversity and its approximately 30% of plant species are endemic. A wild rhubarb species (*Rheum ribes L.*), a member of the *Polygonaceae* family and naturally grown in the eastern regions of Turkey including Van province, is an endemic vegetable species consumed locally. Wild rhubarb is called with local names such as ışgın, ışkın, uşgun, uçgun, and uçkun by the people of the region. In this study, it was aimed to investigate this genetic material in this region and to reveal the genetic relations of the population in the region. For this purpose, latitude-longitude and altitude values were registered and the leaf samples of 80 plants were collected from four different locations where wild rhubarb spreading in the Van provinces. Ten SSR and 66 ISSR primers were tested, and clear readable bands were obtained from 7 SSR and 13 ISSR primers. The obtained data were evaluated as 1 (presence) and 0 (absence) according to band presence, and clustering analysis was performed using Jaccard coefficient in R computer statistical software and the population structure was evaluated with STRUCTURE 2.1 software. While SSR detected 41 bands with 100% polymorphism and an average 5.86 bands per primer, ISSR identified 120 bands with 98.72% polymorphism and average 9.23 bands per primer. The polymorphism information content values (PIC) of the primers ranged from 0.395 to 0.935 for ISSR, and from 0.478 to 0.888 for SSR. UPGMA analysis based on ISSR and SSRs divided all the accessions into two clusters; however, ISSR markers were more efficient in clustering the genotypes based on their origin. By using the STRUCTURE software for determination of population structure, two populations (at the number of hypothetical subpopulations, $K = 2$) were identified among the landraces.

Keywords: Characterization, Marker, Molecular, *Rheum ribes L.*, Wild Rhubarb,

*Acknowledgement: This study was funded by Yuzuncu Yil University, Scientific Research Project #2015-ZF-B081

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Evaluation of Phylogenetic Relationships of Turkish Sweet Corn (*Zea mays* var. *saccharata* Sturt.) Varieties by Using trnL-F Sequences

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Abstract:

Sweet corn (*Zea mays* var. *saccharata* Sturt.) is a globally important agricultural product, which is used for fresh consumption and as canned food with its tasty high sugar content. It is a good source of vitamin E and C, essential minerals and amino acids. Until recently, high quality sweet corn varieties have been developed by different research groups and corporations. Genotype of plants affect the nutritional quality of yield. Different genotype of same plant species can yield different nutritional quality at similar nutritional conditions. Determining of genetic similarities and phylogenetic relationships among these varieties may provide useful information for further breeding applications. In this study, 10 different Turkish sweet corn varieties were used to investigate their phylogenetic relationships. DNA isolations were performed with CTAB DNA isolation procedure. trnL-trnF intergenic spacer region of chloroplast genome was amplified and sequenced for further investigations. Phylogenetic analysis were conducted by constructing maximum likelihood (ML) tree with 1000 bootstrap replications. According to our results, studied Turkish sweet corn varieties are clustered in two groups. The first group is clustered with %82 bootstrap value and second group is clustered with a lower value compared to the first one. The similarity index is higher between the members of the first group. In conclusion, the analyzed 10 sweet corn varieties could be closely related to each other, suggesting that these varieties may be originated from the same parental individuals.

Keywords: Genetic analysis, corn germplasm, CTAB, phylogeny

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**The Effects of Cadmium on Mineral Nutrient Uptake and Accumulation of Aquatic Plant *Alternanthera reineckii* Griseb.****Ahmet YILMAZ¹, İbrahim İlker ÖZYİĞİT¹, Gizem Müzeyyen AYGÜN¹,
Onur YILDIRIMER¹, Bihter UÇAR¹, Ecem BALCI¹, Fatih TABANLI²**¹Marmara University, Faculty of Science and Letters, Department of Biology, Istanbul, Turkey²Istanbul University, Faculty of Science, Department of Biology, Istanbul, Turkey

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Abstract:

Alternanthera reineckii Griseb., of Amaranthaceae family is a member of genus *Alternanthera* which contains 170 species. It's an aquatic plant also known as joyweed or Joseph's coat and commonly occurs in tropical Americas. Its ability to grow in low light and CO₂ conditions makes it a desirable plant for ornamental use in aquariums. It's a well-known fact that accumulation of heavy metals in aquatic ecosystems is undesirable for almost all plant species and results in chlorosis, necrosis or even worse; death. However, some species tend to develop better adaptability to such circumstances. Cadmium, being one of the most toxic heavy metals for organisms is known to be a strong genotoxic agent and could lead to DNA mutations and various other undesired outcomes as mentioned above. In this study, *A. reineckii*'s response to different levels of cadmium stress (100, 200 and 400 µM concentrations) was observed. Plants grown in water tanks for a period of 2 weeks are then exposed to different concentrations of Cd and resulting accumulation in leaves, roots and stems were measured by using ICP-MS. The accumulated Cd levels are then compared with overall health of the plant and results were discussed. The results revealed chlorosis and leaf senescence morphologically, while physiologically different levels of Cd accumulation suggested a correlation with mineral nutrient uptake. Plant tissues with high Cd accumulation presented lower mineral nutrient uptake, conversely lower Cd accumulation lead to higher mineral nutrient uptake.

Keywords: Aquatic plant, Heavy metal, Joyweed, Plant stress, Water pollution

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Heavy Metal Concentrations of Some Weeds Growing around Mercury Mine Waste Mounds in Kurşunlu-Konya, Turkey****Ayşen AKAY, Murat KARACA, Çağdaş AKPINAR, İsmail KESKİN, Yavuz BAĞCI***Selcuk University, Faculty of Agricultural, Department Of Soil Science And Nutrition Program Of Plant Nutrition, Konya Turkey**e-mail: aakay@selcuk.edu.tr***Abstract:**

Phytoremediation is seen as an alternative green solution to cleanup of sites contaminated with heavy metal. Selection of plant materials is an important factor for successful field phytoremediation. Weeds heavy metal uptake and accumulation depend on the density of available metals in waste soils. In this study was carried out to evaluate the phytoextraction abilities of eight weed existing in pastures adjacent to a mercury waste mound, which stocked on open field surveyed in Central Anatolia. The names of the eight weed species collected from the vicinity of the waste soil dump site are as follows respectively: Compositae *Cardus nutans* ssp. *taygateus*, Euphorbiaceae *Euphorbia*., Boraginaceae *Onosma stenolobim*, Labiatae *Stachys cretica* ssp. *anotolica*, Plantaginecea *Plantago lanceolata*, Leguminosae *Trifolium trigonella*, Compositae *Echinops* sp., and *Astragalus branchyptenis*. Also we collected soil samples existing in the area surrounding the dump site. The chemical properties and heavy metal contents of the soils were investigated. The average total contents of Fe, As, Pb, Co, Ni and Cd in weeds are between 0.056-0.592 %, 0.2-9.7 mg/kg, 0.27-20.08 mg/kg, 0.46-2.57 mg/kg, 1.9-11.1mg/kg and >0.01-0.25 mg/kg, respectively. The average total contents of Zn, As, Pb, Co, Ni and Cd in soils are between 86-113 mg/kg, 22-183mg/kg, 24.1-97.7mg/kg, 13.8-29.0mg/kg, 37.8-99.1mg/kg and >0.1-1.7mg/kg, respectively. The results of the analysis showed that soils had pH of 5.57-6.55, lime content of 1.73-8.16%, organic matter of 2.03-4.96 and had sandy loam textures. Among the weeds, those with the highest Pb, Ni and As intake were *Astragalus branchyptenis*.

Keywords: Weed, mercury waste mound, heavy metals, phytoremediation

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Non-Wood Forest Products Management in Turkey****Kenan OK¹, Yusuf Ziya TENGİZ²***¹Istanbul University, Faculty of Forestry, Department of Forest Economics, Istanbul, Turkey**²Kadir Has University, Kadir Has MYO, Department of International Trade, Istanbul, Turkey**e-mail: yusuf.tengiz@khas.edu.tr***Abstract:**

Non-wood forest products such as specific goods or services are considered out of wood raw materials which are found in nature. Some of the products which are cultured because of high demand and subjected to agricultural production. Thyme species kind of aromatic drinks and primrose a kind of ornament plant are significant examples. However, most of the non-wood forest products are grown and utilized on natural habitat and environment. Turkey has a great potential and capacity on non-wood forest products due to advantage of huge biodiversity. In addition, large variety of non-wood forest products utilization has being existed in Turkey that forested land utilized for history of human being. As a result, it is difficult to say that sustainable management of such products have not been guaranteed yet in this country. As a basis, capacity of non-wood forest products in Turkey is subjected in this paper. Non-wood forest products management institutional status has been explained in whole government managerial structure. In country's forest management plans, place of non-wood forest products and regulations of the products utilization has been also discussed. Finally, range of non-wood forest products have been clarified and its organization has been established although it has been keeping on discussed that sufficiency or insufficiency of sustainability of structure of utilization.

Keywords: Forest management plans, Non-Wood forest products, Turkish forestry

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Physical and Chemical Modeling of Toxic Electrical Insulating Liquids Decomposition and Reduction of Chlorine-Containing Substances Concentration in The Gas-Phase**

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Abstract:

Some industrial facilities and equipment of electrical industry in our country have waste electrical insulating liquids, which based on polychlorinated biphenyls (PCBs) and other toxic chlorine-containing substances. These liquids are using in transformers and capacitors for cooling and insulating. Problem of these waste liquids utilization remains unresolved. Practical researches of utilization PCB-containing substances are expensive and unsafety. Also chemical analyze of their possible decomposition products requires high-tech modern laboratories. According to these problems, calculation methods of studying destruction of PCBs using data on their thermochemical properties were considered, and studies carried out using thermodynamic modeling. This makes it possible to obtain the necessary information about composition of gas-phase emissions, about forming and behavior of various toxic substances in a wide range of temperature, pressure and the ratio of initial components in condensed chlorine-containing system. In this work physical and chemical modeling of thermodestruction process of polychlorinated biphenyls were implemented. According to this work, the compounds were found and equilibrium concentrations of chlorine-containing toxic organic substances were calculated. Also the energy parameters of the decomposition of polychlorinated biphenyls were determined. At 300-900 °C calcium oxide reacts with non-aromatic chlorinated hydrocarbons and forms low molecular compounds. Dechlorination of PCB is accompanied by the replacement of chlorine atoms by hydrogen. Detachment of chlorine atom can occur from any position of the PCB molecule, but at different speed, and it allows detoxicate of highest toxicity PCBs. Based on these results, technological scheme for the conversion of chlorine-containing toxic organic substances was developed.

Keywords: Dechlorination, Decomposition, Physical and chemical modeling, Polychlorinated biphenyls, Thermodestruction, Toxic insulating liquids

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**The Comparison of Antioxidant Activity of Phenolic Extracts from Wheat, Oat, Rice, Corn Brans and Sesame Hull in Sunflower Oil*****Fatma UÇAR, Ahmet ÜNVER***

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Abstract:

Wheat, oat, rice, corn brans and sesame hulls are the by-products of the industry. The antioxidant activity of the phenolic extracts of these products were compared in sunflower oil for the stability tests. Rancimat test and Schaal Oven Test (60°C) was applied for comparison of the antioxidant activity of the phenolic extracts. Peroxide value, *p*-aniside value and K232-K270 absorption values was determined in the duration of the storage. Also, *L**, *a** and *b** values was measured to get data on the change of the color of the sunflower oil samples. Percent inhibition of DPPH of BHT was 84,27% and was too much higher than the extracts tested. The lowest free radical scavenging activity was obtained for the oat bran extracts (2,36%) and the highest was for sesame hull extracts (11,07%).

Keywords: wheat bran, oat bran, rice bran, corn bran, sesame hull, antioxidant activity, oxidation, stability.

**Acknowledgement: This study is a part of Master Thesis of Fatma Uçar. This study was supported by Necmettin Erbakan University, Scientific Research Projects Concl. Project number is, 161319015*

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Amino Acids Composition of Mare's Milk Produced in Alamedin Gorge of Kyrgyz Republic

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Abstract:

The health-promoting properties of koumiss, a traditional drink of nomads produced from mare's milk, are well-known and reported in literature. High nutritional and medicinal properties of koumiss can be explained by the composition of mare's milk, which is used for its preparation. Chemical composition and amino acid profile of mare's milk produced at Alamedin gorge of Kyrgyzstan were studied during milking season (May, June and July). The amino acid composition was also investigated using reversed-phase HPLC. Most abundant amino acids were glutamic acid (0.412-0.463 g/100g), leucine (0.194-0.223 g/100g), lysine (0.195-0.227 g/100g) and ornithine (0.002-0.006 g/100g) was in a small amount. The percentages of essential amino acids in protein of mare's milk were 46%, 46%, 47% for May, June and July respectively. The results of the study have shown that the highest contents of the nutritive compounds were found in the mare's milk obtained in July.

Keywords: : Amino acids, Chemical composition, Chromatography, Mare milk.

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Determination of The Effects of Addition of Freeze Dried Powdered Pickle for Different Ratio on Bovine Meat Ball's Physico-Chemical and Sensory Properties****Sertaç KEÇEÇİ¹, Cemalettin SARIÇOBAN¹, Hasan İbrahim KOZAN²**

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Abstract:

Meatball is a delicious product which is consumed extensively due to its fast and ready production in our country and in the world. In most parts of our country, meatball is served with pickles and this service is appreciated by consumers. In this study, the effects of freeze-dried cabbage, cucumber, pepper and beet pickle samples added in meatball mixture in 0% (control), 1% and 2.5% ratios were investigated and the comparison of the pickles was aimed. For this purpose color, pH, water activity (aw), moisture, weight loss, diameter change and sensory analysis were performed. The ratio and type of pickle were statistically significant for all analyzes except for moisture and water activity. It is thought that the use of pickle powders in meatball will be appreciated by consumers.

Keywords: *Meatball, pickle.*

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

The Effect of Oat Bran Addition in Different Ratio, on The Texture and Color Values of Heat Treated Sucuk

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Abstract:

In this study, the effect of addition of oat bran, as an important dietary fiber source, in sausage which is consumed very much in our country was investigated. For this purpose, sausage dough were separated to 6 different groups and than 0 %, 2.5 %, 5 %, 7.5 %, 10 % and 12.5 % of oat brans were added to separated groups, respectively. The mixtures were stuffed in to national casing by using filling machine. Sucuks were placed in a ripening room and ripened for 24 hours and then heat treated until the internal temperature reached up to 72 °C. Moisture, pH, texture and color analysis were applied to sausage samples which were dried for 12 hours at 18 °C.

Keywords: : Dietary fiber, color, sucuk, texture

**Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress
Research on The Compound of Kyrgyzstan Honeys**

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Abstract:

In this research, Manas University from Kyrgyzstan; It was aimed to determine some chemical characteristics of the different types of honeys provided from different regions and to examine whether they are in compliance with international legislation. The first party had an analysis of 19 flowers in May and July 2014, and 27 flowers in the second part and 36 flowers in December 2014. For this purpose, chemical properties such as sucrose, fructose, glucose, fructose / glucose (F / G), water insoluble solids, HMF, proline, naphthalene, total phenolic substance, antioxidant activity (in mg / 100 g honey quercetin equivalent) Moisture content, pH value, water soluble dry matter (Bx), electrical conductivity and Hunter color values were determined. Saccharose in the first part of honey samples; Minimum 1.29% and maximum 4.12%, and in the second-party examples 1.34% and 4.12%, respectively. According to the European Union Directives and Turkish Food Codex Honey, honey should not hang sucrose 5 (g / 100g). All Kyrgyz honeys in the study are suitable for Turkish Food Codex (TGK) in terms of sucrose. Moisture in the first part of honey samples; A minimum of 15.27% and a maximum of 19.73%, and in the second party cases of 13.84% and 17.92%, respectively. According to the European Union Directives and the Turkish Food Codex Honey Communiqué, honey should not exceed 20% moisture content. Tem Kyrgyz honeys are suitable for the Turkish Food Codex (TGK) in terms of moisture. The water soluble dry matter values of honey samples were determined as 64.62% maximum 79.43% in first party samples and 67.03% and 80.53% in second party samples. Water soluble dry matter, when present in abnormal values, is understood to be an important indicator of transmission in the wart. All analyzed Kyrgyz honeys are suitable for TGK. The electrical conductivity value in flower honeys should be less than 0.8 mS / cm. The above values are found in pine honey. The electrical conductivity values in the 1st and 2nd party flower honeys of the research are suitable for TGK. This is proof of the nature of the Kyrgyz honeys. Hunter L, a and b values determined in all samples are in compliance with TGK. The proline value in all Kyrgyz honeys is over 300 mg / kg in TGK.

Keywords: Proline, Electrical conductivity, Antyoixidan activity, Diastase activity, F/G

*Acknowledgement: This study was funded by Kyrgyzistan Manas University, Scientific Research Project # KTMU-BAP2014 FBEO

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Meat and Meat Products in Turkish Culinary Culture

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Abstract:

Meat and meat products are the main components of a balanced and healthy diet. Throughout the history Turks were generally expertise in animal husbandry, so they were benefited from the meat of these animals every season and also benefited from milk during lactation period of these animals. This lifestyle has enabled the Turkish food culture to shape on animal originated foods, especially meat. There are several kinds of food that are prepared with only meat, and also many of the dishes are prepared with meat to enriched flavor and substantiality of meals. The whole world has accepted the fact that the skills of the Turks on the subject of meat and meat dishes transformed the geographies they lived into a kebab geography and that the world's most delicious meat dishes were made by the Turks. This approach is not only an assessment of the last century. For centuries the meats and meat dishes which were cooked, served and presented to their guests by the Turks have entered the traveler's travelbooks and travels of the ambassadors with exaggerated expressions. Today in Turkey the multitude of meat restaurants in our country and their reputation among the people is important in terms of demonstrating the continuing tradition. Because meat is an exceptional food that adds joy to joy, health to health, sincerity to conversation of Turk's, and it is one of the cornerstones of Turkish culinary culture.

Keywords: Meat, Meat product, Nutrition, Health, Food culture

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Halal and Healthy Food****Selman TÜRKER**

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Abstract:

In all beliefs, there are some written or non-written rules governing human life. There are some foods that are considered praiseworthy and forbidden in most beliefs about food and beverages. Especially when examined in the context of Islam, Judaism and Christianity, it is seen that there are many judgments about this situation. Food items that are forbidden in different beliefs may be different or occasionally similar. When we evaluate the situation in terms of today's technology, production techniques and additives, the concepts of 'Halal Food' in Islamic religion and 'Kosher Food' in Judaism become clear. Halal food, according to the religion of Islam; Foods are allowed to be eaten. Halal refers to the preparation of foods under Islamic rules, from the field, to the dinner table. Halal food means that the item has no conflict in religious, hygienic and healthiness aspects. Nowadays, the Halal status of many foodstuffs, raw materials or additives can be clarified by Qur'an, sünnet and comparison, It also turns out that there is a significant relationship between Halal Food and Safe Food. Food additives are the most problematic area in halal food. In this review, according to the Semavi religions, especially Islam; Halal Food, Healthy Food and Food Security concepts have been evaluated.

Keywords: Halal food, Healthy Food, Food Security

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Fluorescence Spectroscopy for Classification of Cow, Yak, Goat, Sheep and Pig Meat

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Abstract:

Potential of fluorescence spectroscopy was evaluated to classify meat samples. Meat samples were taken from muscles *Gluteus medius* (GM), *Longissimus dorsi* (LD) and *Semitendinosus* (ST) of cow, yak, goat, sheep and pig meat. Chemical characteristics of the meat samples were determined, including moisture, dry matter, fat and protein. The fluorescence emission spectra of tryptophan, riboflavin and vitamin A of meat samples were recorded in the range of 305–500 nm, 410–700 nm and 340–540 nm with the excitation wavelengths at 290, 382 and 322 nm, respectively. Multivariate statistical analysis, such as a Principal Component Analysis (PCA), Partial Least Squares Regression (PLSR) and Partial Least Squares Discriminant Analysis (PLSDA) were applied to the fluorescence spectra of the samples. The results of the statistical analysis showed that these meat samples were significantly different from each other. Moisture content with $R^2=0.83$, protein content with $R^2=0.86$, and fat content with $R^2=0.90$ were predicted applying PLSR to the fluorescence spectra. The results of PCA proved the close relationship between the fluorescence spectral data and chemical parameters of the meat samples. The PLSDA applied at 305–500 nm fluorescence spectra showed 94.3, 94.3, 100 and 94.44 % of a good classification for cow, yak, goat and sheep meat, respectively. Good results were also observed using 410–700 nm and 340–540 nm fluorescence spectra.

Keywords: meat, chemical parameters, fluorescence spectroscopy, multivariate statistics

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Sublethal Toxicity of Formaldehyde in Common Carp (*Cyprinus carpio* L., 1758) *****Ertuğrul KANKAYA¹, Burak KAPTANER²**¹*Yuzuncu Yil University, Faculty of Fisheries, Van, Turkey*²*Yuzuncu Yil University, Faculty of Science, Department of Biology, Van, Turkey**e-mail: ekankaya@yahoo.com***Abstract:**

Formaldehyde (37–40% formalin) is widely used as an anti-parasitic agent and a general disinfectant in aquaculture and ornamental fish breeding due to its toxic capacity. This study was conducted to determine the chronic toxic effects of formaldehyde on carp. The carp (*Cyprinus carpio*) fish with an average weight of 9.8 ± 3.1 g and an average fork length of 7.3 ± 0.7 cm was chronically exposed to formaldehyde using a semi-static test method. The test medium was kept at 23 ± 1 °C with thermostable heaters. Sub-lethal concentrations were applied at 0, 20, 30, 40 mg L⁻¹. The bioassay was continued for 60 days. Fish samples were taken at 15, 30 and 60 days for analysis and evaluation. The fish were dissected and the liver and gill filaments were removed. Histological examinations and GSH, GST, SOD, CAT activity levels were determined in the removed tissues. Morphological changes in the tissues, thickening of the gill lamella, interlamellar spaces, fatty degeneration in the liver, necrosis. GSH decreased significantly in both tissues at 15 and 30 days at all concentrations ($p < 0.05$). With this study, it can be considered that formalin has a slight toxic effect for the criteria examined in carp. Because formalin is widely used in aquaculture, avoiding uncontrolled and unnecessary use will reduce the adverse biological effects that may occur.

Keywords: Antioxidant, *Cyprinus carpio*, Formalin, Histology, Toxicity,

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Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Investigation of The Effects of Cypermethrinin Van Fish (*Alburnus tarichi* Gldenstadt 1814) on Some Hematological Profiles

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Abstract:

All organisms in the aquatic environment are affected by changes in environmental conditions. The use of chemicals in both agricultural and aquatic applications has made contamination of these chemicals in the aquatic ecosystem inevitable. Therefore, these toxic pollutants, which are heavily used, can have undesirable destructive effects on the hematological parameters of non-target organisms such as fish. In this study, the Van fish (*Alburnus tarichi* Gldenstadt 1814) which has adaptation to live in the fresh waters flowing in the lake and in the lake, is intensely consumed in the region. In our study, cypermethrin, a pyrethroid, was studied by comparing to the hematological profile control group of Van fish (*Alburnus tarichi* Gldenstadt 1814) exposed to sub-lethal dose for 24,48,72,96 hours.

Keywords: *Alburnus tarichi*, Cypermethrinin, Hematologic profile, Pyrethroid, Van Fish,

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Economic Performance of Robotic Milking****Aykut ÖRS¹, Cennet OĞUZ²**

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Abstract:

Usage of robotic milking systems is increasing more and more to decrease labor input and to enhance life quality of dairy farmers. Over 35.000 milking robots are operational on dairy farms around the world today, heading by West Europe, United States of America, Canada and Australia. According to a study on 2016, there are 54 milking robots in 21 farms in Turkey. Its adaptation rate in Turkey is slow because usage of robotic milking systems is new and there is not enough information about economic performance of robotic milking systems against conventional milking systems. In this paper, literature about economics of robotic milking is reviewed to compare with conventional milking systems. Data of investment cost, labor input, energy consumption, feed cost, milking frequency, milk yield and net income criteria's from 33 studies on 13 different countries between 1998-2017 are compiled as a table. According to the table, comparison is done for each criteria by years and recommendations for future are done.

Keywords: Comparison, Economic performance, Robotic milking systems

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Evaluating Agricultural Cooperation Potentials and Agricultural Structure of Turkey and Kyrgyzstan

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Abstract:

While the rapid growth of the human population has made agricultural products more important, agricultural trade has also gained an international dimension. Many countries must to meet this need by purchasing agricultural products that they cannot completely or adequately produce, from other countries. International trade of agricultural products plays an important role in especially developing countries. On the other hand, it is an important government policy to develop cooperation in all areas between the Turkic Republics. The agricultural sector is also an area of potential cooperation in this respect. In this context, the study aims to examine the agricultural production structures of Turkey and Kyrgyzstan and to identify areas of potential cooperation in agriculture. For this purpose, the agricultural production potentials, the agricultural sector production-consumption and trade structure of both countries were compared through the FAO data and, the potential areas for cooperation were examined in detail.

Keywords: Agricultural potentials, Agricultural structure, Kyrgyzstan, Turkey,

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Government Supports on Livestock Products in Oecd and Kazakhstan****Savaş ÇEVİK¹, Ali KARABACAK²**¹*Selcuk University, Department of Economics, Konya, Turkey*²*Selcuk University, Faculty of Agriculture, Konya, Turkey**e-mail: akarabacak@selcuk.edu.tr***Abstract:**

Government supports on livestock production are an important part of agricultural supports in worldwide. Government payments are expected to affect the production level and value of livestock products as meat and milk which are basic human food sources. The main objective of the study is to reveal the efficiency of governmental supports on livestock products with respect to the production level and production value in the cases of meat and milk. In the study, we use the data from OECD Producer Support Estimates Database to compare the government supports on livestock among OECD countries and to evaluate the position of Kazakhstan. The first section of the study presents an overview of agricultural supports among countries which comprehended in the database. The second section evaluates the position of Kazakhstan in livestock products in the case of meat and milk products. We examine governmental supports especially on milk, beef, poultry meat and sheep meat through cross-country comparisons for the last year data and time series. The study reveals that Kazakhstan has high level of agricultural support as a share of GDP although total support estimates as a percentage of the agricultural value-added is low. On the other hand, the support estimates on livestock products in Kazakhstan is lower than most of the OECD countries.

Keywords: OECD countries, Livestock production, Kazakhstan

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Agromorphological Characteristics and Powdery Mildew (*Erysiphe polygoni*) Reactions of Some Pea Genotypes under Sivas Ecological Conditions

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Abstract:

Turkey has rich genetic sources by means of crop species and one of those is forage peas. Although, several investigations has been conducted on the Turkish forage pea genetic resources, there is further need to conduct more research on these genetic resources to evaluate agronomic performance and quality traits. For this reason the main objective of this research is to find the promising forage pea lines and to use these lines to develop early flowering with higher forage, grain yield potential, better quality and powdery mildew disease resistance that are appropriate for the Sivas ecological conditions. We researched some important agronomic and morphological plant characters of 4 commercial forage pea and 60 forage pea genotypes collected from different regions in Turkey. All forage pea genotypes were grown under Sivas Region conditions. High germplasm variability was observed for agro-morphological traits and powdery mildew disease resistance. There was high diversity among the landraces for flowering time (60-83.3 days), plant height (41-128.7 cm), first nod height (16.7-73.3 cm), number of branch (1-2), number of the pods per plant (1.3-12.3), number of the seed per pod (3.3-8.0), number of the seed per plant (6.7-38.7), forage yield (694.7-1585.0 kg/da), hay yield (198.2-466.3 kg/da), biological yield (8.6-53.7 g/m²), grain yield (112.3-508.6 kg/da) and powdery mildew disease resistance (0-10). According to results of this study some diverse genotypes could be used for some forage pea breeding programs aimed high forage yield, yield components and powdery mildew disease resistance.

Keywords: Forage pea, Agro-morphological traits, Powdery mildew disease, Fungi

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Analysis of Financial Performance in Dairy Enterprises;
The Case Study of Konya, Turkey*****Cennet OĞUZ, Aysun YENER**

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Abstract:

Sustainability and development of the dairy enterprises are depended on competitiveness. Determination of the performance of the enterprises is required on measurement and analyses of the financial performance of the enterprises. The ability of dairy enterprises to continue and grow is dependent on competitiveness. It requires that the financial performance of the farm enterprises be measured and analyzed in order for the enterprises to be able to detect the competition power in a healthy manner. The aim of the study is to analyze the financial performance of the dairy enterprises in Konya province by determining the capital structure. Çumra, Karapınar and Ereğli districts constituted 15% of the number of bovine animals, were selected by using purpose sampling method. The number of dairy cattle in these enterprises constituted the main frame of the population the primary data collected from 125 dairy farm enterprises with questionnaire technique through stratified sampling method with 95% confidence interval and error margin of 5%. The capital structure of the enterprises surveyed in the research area was classified according to their functions and the average active capital of the enterprises was calculated as 845,330.84 \$. The 67.87 % of the active capital is composed of land capital, 31.70 % is composed of fixed enterprises capital and 0.43 % is variable working capital. The economic profitability level (EP) was determined as 6.90% and the financial profitability level (FP) indicated the success of the enterprise was calculated as 7.06%. The capital turnover rate, an important indicator in the success.

Keywords: Dairy enterprises, Financial performance analysis, Konya, Turkey

**Acknowledgement: This study was supported Selcuk University, Scientific Research Fund (BAP) Project No: 15401020*

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

**Food Safety Consultancy Level of Rural Women:
Case Study Hüyük County of Konya, Turkey**

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Abstract:

This research was conducted to determine the attitudes and behaviors of women living in rural areas on food safety in terms of producing, purchasing and using food. The main frame of the study is the women who have different income groups living in the Hüyük county of Konya province. The sample size determined as a 100 according to "Unclustered Simple Random Sampling Method Based on Main Mass Ratios". The data of the research were collected from the women using the survey technique as voluntarily and willingly. The tables were created and interpreted in the analysis of the data. Binary relationships were analyzed by "Chi-square test". According to the results of the research, 62% of the women are conscious of food safety and a high level of relationship between income and education levels of women and food safety consciousness levels is determined.

Keywords: Food safety, Rural women, Konya,

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*
Confectionary Pumpkin Farming and Economics in Turkey

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Abstract:

In addition to consuming the fruits of the pumpkin as a vegetable, the seeds are also consumed both in the production of edible oil and as appetizer. Confectionary pumpkin is a highly valuable species with high content of unsaturated fatty acids, minerals, vitamins and 40-50% fat content. Turkey has 1.500.000 tons of crude oil production and the crude oil demand of the country is around 3.033.000 tons in 2014. According to data from the year 2015, the country spent 1.4 billion dollars on importing crude oil -. On the other side, as in many parts of the world, there is a widespread appetizer culture in Turkey. Pumpkin seeds consuming appetizer in Turkey are in the 6th place after almonds in the order of the most consumed appetizer. The confectionary pumpkin has been produced in Turkey for many years and has a production value of 41.612 tons - in 61.500 hectares. Furthermore, this increases both the appeal of producers to look for alternative products and the widespread recognition of products from the food industry (chocolate, confectionery, bread and pastry industry and edible oil), medicine (prevention of prostate growth), cosmetics and animal feed industry. It is anticipated that this product will have a tendency to increase due to its unique advantages in production in the coming period. In this study, it has been tried to reveal the general situation of confectionary pumpkin farming in Turkey, which has been spreading for a long time as a traditional product for many years.

Keywords: Appetizer, Confectionary pumpkin, Mineral mater, Oil content

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Investigation of the Water Pumping Windmills for Agricultural Irrigation

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Abstract:

In rural areas, it is aimed to pump water effortlessly and without electricity by using a small, simple and economically designed small wind turbine driven by pumps used for domestic and agricultural irrigation purposes. For this aim wind turbine, tower and pump designs have been made and one prototype has been produced. All of the system performance was investigated under different working conditions.

Keywords: Windmill, Water pump, Agricultural irrigation

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Availability of Small Unmanned Aerial Vehicle for Phenotyping Selection in Cereal Breeding Nurseries****Muhammet KARAŞAHİN¹, Ahmet SAMANCI²**

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Abstract:

It is necessary to have productive and true phenotyping to bring out the usefulness of breeding studies. Phenotyping is the main reason of the obstructions experienced during breeding studies. Despite the fact that, current methods that are used for phenotyping selection are still too slow, over costing, manpower based and generally very destructive. Plant phenotype is formed from plant genome and environmental (biotic/abiotic) interactions. During the phenotyping studies, many plant specifications are measured such as, following the plant growing, canopy structure, physiology, productivity, resistance against diseases and pests. Considering these information, it is not possible to reach fast and precise results by using traditional methods, that includes visual and manual measurements. To succeed of thousands parcel breeding programs are depending on using high throughput phenotyping (HTP). It is an opportunity to use the small unmanned aerial vehicle for high throughput phenotyping selection with many advantages like to put the device into use very fast and low cost for multiple times, to set the altitude and flight time according the user's needs, to take high resolution images, and to be available for small scale studies. By using small unmanned aerial vehicle, it will be possible to eliminate the obstacles for developing varieties and determining the super genotype specifications. At the same time, there will be new opportunities for plant breeders and agronomists to improve the new methods. This study will shed light on the elimination of problems in phenotyping studies, one of the biggest obstacles to breeding trials.

Keywords: Cereal breeding, Phenotyping, Small unmanned aerial vehicle (sUAV)

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Review of Eggplant (*Solanum melongena* L.) Androgenesis Studies in The World and Turkey

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Abstract:

Eggplant (*Solanum melongena* L.) from Solanaceae family is one of the most produced vegetable species worldwide. The high crop yields are achieved through F1 hybrid varieties needing homozygous parent lines. Androgenesis techniques including anther and isolated microspore culture (IMC) can help to create fully homozygous lines for eggplant breeding only in one generation, which is one of the main breeding objectives. This study deals with the review of eggplant androgenesis studies carried out in the world and Turkey. The first anther and IMC studies of this species were reported in 1973 and 1979, respectively, in the world, while 1991 and 2009 in Turkey. Since then, the effects of genotype, plant growth conditions, flower bud morphology, microspore developmental stages, thermal shocks, culture conditions and culture media including different types and concentrations of carbohydrate, osmoticum, plant growth regulators or other additives such as activated charcoal, epibrassinolide and arabinogalactan proteins were investigated to increase the haploid efficiency in both culture types. Even though the certain advantages of IMC compared to anther culture like the higher feeding capacity, higher yield of haploid plants per anther, and especially the ability to avoid unwanted growth of diploid regenerants derived from anther wall or other somatic tissues, eggplant is accepted as a recalcitrant species to direct microspore embryogenesis in IMC. Haploid plant production in eggplant IMC is only possible with the help of callus phase on today's terms. Therefore, anther culture has still been preferred and widely used for more efficient haploid plant production in eggplant today.

Keywords: Anther culture, breeding, eggplant, haploid, microspore culture, *Solanum melongena*

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Genetic Diversity of Some Pepper Genotypes of Different Resistant Level against *Phytophthora capsici* L. Using by SRAP and SSR Markers

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Abstract:

Phytophthora capsici L. is the most important pepper disease in the world. There are different genetic resources that resistant against *P. capsici*. Determination of the phylogenetic relationships of resistant /tolerant pepper genotypes is important for transferring R gen to culture varieties. In this study, 16 pepper genotypes with different resistant level across *P. capsici* were identified by phylogenetic associations of SRAP (Sequence-Related Amplified Polymorphism) and SSR (Simple Sequence Repeat) molecular markers. In the study, 27 SSR primer pairs and 144 SRAP primer combinations were used. A total of 36 polymorphic DNA bands were obtained with 12 SSR primers, whereas 15 of the SSR primers formed a monomorphic band. However, from the combination of 81 SRAP primers in which DNA amplification occurred, 31 of 254 polymorphic DNA bands were obtained. Of these bands, 99 (39%) were monomorphic and 155 (61%) were polymorphic DNA bands. With the SSR marker system, some of the 16 pepper genotypes (PM-217 KM2-11, PerennialLS-279, PBC-178, Demre, PBC 179 KMAE-12) did not separate. The SRAP marker system and 16 pepper genotypes are genetically different from each other. In both DNA marker systems, resistant to *P. capsici*, moderately resistant and susceptible genotypes did not form distinct groups. However, it has been determined that the genotypes CM 334, PBC 178, PM 702, Perennial and PM-217 used as resistance genes against *P. capsici* are genetically different.

Keywords: Genetic diversity, Pepper, *Phytophthora capsici* L., SRAP (Sequence-related amplified polymorphism), SSR (Simple sequence repeated),

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Evaluation of Some Wheat Genotypes Grown in Sivas Ecological Conditions in Term of Some Nutrient Contents

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Abstract:

This research was conducted in the research field of Sivas Vocational School, Department of Plant and Animal Production, Cumhuriyet University in 2013/14 and 2014/15 growing season in Sivas. In this research, 25 wheat genotypes and commercial varieties gathered from different regions of our country were grown in randomized complete block design with the aim of determining the level of nutrients and some yield components. In the survey, grain yield, 1000 kernel weight, macro and micro nutrient contents like nitrogen (N), phosphorus (P), potassium (K), iron (Fe), zinc (Zn), Cupric (Cu) and manganese (Mn) were examined in wheat genotypes and commercial varieties. As a result of the research, high level of variation was seen among genotypes in terms of nutrient content and yield components. Nutrient contents showed variance as N (%2.58-4.67), P (% 14.79-34.18), K (% 3.09-4.17), Fe (86.4-204.3 mg/kg), Zn (42.0-92.16 mg/kg), Cu (12.67-24.26 mg/kg), Mn (49.88-142.79 mg/kg), grain yield (188.3-503.7 kg/da) and 1000 kernel weight (31.1-61.2 g). There were statistically significant differences between varieties for all studied characters in the research. According to the mean of two years results the highest grain yield were obtained from Odeska (503.7 kg/da), Kinacı-97 (468.3 kg/da), CÜSİV-5 (428.4 kg/da), Karahan-99 (426.7 kg/da) varieties. When grain yield and nutrient contents are concerned Odeska, Karahan-99, Gün-91, Konya-2002, CÜSİV-5, CÜSİV-12 and CÜSİV-13 cultivars are the most suitable under Sivas ecological conditions.

Keywords: Wheat, yield components, nutrients element

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Effects of Different Nitrogen Doses on Plants Growth and Turf Quality in Some Warm Season Turfgrass*****Uğur BİLGİLİ, Sinem ZERE, Fikret YÖNTER***Uludag University, Faculty of Agriculture, Field Crops Department, Bursa, Turkey**e-mail: ubilgili@uludag.edu.tr***Abstract:**

This research carried out on turf research plots at Uludag University Research Farm, Bursa (40°11' N, 29°04' E), between 2015-2016 years. The experimental design was a split plot with turfgrass species as a whole plot, N doses as the sub plots. Whole plots consist of 3 warm season turfgrass species; Zenith (*Zoysia japonica* Steud.), Gobi (*Cynodon dactylon* L. Pers.), Seaspray (*Paspalum vaginatum* Sw.). Nitrogen was applied at rates of 0, 2, 4 and 6 g N m⁻² during the 7 months (April-October). Turf color and quality of each plot were rated visually and clipping weight was determined. In addition, on set of dormancy and color retention in fall and spring green-up were evaluated. The research was conducted to determine the effects of applied nitrogen doses on plant development and turf quality. Considering two years results showed that Zenith was found successful for color and quality parameter according to Gobi and Seaspray. N applications at 2 g m⁻² gave above the acceptable color and quality of the turf. Zenith identified as the first species to exit from dormancy.

Keywords: Nitrogen, Warm Season Turfgrass, turf color, turf quality

**Acknowledgement:* This study was funded by Tubitak (The Scientific and Technological Research Council of Turkey), Scientific Research Project # 1120745

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Determination of the Effect of Humic Acid on Growth and Development Parameters of Parsley (*Petroselinum sativum* Hoffm.) Grown in Boron Soil

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Abstract:

The effects of two different boron (B) concentrations on parsley (*Petroselinum sativum* Hoffm.) growth parameters and its nutrient composition were determined, together with potential interactive role of humic acid. The experimental design consisted of 5 sets with four replicate samples as control group (C), which contained Hoagland solution only, and four experimental treatments, two of which, B1 and B2, had boron + Hoagland solutions with 15 and 150 ppm B respectively, and the other two, HB1 and HB2, had the same boron concentrations and additionally 10 ml humic acid for each. Examination of growth parameters showed that parsley is resistant to 15 ppm boron concentration, which cause a significant increase in plant heights compared to other treatments. Application of humic acid caused significant decrease of plant heights in HB2. Nutrient analysis results proved that humic acid increased Fe and Zn content in parsley significantly in HB2 compared to C, B1 and B2 where Mn uptake decreased in the same treatment. The result showed that parsley may grow and tolerate to boron containing soil, and humic acid had no spesific role on the uptake of B from soil to the parsley leaves.

Keywords: Parsley, (*Petroselinum sativum* Hoffm.), Boron. Humic acid, Nutrients.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

The Effects of Cisaprid and Bethanechol on Abomasal Motility of Healthy Calves

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Abstract:

Diseases of cattle that cause motility disorders of the gastrointestinal tract like paralytic ileus, cecal dilatation and displacement of the abomasum are the important abdominal disorders with great economic loss. Information about modifiers of gastrointestinal motility of cattle are sparse. In this study, effect of two different doses of cisaprid and bethanechol on abomasal motility and emptying rate of healthy calves in present the project was evaluated by four different methods. Ten healthy calves (4-5 days) were used in this study. Calves were fed milk replacer daily at the same times. After thirty minutes following the administrations high and low dose of cisaprid and bethanechol each calf was fed with milk replacer. Abomasal motility and emptying rate of calves were determined by ultrasonograph, acetaminophen assay tests, intraluminal pressure and glucose absorption curve. Venous blood samples obtained periodically from the calves in the experimental period. The results of ultrasonographic half-life, T_{max} and β show that these values of all drugs administration were smaller ($p < 0.05$) according to control group given the only milk replacer. Acetaminophen time-concentration curve show that concentration of administered all drugs were reached the highest concentration between 120 to 300 minutes. As the value of the T_{max} and AUC 0-120, bethanechol in alone and combine administered groups was detected significantly ($p < 0.05$) compare with cisaprid and control groups. As a result, the value of AUC 0-120 of ultrasonographic half-life and acetaminophen absorption test show that bethanechol was more effect compare to cisaprid and combination group on abomasal motility of healthy calves.

Keywords: calves, abomasal emptying, cisaprid, bethanechol, acetaminophen absorption test

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Use of Dental Implantation in a Dog with Hypodontia in Permanent Dentition

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Abstract:

Developmental dental disorders may result in anomalies in the structure, shape, size, or number of the teeth. Hypodontia, named as one or more missing teeth, is presented in different breeds of dogs. The first successful implant in human dentistry was enforced in 1965. Cosmetic dentistry is a expanding business in human medicine, and its popularity in the veterinary practice is sure to follow. The purpose of this article is to evaluate clinical properties of a rare hypodontia case in the permanent dentition in a dog, and its treatment by dental implantation. A 1.5 year old male Canary dog was referred to the surgery department for missing of a tooth. His owner was discontented to this esthetic problem. All primary teeth were present except for the right mandibular fourth premolar (P4) at the time of the first dental examination. Mandibular oblique radiographs confirmed the finding of P4 hypodontia. The implant system consisted of an endosseous component, a transgingival collar, a collar-retaining screw, a coping, and a coping-retaining screw. The implant was placed at the bone level. Ceramic implant tooth was placed and fixed by dental acrylic. There was no any implant stability after 2 month the surgery. In conclusion, hypodontia is a rare abnormality that we now know can be seen in dogs. It can reconstructed by implant system and the owner's dissatisfaction can be fulfilled.

Keywords: Dental implant, Dog, Hypodontia,

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*
Bedding Material Use in Dairy Cattle Business

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Abstract:

Pasture areas affecting profitability significantly in cattle breeding are gradually diminishing. Reduced pasture areas lead farmers to intensive cattle breeding. In intensive breeding, the technique of setting up the barn is very important. It is an important influence on the ground, diseases and yields that are not considered during the building stage or are ignored by the thought that it will increase the cost. The effects of the selected bedding materials are seen in the future on the health and productivity of the animals. As is known, barn should not be on the edges of water sources and should be relatively high. Stables should not be built in a north-facing style. Apart from this type of information, the floor must be serrated and slightly inclined backwards. On the stall grounds of the stables, mattress abodes which affect the health and efficiency of the animals positively should be used. From bedding materials to be used;

Affect comfort and welfare in the positive direction, -to reduce injuries by preventing slipping, - Prevention of injury due to bed, - To encourage cows to lie down on the bed stand, - They should be providing better hygiene than other bedding materials. Considering these factors, it is necessary to make the selection of suitable bedding materials in the enterprises.

Keywords: Cow, Mattress, Bedding materials, Production, Welfare

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Organic Livestock in Turkey

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Abstract:

Organic agriculture begins with the request of the EU countries for organic products in Turkey. The first organic production started with exports of dried grapes and figs in 1984, which are traditional export products. The production area of organic products, the number of producers and the amount of production have increased considerably day by day. In 2015, a total of 1,164,202 tons of organic products were produced with 349,063 hectares of land and 36,732 producers. Since consumer awareness and purchasing power are low in Turkey, a significant part of the organic herbal products are exported to mainly to the EU and abroad countries. Organic agriculture has developed based on crop production and exports. However, due to problems with export of animal products and inadequate demand in the domestic market, organic livestock production has developed hardly. Nowadays 14.2 million cattle, 41.3 million small ruminants, 109 billion hens, 220 billion broilers and 7.9 million hives produce honey. Annual milk production is 18.6 million tons, red meat production is 1.2 million tons, chicken meat production is 1.9 million tons, egg production is 16.8 billion tons and honey production is 108 thousand tons. However, the number of organic livestock farms is only 179. There are 7,618 head cattle, 41,272 small ruminants, 227,066 hens, 725,544 broilers and 38,296 hives with organic animal production. Annual organic milk production is 19,739 tons, red meat production is 475 tons, chicken meat production is 2,130 tons, egg production is 59 million pieces, and organic honey and other bee products production is 674 tons. Despite of the high potential of organic livestock in the country, and organic livestock has not developed in the outer market due to export problems and the inland demand is inadequate. For this reason, significant support is needed to increase the production and consumption of organic animal products. After this article provides general information about animal husbandry in Turkey, the current situation of organic animal husbandry, problems and suggestions for solution will be discussed.

Keywords: Organic farming, organic livestock, organic milk, organic meat, organic eggs

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Effects of Hen Age on Egg Shell Color****Vahdettin SARIYEL^{1*}, Ali AYGÜN², İskenderYILDIRIM², Doğan NARINÇ³**¹Karapınar Aydoğanlar Vocational School, Selcuk University, Konya, Turkey²Selcuk University, Faculty of Agriculture,
Department of Animal Science, Konya, 42075, Turkey³Namık Kemal University, Faculty of Veterinary Science, Department of Animal Science,
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Abstract:

Egg shell color is regarded by consumers as an important characteristic in terms of egg quality. Consumers prefer dark shell color eggs to light Brown tint colors. Egg shell color is affected by factors such as hen age, genotype, nutrition, stress and diseases. In this study, the effect of hen age on egg shell color was investigated. For this purpose, 30 brown layering hens were housed in individual cages. At 30, 38, 45, 54 and 59 weeks of age, eggs were collected on 3 consecutive days to measure the eggshell color parameters (L^* , a^* and b^*). The shell color L^* , a^* , b^* values were measured and Hue and Chroma values were determined from these data. There were no significant differences among treatments group for shell L^* , shell a^* , shell Hue and shell Chrome values. The lowest b^* value was in eggs produced at 45 wk of age. However, there was no significant difference between the other groups in terms of b^* value. As a result, the hen age only affected the shell b^* value.

Keywords: Shell color, hen age, table eggs.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*
Effects of Oregano Essential Oil on Performance and Egg Quality in Laying Hens
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Abstract:

This study evaluated the effects of oregano essential oil on performance and egg quality parameters of laying hens. In experiment, a total of 144 fourty-week-old H&N Super Nick laying hens were assigned to the basal control diet supplemented with 50, 100, 150, 200 and 250 mg/kg of oregano essential oil (6 treatment diets, 8 replicates, each replicate consists of 3 hens). Hens were fed experimental diets from 40 to 52 weeks of age. Water and feed were supplied ad libitum throughout the experiment. The results of study indicated that there were no differences in egg production, feed intake, feed conversion ratio, egg weight, egg mass as a performance parameters among the treatment groups. The eggshell ratio, eggshell thickness and eggshell breaking strength had no significantly affected by the dietary treatments. The results of this study demonstrated that performance and eggshell quality were not significantly influenced with oregano oil addition in laying hens diet.

Keywords: Oregano essential oil, performance, eggshell quality, laying hens.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Ecological Balance in Prophet's Sunnah****Fikret KARAPINAR**

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Abstract:

Allah has created everything in this universe in due proportion, order and measure and He has not created anything in this universe in vain. Thus, Allah does not appreciate any act that leads to destruction of the universe. In the meantime, Allah who has created everything for the most precious being like human beings, has provided a number of principles that regulate the relationship between the universe and mankind. The prophet of the last religion which was revealed about 1400 years ago in a desert setting, is not only a messenger for our time but is also a prophet of all time. Some have disdained him as the desert prophet but this supreme human-being has put forward many principles for the preservation of ecological equilibrium and the formation of environmental consciousness together with the revelation from the creator of the universe. Centuries ago he has drawn attention to many problems which are recently included in the international agenda in our modern world. When we closely examine the sunnah of the Prophet (pbuh), it is seen that there are many hadiths on topics including keeping and protecting the environment, house and places of worship; not polluting water and public places where people commonly use; protecting the nature and green; carrying on with plantation of trees until the doomsday and coordinating tree cutting; removing things that disturb our environment; loving all living creatures, including animals and looking at them with compassion; placing the relationship between environment and cities on a healthy ground; environment and wasting, primordial human nature [fitrah], obesity and stuffing the stomach. In this paper, these aspects of the Prophet Muhammed (pbuh) that have not come to the agenda will be analyzed and evaluated in the light of his hadiths and his understanding of the environment will be presented. Narrations from the Prophet Muhammed (pbuh) will have significant contribution to the creation of environmental awareness and development of environmental ethics.

Keywords: Hadith, Sunnah, Environment, Environmental Awareness, Ecology

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*
Fréchet Distance Based Hyperspectral Preprocessing for Land Use Classification

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Abstract:

Identifying and mapping of land use types have been very important for planning and land management especially in agricultural areas. Hyperspectral imaging is a high-tech remote sensing technology, which gives huge amount of spectral information about areas and materials. Spectral information for each pixel contains reflectance/transmittance values in wavelength range represent with a vector called as spectral signature or spectral curve. Although the spectral resolution of the hyperspectral images is high, the spatial resolution is very low. Due to its low spatial resolution, spectral signatures generally contain mixed spectral information. In order to improve hyperspectral image classification performance, it's very important to handle with mixed spectral information. On the other hand, spatial information is as important as spectral information in the context of hyperspectral image classification. In this study, we proposed a Fréchet distance based preprocessing method for improving accuracy of hyperspectral image classification on agricultural areas. The resulting spectral curves effectively integrate spectral and spatial information and these are used in classification process instead of the original spectral curves. Classification results for well-known hyperspectral image datasets demonstrate that the proposed method can improve the classification accuracy of support vector classifiers, especially under small sample size constraints.

Keywords: Land Use Classification, Hyperspectral Imaging, Preprocessing, Fréchet Distance, Land Cover Classification

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Predicting Color and Ph Values of Black Carrots by Using Image Processing

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Abstract:

Color and pH values are important for the black carrot industry on juice production. The aim of this study was the prediction of pH and L^* , a^* , b^* color values of black carrots by using RGB values of the captured digital images taken by a Canon 650D digital camera. The images were captured from 46 black carrot samples in two different forms: from inside and surface. For each image, a mask applied for removing background and obtaining region of interest. Pixel values normalized in range [0-255] and bin size selected as 5. Each image represented by 51-bin histogram for each channel and first and last bin removed because of not significant changes. Finally, histogram features combined in feature vector and images are represented with 147 features. Feature vectors were used to predict pH and color values of the samples. The mean values of L^* , a^* , b^* and pH were $13,479 \pm 2,335$, $2,752 \pm 1,397$, $-0,845 \pm 1,025$, $4,871 \pm 2,269$ and the results for the linear regression analyses were 97,51%, 99,31%, 99,61% and 99,91% for L^* , a^* , b^* and pH values, respectively. It can be advised that the image processing technique by using a digital camera can be used for this purpose. It can be recommended that image processing techniques are suitable for classification and freshness assessment for juice production as a non-destructive and fast method when compared with traditional methods.

Keywords: Image processing, black carrot

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Synthesis, Characterization and Agricultural Application of Modified p(DMAAm-co-MA-co-CA)-NaOH Superabsorbent Hydrogel

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Abstract:

Water conservation is an important step to achieving sustainable growth and development in agriculture. Recently, superabsorbent materials such as hydrophilic polymers have gained much attention as they can increase plant growth through water and fertilizer retention properties. In this investigation p(DMAAm-co-MA-co-CA)-NaOH superabsorbent hydrogel was synthesized using N,N-Dimethylacrylamide (DMAAm), maleic acid (MA), citric acid (CA) as monomers and modified by sodium hydroxide (NaOH) for targeted nitrogenous fertilizer absorption. Synthesized p(DMAAm-co-MA-co-CA)-NaOH superabsorbent hydrogel was investigated swelling behaviors in deionize water and sensibility pH and was characterized using Fourier Transform Infrared Spectroscopy (FT-IR) and Thermal Gravimetric Analysis (TGA). In the environmental applications of p(DMAAm-co-MA-co-CA)-NaOH superabsorbent hydrogel aimed removal from aqueous medium of urea fertilizer. Therefore in this study investigated effect on the absorption performance of initial fertilizer concentration (mg/L), the pH of the media, and temperature (°C). Ultra-Viole spectroscopy was used to quantify urea fertilizer during absorption studies. The most utilized absorption isotherms models like Langmuir and Freundlich were studied to obtain the best-fitted isotherms equation. Moreover thermodynamic parameters were evaluated. Under specified experimental conditions, the maximum absorption capacity for urea fertilizer was calculated to be approximately 116.01 mg/g.

Keywords: Absorption, Citric acid, Fertilizer, N,N-Dimethylacrylamid, Maleic acid, Nitrogenous

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Relationship between Nature, Knowledge and Logic According to Naturalist Kalam Scholars

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Abstract:

Debates made in the context of human actions have connection to each other in an attempt to reconcile the relationship between knowledge and reason. In the philosophy of Ilm al-Kalām, philosophy of nature also forms an integral part of this connection. Nature in human beings includes psychological instincts that take place without mankind's willpower. Features such as temperament, humor and creation can be included as well. In the history of Kalām, the idea that there exists a strong connection between nature, knowledge and reason was firstly expressed by Mu'tazila scholars including Nazzam, Muammer b. Abbad and Cahız. The issue of human freedom plays a major role on the basis of philosophy of nature. It is necessary to distinguish between Mu'tazila scholars who defend the idea of naturalism and the naturalists who regard the nature as the sole source and creator. Naturalist Mu'tazila scholars had serious debates with naturalists about the faith in Allah during their time period. One of the distinction points between naturalists and naturalists Kalam scholars is related to the topic of knowledge. According to naturalist Kalam scholars, human beings are born with innate knowledge of our world. Human beings are born with this knowledge since the divine power has pre-loaded them into the human nature. Because there is a natural cooperation between human compulsive needs and human nature, knowledge and intelligence. As a result, Allah has instinctively instilled a natural feeling of desire toward benefits and of avoidance from harms. At this point, internal and external factors in human beings go into action. Thus, the person becomes responsible for the actions which s/he has committed with free will and knowledge.

Keywords: Nature, reason, knowledge, power, Mu'tazila, freedom of will.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Evaluation of Kyrgyzstan's Agricultural Mechanization Level in Terms of Geographic Regions

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Abstract:

This study has been conducted to evaluate the level of Kyrgyzstan`s agricultural mechanization in terms of geographic regions. Data used in this study were obtained from National Statistical Committee and Ministry of Agriculture of Kyrgyz Republic databases from 2016 year. The criteria of Kyrgyzstan`s agricultural mechanization level such as cultivated area per tractor, tractor power per unit of cultivated area, the number of tractors per cultivated area and the number of equipment per tractor were found 18.1 ha/tractor, 0,93 kW/ha, 55.4 tractor/1000 ha, 2.08 equipment/tractor, respectively. In addition to this study, Kyrgyzstan`s agricultural structure evaluated and compared with EU and Turkey.

Keywords: agricultural mechanization, tractor, geographic regions, Kyrgyzstan

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Plant Production in Konya****Musa SEYMEN¹, Ali KAHRAMAN²**¹*Selcuk University, Faculty of Agriculture, Department of Horticulture, Konya, Turkey*²*Selcuk University, Faculty of Agriculture, Department of Field Crops, Konya, Turkey**e-mail: mseymen@selcuk.edu.tr***Abstract:**

Konya City has the largest land in Turkey nearby 4 million ha area while 1.9 million ha is used for agriculture. A total of 111.479 farmers do agricultural activities in 31 towns, 174 small towns and 615 villages. Water potential of the region presents irrigable for 1.65 million ha as nearly 40% (0.6 million hectare) is irrigated. Agricultural lands are consisted from 61.5% for field products, 35.5% for fallow lands, 3% for vegetables, fruits and viticulture. Vegetable production in Konya consists from 62% field products, 22% vegetables and 16% fruits which take a part of 30-35% plant production over the country. Present paper summarizes the present condition of plant production in Konya and suggests the following comments; increasing of irrigable lands besides effective water usage and developing drought resistant plants, applying of rotation systems which are including different plants, increasing of reduced tillage and applying of sensible agriculture techniques, determination of optimum sowing-planting times and density and higher adaptable varieties, extension of certified or producing permitted seed and seedling usage, soil analyze and effective fertilizing programs that are focused on biological activity, insurance for agricultural products, improvement of basin-based supports, more effective knowledge extension among agricultural related stakeholders etc. main topics for the purpose of more effective plant production in the region in addition to determination of problems and suggestions for main topics and necessities of producers for the aim of supporting the farmers in the region and national economy which take care about sustainable agricultural systems.

Keywords: Drought, Rotation, Sensible agriculture, Sustainable agriculture, Turkey

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Investigation of Heavy Metal Level and Mineral Nutrient Status of Kyrgyzstan Natural Walnut Populations: Plant and Soil Interactions

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Abstract:

The common walnut fruit tree (*Juglans regia* L.) forests encompass the mountain ranges of Fergana and Chatkal in Kyrgyzstan. They are found in patches of disconnected areas on southwest facing slopes of Fergana mountain range, north and east of Jalal-Abad, and southeast facing slopes of Chatkal mountain range with an altitude preference of 700 to 2100 meters. Studying Kyrgyzstan's natural walnut populations is of great importance for its unique status in the world. For this purpose, four different locations of walnut fruit forests are selected and soil and walnut fruit samples were collected from these locations namely; Sary-Chelek, Arslanbop, Kara-Alma forest zones from Jalal-Abad region and Uzgen forest zone from Osh region. Walnut kernels and soil samples were then tested to determine Al, Ca, Cd, Cu, Fe, K, Mg, Mn, Na, Ni, Pb and Zn. According to our results of soil measurements, Sari-Chelek region came forward as the region with the highest concentrations of all tested elements. Walnut samples were found to have the highest concentrations of Ca, Fe, K, Mg and Zn in Sari-Chelek region, Cu in Uzgen region, Mn in Arslanbop region and Na in Kara-Alma region. Arslanbop region stands out for lowest concentrations of Ca, Fe, K, Mg, Na and Zn for walnut samples, while nethermost Cu and Mn were observed in walnuts from Sari-Chelek region.

Evidently, mineral element composition affects nutritional quality of walnut kernel. These analyzes also provide further information in selecting the correct walnut varieties for breeding purposes to obtain the best yield.

Keywords: Trace element, *Juglans regia* L., nutrition, Middle Asia

*Acknowledgement: This study is supported by Kyrgyz-Turkish Manas University.

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Investigation of Pb(II) biosorption onto *Helvella leucopus Pers.* by Response Surface Methodology****Şakir YILMAZ¹, İsmail ACAR², Tekin ŞAHAN¹, Yusuf UZUN³, Nahit AKTAŞ¹**

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Abstract:

The presence of heavy metals in the environment specifically in various water resources is of major concern because of their toxicity, non-biodegradable in nature and threat to human, animal and plant life. Among various heavy metal ions present in wastewater, Pb(II) is one of the most prevalent metals. This study aims the removal of Pb(II) ions from aqueous solutions with powdered natural *Helvella leucopus Pers.* biosorbent and optimization of biosorption conditions. Central Composite Design (CCD) in response surface methodology (RSM) was used to optimize the most important parameters (initial Pb(II) concentration (Co, mg/L), initial pH, biosorbent dosage (g) affecting the biosorption. With the quadratic model obtained from CCD, the optimum values were determined as Co 30-50 mg/L, pH 6.5-7.5, and biosorbent dosage 0.1-0.5 g, respectively.

Keywords: *Helvella leucopus Pers.*, surface methodology

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Food safety issues in the Kyrgyz Republic

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Abstract:

Food safety has become an important food quality attribute within the last few decades. According to the Codex Alimentarius Commission (CAC), "food safety is the assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use". Foodborne diseases are widespread throughout the world, and so food safety is a global problem. Globalization of the food trade has focused attention on strengthening measures to ensure the quality and safety of foods. The Kyrgyz Republic as a member of the international community assumed responsibility to ensure that food supplies are safe, physically and economically accessible, appropriate and adequate to meet the energy and nutrient needs of the population. This article discusses the food safety control system in the Kyrgyz Republic. Specially, it introduces current socio-economic situation, characterization of the domestic food market, and the elements of the national food safety control system upon adopting a new regulation since 2015. The new food safety system is setting up, but there are number of problems in implementation of new approaches to the assurance of food safety. As a result, a number of measures are proposed concerning implementation of food safety management and control systems.

Keywords: Food safety, HACCP, ISO 22000, Kyrgyz Republic

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***The Prevalance and Treatment of Hypertrophic Cardiomyopathy in Dogs with Congestive Heart Failure****Aidai ZHUNUSHOVA¹, Murat KİBAR¹, Hasan GÜZELBEKTAŞ^{1,2}**

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Abstract:

Heart disease in dogs is commonly encountered. There are many potential causes of canine heart disease and depending on the severity of the disease, any form of heart disease can lead to heart failure. Congestive heart failure (CHF) is characterized by elevation in ventricular filling pressure, which results in congestion and consequent development of tissue edema or body cavity effusion. The prevalence of cardiac diseases was highest in small breeds and lowest in big breeds. Physical examination revealed exercise intolerance, dyspnea, anorexia, cough, going down in condition, pale mucosa, ascites, peripheral edema, cyanosis and pleural effusion were the clinical signs recorded in cardiac patients.

The aim of the study were to determine the prevalence of hypertrophic cardiomyopathy (HCM) in dogs with congestive heart failure and the effects of treatment with furosemid+enalapril were evaluated in dogs with HCM. During the between September 2016 to April 2017, ten dogs with congestive heart failure presented to Veterinary Clinic of Kyrgyz Turkish Manas University.

The prevalence of HCM is determined at 50% (5/10). When treatment was evaluated, both systolic and diastolic mean pressures were found significantly higher before (systolic: 146,00±0,94, diastolic: 114,67±0,72) than after (systolic: 126,00±2,49, diastolic: 78,33±6,77) treatment.

In conclusion prevalence of HCM was detected greater in dogs with CHF presented to our clinic. In addition, diuretic and ACE inhibitors treatment was found to be effective in dogs with HCM.

Keywords: Dog, Enalapril, Furosemide, Hypertrophic cardiomyopathy

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Potato Cyst Nematode and Soil Health Biology

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Abstract:

On a global basis, potato (*Solanum tuberosum* L.) is the most important non-grain food crop. It is widely grown in both Kyrgyzstan and Tajikistan. Potato is an important export crop for Kyrgyzstan. The potato cyst nematode (*Globodera rostochiensis* Wollenweber), however, is a key limiting factor in potato production in both Kyrgyzstan and Tajikistan. As a regulatory species, it has a significant impact on both crop yield and export potential. Potato cultivars from the United States (U.S.) with resistance to *G. rostochiensis* have performed well under growing conditions in both Kyrgyzstan and Tajikistan. Some of the cultivars also have resistance to late blight, Verticillium-wilt and Colorado potato beetle [*Leptinotarsa decemlineata* Say (Coleoptera: Chrysomelidae)]. In 2011, Michigan (U.S.) potato growers began to express their concerns about the quality of their soil in relation to crop yield. The topic of soil quality has become known as soil health: with a focus on soil biology. In a 2012 survey of 96 Michigan commercial potato fields, twelve soil health indicators were evaluated. On a scale of 0-100, the mean score for the sites was 57.7. The physical and biological indicators were low and the chemical indicators excellent. In other research conducted by the senior author, three soil health parameters, water stable aggregates, nitrogen mineralization potential and active carbon were identified as the indicators most closely associated with crop productivity. A working hypothesis is that a significant number of crop pest issues are related to soil health. If this is true, it mandates a new type of transdisciplinary interaction between the domains of soil science and pest/disease management.

Keywords: Central Asia, Potato production, Potato cyst nematode, Resistant varieties, Soil health biology

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Young Farmers Projects and Young Farmers in Tekirdağ****Burçin BAŞARAN¹, Zehra Meliha TENGİZ²**

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²Agricultural Engineer, Tekirdağ, Turkey

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Abstract:

Agriculture is the source of food that is needed by people for sustenance. In Turkey, agricultural activities are the most important source of income in rural areas. On account of insufficient income in agriculture, especially young population migrates from the rural area to the city and tries to maintain its life in the city. The result of this migration, old and senescent farmers are keeping on the agricultural activities. Agricultural production is essential for sustainability of agriculture and agricultural areas, to prevent migration from rural areas, to nourish, to reduce external dependence. For these purpose, "Young Farmer Project" is enacted by the Ministry of Food, Agriculture and Livestock to cover the years 2016-2018 within the scope of Rural Development Supports. Supporting the entrepreneurship of young people aged 18-40, ensuring sustainability in agriculture, creating alternative sources of income, contributing to the employment of young people in rural areas; shortly it is aimed to prevent migration from the village to the city. In 2016, about 15 thousand young farmers benefited from about 30 thousand Turkish Liras per person. 142 young farmers took this support in Tekirdağ. An important proportion of the support was livestock projects. In the research, beneficiaries were evaluated for their grant support. For this purpose, a questionnaire will be applied to the young farmers and their attitudes towards the given support was examined and offers were provided for this support.

Keywords: Rural Development, Young Farmers, Grant, Tekirdağ, Young Farmers Project

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Investigation of Rheological Behavior of Kyrgyz Traditional Beverages Bozo and Maksym during Storage Period

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Abstract:

Bozo and Maksym are Kyrgyz traditional beverages made from cereals using both lactic acid bacteria and yeast fermentation. In this study, the technological production scheme of Bozo and Maksym were compared and rheological properties of these beverages were investigated. The rheological characteristics of a food product influence many aspects of the fluid performance during processing (flow behavior, pumpability, foamability, etc.) and of the finished product quality (texture, flavor release, stability, appearance). Flow behaviors of the beverages were investigated during storage (6, 14, 21 days) at fridge temperature of 5 °C. The rotational measurement condition was used to obtain flow behaviors of the samples, by measuring steady shear viscosity (η) and shear stress (τ) at shear rate from 0.1 to 100 s⁻¹. It was found that both beverages behaved as a non-Newtonian pseudo-plastic fluid with yield stress value. Three models such as Herschel-Bulkley, Casson, and Ostwald-De-Waele were used to describe flow behavior of the samples. The Casson model was found the most appropriate to fit the flow curves of both investigated beverages with correlation coefficient R²=0.9999 for Bozo and R²=0.9996 for Maksym. The effective viscosity of Bozo was increased from 12.02 to 16.38 mPa•s after 21 day storage. Vice versa Maksym's effective viscosity after 21 day storage was decreased from 13.40 to 8.88 mPa•s.

Keywords: Bozo, Maksym, Rheological properties, Shear rate test, Viscosity, Yield Stress

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Quantitative Determination of Very Toxic Heavy Metals Mercury and Arsenic in The Waters of the Naryn River*****Kanatbek KOJOBAEV¹, Baktyyar ASANOV², Suymonkul ISMATILLAEV³**¹*Kyrgyz Turkish Manas University, Bishkek, Kyrgyz Republic;*²*AUCA, Bishkek, Kyrgyz Republic*³*NAS of the Kyrgyz Republic, Institute of Chemistry and Chemical Technology, Bishkek, Kyrgyz Republic**e-mail: kojkanik@gmail.com***Abstract:**

The article gives a quantitative definition of very toxic heavy metals in the waters of the Naryn River on the atomic absorption spectrometer "AAnalyst 800", a brief description of this spectrometer and the method of operation on it. The work was carried out with the participation of the authors of the article in the framework of the NATO SfP 983945 project "Assessment of transboundary water pollution in Central Asia", the final report of which was adopted in March 2016. As a result of the determination of mercury and arsenic at ten different points of the Naryn River - from its sources to the point at the outlet of the Naryn River from the Kyrgyz Republic, a change in their average content over the seasons of the year has been established. Thus, the average mercury content decreases insignificantly from the spring (from 0.031 µg / l) to summer (up to 0.025 µg / l) and sharply to fall (to 0.007 µg / l). It was also found that the arsenic concentration in the water slightly increases from the spring (from 1.368 µg / l) to summer (up to 1.478 µg / l) and decreases by the autumn (up to 1,257 µg / l). In general, the concentration of arsenic and mercury in the Naryn River, when considered separately, does not exceed the maximum allowable concentration limit for drinking, cultural and household water and fishery-economic waters.

Keywords: Mercury, Arsenic, Atomic absorption spectrometer AAnalyst 800, The Naryn River.

**Acknowledgement:* This study was funded by NATO, Scientific Research Project SfP 983945.

**Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*
SSR Fingerprinting of Pistachio Cultivars from Different Origins**

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Abstract:

Pistacia vera is a cultivated species in the genus and there are limited number of cultivars in the germplasm. USA, Iran and Turkey are main pistachio producers in the world. Pistachio has n=15 chromosomes. Molecular markers are very useful tools in fingerprinting, germplasm characterization and population studies. Microsatellites or simple sequence repeat markers (SSRs) are marker of choice due to codominance in germplasm characterization. In this study, we used a total of 30 SSRs selected two from each chromosome to characterize 25 pistachio cultivars from different origins. The results will be discussed in the meeting.

Keywords: Pistachio, SSR, *P. vera*, genetic relationship

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Greening The Industrial Zone of The Bishkek Mac in The Context of Sustainable Development****N. TOTUBAEVA¹, G. TALAYBEKOVA¹, U. RAIMOV²**¹*Kyrgyz-Turkish Manas University, Engineering Faculty, Bishkek, Kyrgyz Republic*²*State Agency for Environmental Protection and Forestry under the Government of the Kyrgyz Republic**e-mail: totubaevanurzat@gmail.com***Abstract:**

Every year the population of the city of Bishkek increases, which undoubtedly affects the quality of the urban system. The air pollution of the city of Bishkek exceeds the maximum allowable concentration (MAC) by 5-10 times. In the atmosphere of the city, TPS releases 9 pollutants, of which our studies were focused on pollutants significantly exceeding the MAC: sulfurous anhydride, nitrogen oxides, ammonia, formaldehyde and dust. Reduction of negative consequences of these pollution can be carried out, on the one hand, by modernization of technologies, and on the other - through the creation of new elements of the environmental protection fund. In this regard, one of the most significant areas for improving the environmental situation is the creation of different types and categories of green spaces. Unfortunately, the greening of industrial zones in Bishkek does not meet the requirements of environmental criteria. Landscaping is mainly represented by coniferous species such as pine (*Pinus sylvestris*), Spruce of Tien Shan (*Picea schrenkiana*). However, coniferous rocks are the most dust-gas sensitive species and therefore the cultivation of these species in industrial areas is not environmentally friendly. We selected and proposed options for planting trees that can grow in conditions of pollution characteristic of the area. This is a complex consisting of Thuja L. + Buxus L. + *Syringa vulgaris* L. + Forsythia VAHL in a design combination. Thus, we have selected the best options for gardening in the conditions of the Bishkek thermal power station.

Keywords: Air pollution, Design combination, Landscaping, Urban system

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Micropropagation Studies on Critically Endangered Mediterranean Knapweed (*Centaurea tchihatcheffii* Fisch Et. Mey)

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Abstract:

Turkey, especially the Mediterranean region, is generous in many plant families. One of which is the genus *Centaurea* of the Asteraceae family. More than 700 species of *Centaurea* are found in this region, only about 178 are found in Turkey. *Centaurea tchihatcheffii* L. is an endangered plant and previous studies emphasize that the low germination rate of its seed is primarily due to deep seed dormancy. Therefore, the determination of the propagation techniques of this plant, such as in vitro micropropagation, will have great importance for germplasm conservation and commercial production. This species has a great potential for use as ornamental plants because of their attractive flowers. The stem node explants of *C. tchihatcheffii*, obtained from in vitro germinated seedlings, were cultured on different nutrient media supplemented with various concentrations of plant growth regulators. Large numbers of adventive shoots were regenerated (over 10 shoots/explant) from node explants on Murashige and Skoog medium supplemented with 1 mg/L 6-benzylaminopurine and 0.50 mg/L indole-3-butyric acid after 30 days of culture initiation. The new node explants were sub-cultured to the fresh media. Regenerated shoots were transplanted to a potting mixture and were acclimatized in the growth chamber.

Keywords: *Centaurea*, Endemic, Micropropagation, Stem node,

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Molecular Identification of Three Gelechiidae Species Based on The Mitochondrial cytochrome Oxidase Gene I (MtCOI) Sequences****Utku YÜKSELBABA, Hüseyin GÖÇMEN**

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Abstract:

Gelechiidae (Lepidoptera: Gelechioidea) is one of the most dominant members of the microlepidoptera. The larva of Gelechiidae causes more serious damage to a number of economically important crops in fields as well as on storage food products. In this study, three different Gelechiidae species, namely tomato borer *Tuta absoluta*, potato tuberworm *Phytorimaea operculella* and pinkbollworm *Pectinophora gossypiella*, which have been established to cause serious damage to crops in Turkey have been identified based on mitochondrial cytochrome oxidase gene I (mtCOI) sequences. The obtained sequences were analyzed for homology against other Gelechiidae species in the National Center of Biotechnology Institute (NCBI) database using the BLASTn program with default parameters. The phylogenetic analysis was conducted based on mtCOI sequences to establish the evolutionary relationship of the three species within Gelechiidae. The average sequence of all the three species was 750bp. The sequences were deposited in the NCBI database. The BLAST analyses showed a similarity of 93% between *T. absoluta* and *P. operculella*. The phylogenetic analysis resulted two main clusters with various subgroups. *T. absoluta* and *P. operculella* formed a monophyletic group, whereas *P. gossypipella* also formed a separate cluster. Significant variations were observed in the mtCOI sequences of the three species within the gelechiidae family. Based on the result of this study, it was concluded that the genetic variation within Gelechiidae family could better be understood if the study is carried out by using whole mitochondrial genomes from different species from different parts of Turkey.

Keywords: Tomato Borer, Potato Tuberworm, Pink Bollworm, Phylogenetic, mitochondrial Cytochrome Oxidase

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Biosorption of Cobalt(II) from Aqueous Solutions by *H. leucomelaena* (Pers.) Nannf. and Response Surface Approach for Optimization of Biosorption Conditions

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Abstract:

Many metals are classified as toxic and these metals are emitted into the environment at different quantities that pose risks to life of live. They are toxic even at very little concentrations. The heavy metals such as cobalt, cadmium, copper and zinc, are among the most common pollutants found in industrial effluents. Cobalt is one of the most toxic metals affecting the environment. Cobalt is a common metal that must be removed from industrial wastewater since it is harmful to the central and peripheral nervous systems of human being. Response Surface Methodology (RSM) can be employed to optimize the biosorption conditions of heavy metals. It is a collection of mathematical and statistical techniques for analyzing the effects of several independent variables. In many processes, the relationship between the response and the independent variables is usually unknown. Usually, this process employs low-order polynomial equations in a pre-determined region of the independent variables, which will later be analyzed to locate the optimum values of independent variables for the best response. This study aimed the removal of Co(II) ions from aqueous solutions with *H. leucomelaena* (Pers.) Nannf. biosorbent and optimization of biosorption conditions with RSM. The most effective medium factors, which are initial Co(II) concentration, initial pH, and biomass dose, on biosorption of Co(II), were investigated by Central Composite Design (CCD). The optimum conditions were evaluated to be 40-60 mg/L, 6-7, and 0.1-0.4 g for initial Co(II) concentration, initial pH, and biomass dose, respectively.

Keywords: *H. leucomelaena* (Pers.), Cobalt(II)

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**The use of *Ulmus minor* as biomonitor organism for screening of heavy metal pollution in Bishkek, Kyrgyzstan****Zeki SEVEROĞLU^{1,3}, İlhan DOĞAN^{2,3}, Kadyrbai CHEKIROV³, İbrahim Ertuğrul YALÇIN⁴, Göksel DEMİR⁵, Gulbubu KURMANBEKOVA³**

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Abstract:

Bishkek is the capital and largest city of the Kyrgyzstan, has population of about 1 million. Bishkek is the major economic center, producing most of the gross national product. Urban pollution in Bishkek continues to build up due to increase of population and rapid industrial development having a negative impact on environment. An ecological monitoring research was launched in order to estimate the rate of heavy metal pollution in the City. For this purpose, leaf (washed and unwashed) and bark samples of *Ulmus minor* and its co-located soil samples were collected from different roadsides, namely Akhunbaev, Shabdan Baatyr, Jibek Jolu, Chuy, Moskovskaya, Bokonbaeva, Gorky, Yusup Abdrahmanov & Baitik Baatyr Streets. The standard procedures were used and the determinations of heavy metal and nutrient element contents (Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Na, Pb and Zn) in all samples were done using inductively coupled plasma-optical emission spectroscopy (ICP-OES). According to our measurements, the normal limits were only exceeded for Pb, Cd and Cr whereas the concentrations of Cu and Zn were found to be within normal limits in *Ulmus minor* collected from all locations. Also, the data indicated that the presence of heavy metals influenced the uptake of mineral elements as a consequence of metal depositions in the plant. Based on our data, accumulation of heavy metals in *Ulmus minor* in the area showed a contamination risk.

Keywords: Pollution, *Ulmus minor*, biomonitor organisms, heavy metals

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Intensification of fodder production through the planting of intermediate triticale

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Abstract:

Planting of winter-hardy, drought-resistant, disease-resistant, and pest-resistant fodder crop is the most important aspect of the agricultural fodder-producing sector in the Kyrgyz Republic. In this case, Triticale can become the most important crop species that can be most widely planted. Triticale is a crop species that has all the necessary nutritive elements for increasing the production capacity of dairy cattle. Triticale was discovered by a German professor, Wilhelm Rimpau, in 1888. Professor Rimpau crossbred rye with wheat. As a result of this crossbreeding between rye and wheat, he got Triticale. In contemporary society, Triticale can be used as a green-fodder crop and for baking purposes. Triticale has been scientifically proven to be the most fertile fodder crop for agricultural purposes. Triticale's level of frost resistance is considerably higher than the frost resistance of winter wheat, and is equal to that of winter rye. For this reason, Triticale saves more crop plants than winter wheat per unit of land area during harvesting. Triticale is recommended to be used as a feed crop before it enters the ear initiation phase.

Keywords: *forage production, triticale, phytomass*

Annotation: *considered advantages of intermediate planting*

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***The Application Of Mathematical Methods In Improving The Quality Of The Lint Of Kyrgyz Breed On The Example Of Open Joint-Stock Company "Mis"****Nurlan MAMATOV¹, Aibek KARABAEV², Kadyrbai CHEKIROV³***¹Department of Animal Sciences, Faculty of Agriculture, Kyrgyz-Turkish Manas University**²Department of Horticulture And Agronomy, Faculty of Agriculture, Kyrgyz-Turkish Manas University,**³Department of Biology, Faculty of Natural Sciences, Kyrgyz-Turkish Manas University,***Abstract:**

In this article mentioned the application of mathematical methods as a tool to improve the quality of the lint of Kyrgyz breed kept at the Joint – Stock Company MIS. The results are shown in the tables bellow explains each data information and its outcome. Kyrgyzstan possesses mountains and its breeds adapted to the local weather conditions. Domestic breeds were bred by the local scientists. Also as a wild cattle here yaks on the mountains at the three thousand meters above the sea level. Yaks ecological clean their meat delicious and useful for the human health. Their milk is fat and possess all vitamins. Open Joint –Stock Company is the only company in the country which regulates and follows all the recommendations provided from the experts in the agriculture. All their recommendations applied the praxis.

Keywords: Yak, Chicken, cattle production, sheep production.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

**NEW CULTIVAR CANDIDATES FOR WINTER SQUASHES
(*Cucurbita moschata* Duchesne and *Cucurbita maxima* Duchesne)**

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Abstract:

This study was conducted with genotypes of the types *Cucurbita maxima* Duchesne with 148 samples and *Cucurbita moschata* Duchesne with 54 samples were collected from 28 provincial cities (İstanbul, Tekirdağ, Edirne, Kırklareli, Balıkesir, Çanakkale, İzmir, Aydın, Denizli, Muğla, Manisa, Afyon, Kütahya, Uşak, Bursa, Eskişehir, Bilecik, Kocaeli, Sakarya, Düzce, Bolu, Yalova, Ankara, Konya, Karaman, Antalya, Isparta, Burdur) in the Western Anatolia Region in Turkey where winter squash is commonly cultivated. In this study conducted in the district of Altınekin in the province of Konya, the genotypes were selfing, the morphological, molecular and sensual analyses were conducted and the obtained data was employed in weighting based ranking. As a result of the conducted researches, 48 genotypes of *Cucurbita maxima* Duchesne and 29 genotypes of *Cucurbita moschata* Duchesne were chosen for the first year and they were employed as the working items in the second year. Among those genotypes, 18 genotypes of *Cucurbita maxima* Duchesne and 9 genotypes of *Cucurbita moschata* Duchesne were found hopeful during the second year and they became the working items for the final year. In the final year, similar to the other years, those genotypes were appropriated, assessed in the light of the morphological and sensory data. Among the genotypes of *Cucurbita maxima* Duchesne, the items with the numbers of 68, 48, 5, 152, 189, 154, 122, 117, 39 and 192 were determined as presumptive nominees due to their high quality while the genotype numbers of 73, 134, 40 and 23 were chosen among the genotypes of *Cucurbita moschata* Duchesne.

Keywords: *Cucurbita maxima*, *Cucurbita moschata*, selection breeding

**Acknowledgement:* We gratefully acknowledge the support of Republic Of Turkey, Ministry of Science, Industry and Technology (San-Tez Project No: 1208-STZ.2012-1).

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Biomonitoring of heavy metals in Bishkek, Kyrgyzstan using *Populus alba*

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Abstract:

Bishkek (42°52'29" N, 74°36'44" E) is the capital and the largest city of Kyrgyzstan and at the same time, is cultural, economic and financial center. Bishkek is the most populated city in the country, with a population of 900,000 people. In last decade, pollution in the city continues to raise due to population expand and industrial development. In order to make assessments on the rate of heavy metal pollution in Bishkek *Populus alba* was used as a biomonitoring organism. Leaf and bark samples of the plant and its co-located soil samples were collected from different localities. The standard procedures were used and the determinations of heavy metal and nutrient element contents (Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Na, Pb and Zn) in all samples were done using inductively coupled plasma-optical emission spectroscopy (ICP-OES). Our data indicated that Bishkek was affected from the contamination where the concentrations of Pb, Cd and Cr, Cu and Zn were exceeded or close to upper limits. Also, the presence of heavy metals strongly influenced the uptake of mineral elements by the plant. It appeared that the concentrations of heavy metals found in the plant parts were directly reflected in the accumulation of these heavy metals in the area.

Keywords: *Populus alba*, biomonitoring, heavy metals, Bishkek, Kyrgyzstan

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Screening of Heavy Metals in Medicinal Plants of Kyrgyzstan****Dinara YUNUSOVA¹, Bermet KIDIRALIEVA¹, İlhan DOĞAN^{1,2}, İbrahim Ertuğrul YALÇIN³**¹Kyrgyz-Turkish Manas University, Faculty of Science, Bishkek, Kyrgyzstan,²Izmir Institute of Technology, Department of Molecular Biology and Genetics, Gulbahce, Urla, Izmir, Turkey,³Bahcesehir University, Faculty of Engineering and Natural Sciences, Molecular Biology and Genetics, Besiktas, Istanbul, Turkey**Abstract:**

Medicinal plants are notably used by people around the world for the treatments and protection against diseases. Although consumptions of these medical plants grown on areas contaminated by heavy metals are in relatively small quantities compared to other plant based food products, they may have adverse health effects in the case of continuous use. In our study, the heavy metal contents of some medicinal plants used by the people of Kyrgyzstan for treatments of diseases were determined and the reliability of their use was evaluated. *Althaea officinalis*, *Artemisia absinthium*, *Centaurea cyanus*, *Juniperus communis*, *Peganum harmala*, *Rosa majalis*, *Rumex confertus*, *Taraxacum officinale*, *Trifolium pratense* and *Urtica dioica* are the medicinal plant species used in Kyrgyzstan were employed for the purpose of assessments of heavy metal pollution. The contents of heavy metals (Cd, Cu, Ni, Pb and Zn) and nutrient elements in samples collected from different regions of Kyrgyzstan were done using inductively coupled plasma-optical emission spectroscopy. The highest and lowest heavy metal and mineral element contents (in mg/kg DW) in the plants were found to be 5,888.82-11,443.06 for Ca; 0.29-0.73 for Cd; 42.77-101.64 for Cu; 312.93-1,000.79 for Fe; 8,356.52-17,235.49 for K; 2,173.88-6,427.06 for Mg; 16.16-73.81 for Mn; 129.16-278.69 for Na; 4.93-21.49 for Ni; 14.22-45.21 for Pb and 53.96-136.74 for Zn. Our results indicated that the concentrations of some heavy metals found in the plants were high and as results of uptake and accumulation of heavy metals, the uptake patterns of mineral elements were altered in medicinal plants.

Keywords: Heavy metals, medicinal plants, Kyrgyzstan

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

New isolates of *Beauveria bassiana* from Kyrgyzstan and their biological characteristics

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Abstract:

Beauveria bassiana is an entomopathogenic fungus, and as a parasite has a wide range of hosts from many orders of insects, and in Kyrgyzstan it remains still as a poorly-studied biocontrol agent. Seven *Beauveria bassiana* strains were isolated from nature sources: the soil fertilized with manure, imago and larvae of Colorado potato beetle (*Leptinotarsa decemlineata*), the larvae of wireworms (*Agroites mancus*, Say), caterpillars of *Galleria mellonella* and other caterpillars of *Lepidoptera*. The strains have showed a rapid growth on Czapek's and yeast extract medium, forming a white, cotton-like mycelium. On Saburo medium, they have formed a thin mycelium of pale yellow color. Natural isolates have showed intensive growth at a temperature of 28°C, increasing the diameter of colonies 3 times in 7 days, at 15°C they have showed a moderate intensive growth, so for 8 days the diameter of colonies have increased 2-2.5 times, while at temperatures of 4 and 36°C they were grown with slow rate, so for 15 days the diameter of the colonies was increased only 0,2 times. 18S rRNA and ITS genes of these strains were analyzed to confirm their phylogenetic affiliation. By solid cultivation on cheap nutrient medium the biomasses of *Beauveria bassiana* strains was obtained to determine their physiological need for nutrient compounds and to test their biological activity. Such waste products as a cotton oilcake, oatmeal, sunflower oilcake and bean oil meal were used for cultivation. Most strains have preferred cotton oilcake, forming a thick layer of mycelium. The strain 5-gal (isolated from *Galleria mellonella*) with the dose of 1×10^7 conidia/g of soil has shown a high efficacy to white grub, *Phyllophaga* spp. after 20-25 days, when fungal conidia suspension was inoculated into the soil with larvae. The death rate was 43.34%, in the control -0.0%. Also this strain has shown a significant effect to *Trialeurodes vaporariorum* (whiteflies) nymphal and adult population, when the leaves of decorative plants were sprayed with a dose of 10×10^8 conidia / ml suspension. In 6 days, the mortality of the experimental insects made up 53-60%. The strain 3-Z (isolated from *Agroites mancus*) has a high effects to wireworms larvae in 30 days when fungus application was 1×10^7 conidia/g of soil, the mortality of these pests has reached to 81-87,0%. We conclude that the capacity of these isolates to reduce the damage of soil pests as white grub and wireworms, also whiteflies nymphal and adult population in greenhouses is an encouraging step towards developing alternative pesticides

Keywords: *Beauveria bassiana* isolates, entomopathogenic activity, biological control of soil and ground pests.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Beneficial Microorganisms as Bio-Fertilizer for organic vegetable production in Kyrgyzstan****Tinatin DOOLOTKELDIEVA, Saykal BOBUSHEVA***Kyrgyz-Turkish Manas University, Faculty of Agriculture,
Plant Protection Department, Bishkek, Kyrgyzstan**e-mail:tdoolotkeldieva@gmail.com***Abstract:**

Vegetable growing is one of the leading branches of agriculture in Kyrgyzstan, where more than 70 species of vegetables are grown. The most common in greenhouses are cucumber, tomato, leek, cabbage, pepper, spinach, lettuce leaves and other plants. Optimal conditions (humidity, temperature, etc.) led to an increase in plant diseases, pathogens and their widespread distribution. It is established that more than 80% of infectious diseases of plants cause by fungal organisms, and the main sources of infection are the seeds of vegetables. In Kyrgyzstan, usually chemical pesticides and fungicides are used for plant diseases control. The use of toxic chemical preparations destroys and poisons not only phytopathogens, but also adversely affects the soil, soil organisms, pollinators and other beneficial organisms. The principles of organic farming are based on the preservation of the ecological balance of the environment and human health, the abandonment of chemically synthesized fertilizers and pesticides, genetically modified seeds and seedlings. Therefore, our goal was to develop a commercial formula of bio-fertilizers based on soil rhizosphere bacteria to protect seeds, seedlings and plants from soil plant pathogens, from abiotic stress factors and ensure rapid growth and healthy crops without chemicals. A liquid formulation of Biofertilizer based on soil microorganism (*Streptomyces spp.*), having a high effect on seed germination rate and growth of seedlings, shoots and maturation phase of plants was developed and tested in field conditions. This bio product protects seeds and seedlings of agricultural plants from soil infection, increases the resistance to fungal and bacterial diseases, to adverse abiotic and biotic factors of the environment. It enhances root growth and above-ground organs, accelerate flowering, fruit bearing and increases productivity. This product is increasing crop productivity through impacting to rhizosphere saprophytic microorganisms, soil useful microorganisms and soil quality. Target crops: beans, cucumbers, potatoes, onion, tomato and pepper. Treatment of seeds by biological fertilizer protects the culture, ranging from seed to plant and provides the optimal stand density, minimum consumption of seeds (one seed - one plant). This biofertilizer provides fast growth of healthy seedlings, shoots and all phases of plants in low fertility soils with low quantities of organic matter, especially in new cultivated or freshly cultivated lands with a shortage of irrigation. It is economical to use because it uses in a low concentration and low dose.

Keywords: soil microorganism metabolite, liquid formulation, biofertilizer, seed treatment, growth promoting effect, sustainable organic agriculture

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*
Microbiological Properties of Koumiss from the Naryn Region, Kyrgyzstan

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Abstract:

Kyrgyzstan is known as a country, in accordance with the geographic area, where are farm the horses and also made from mare's milk koumiss. Koumiss is a fermented milk drink mentioned in the 5th century BC as preferred drink of the gods. It's consumed in the countries of the Caucasus region- Kyrgyzstan, Kazakhstan, Mongolia, Chine and some regions of Russian. It is mostly produced from mares' milk by spontaneously fermentation of lactose to lactic acid and alcohol and containing abundant of probiotics considerable positive effect on human health. Diversity of microbiota will differ because of the geographical conditions and animal species.

The color of koumiss has a grayish-colored. Koumiss is a tasty alcoholic and acidic product. Koumiss generally contains approximately 90% humidity, 2.1% protein, 6.4% lactose, 0.5-1.5% lactic acid, 2.4% lactose, 0.3% ash and 1.8 % fat. The finished product contains between 0.6 and 2.5% alcohol, 0.7-1.8% lactic acid and 0.5 -0.9% CO₂.

A total of 25 koumiss samples, which collected from the different part of Naryn region, were examined. The meaning of pH was ranging between 3.55-4.32 and the meanings of the total aerobic mesophilic bacteria, lactic acid bacteria, yeast and mold, Staphylococcus-micrococcus and coliform group bacteria were ranging between 5.16±0.009 - 7.05±0.011, 5.13±0.026 - 7.10±0.004, 7.08±0.026, 4.53±0.009 - 6.83±0.006, 0.77±0.249 - 4.17±0.044, 4.05±0.027 log cfu/ml-1, and 1,26±0,089 log cfu/ml-1 (only one sample has positive with the coliform group bacteria), respectively.

Keywords: Kyrgyzstan, Koumiss, Effect on human health, lactic acid bacteria.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Effects of Crsyallization on Bioactive Characteristics of Honey*

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Abstract:

Melissoplainological and biochemical analyses of 50 honey samples (citrus, sunflower, chestnut, clover and cotton) from different botanical origins were performed in this study. Total phenolic content of honey samples throughout 18 months of storage were determined spectrophotometrically with Folin Ciocalteu method, antiradical activities with DPPH method and antioxidant activities with phosphomolibdenum method. Fructose (F) content of honey samples varied between 31.44-35.16 %, glucose (G) contents between 22.46-32.71 % and sucrose contents between 0.37-1.94 %. Moreover, G+F contents of clover, citrus, sunflower, chestnut and cotton honeys were respectively observed as 67.87, 66.21, 67.39, 53.90 and 66.26 %. F/G ratios of honey samples varied between 1.07-1.40 and glucose/water (G/W) ratios between 1.36-1.94. Furthermore, biological analyses performed in every 3 months throughout 18 months of storage revealed decreasing total phenolic content, antiradical and antioxidant activities in time for honey samples.

Keywords: Honey, crystallization, sugar analysis, total phenolic content, antioxidant activity, antiradical activity

**Acknowledgement: This study was funded by Erciyes University, Scientific Research Project #FCD-2013-4089*

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress
Physicochemical and Bioactive Properties of Turkish Chestnut Honeys*

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Abstract:

The study was intended to identify and quantify some sugar profile and evaluate the physical parameters and antioxidant properties in 15 chestnut honeys of different botanical origins in Turkey. After the palynological characterization, the mean values of physico-chemical parameters were obtained as 82.11±7.59 mm Pfund color; 17.33±0.87 % moisture; 23.83±7.79 mg/kg HMF; 15.12±3.29 Diastase Number (DN); 754.12±107.23 mg/kg proline; 28.86 mEq/kg Acidity; 0.93±0.36 mS/cm. Analyzed chestnut honeys conformed to the international honey standards about sugar profiles and some their rates. Besides reporting these results, the samples had showed 154.12±11.89 mg GAE/100 g sample of total phenolic substance, 37.65±3.37% inhibition of DPPH radical scavenging activity, respectively. With this research, qualities of chestnut honey results were revealed and updated by comparing literature data. And also, the test results suggest that chestnut honey may be utilized the treatment of free radical induced diseases due to its high quality.

Keywords: Chestnut honey, *Castanea sativa*, bioactive, physicochemical properties

*Acknowledgement: This study was funded by Erciyes University, Scientific Research Project # FYL-2016-6760

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

The Effect of Mad Honey Intoxication on Cardiac Enzyme Activity

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Abstract:

Grayanotoxins (GTXs) are a group of closely related toxins found in Rhododendrons and consumption of GTX containing Rhododendron honey may results in intoxication. Such intoxication is prevalent especially in the Black Sea region of Turkey and has been reported less frequently in Germany, Austria, Japan, Korea, North America, New Zealand, and Nepal. In our report, although the case was not from Black Sea region, the honey was provided from that region and the diagnosis of "mad honey intoxication" was confirmed by the pollen analysis of the honey consumed. Symptoms of mad honey intoxication are dose-related. The most common symptoms are bradycardia and hypotension, while rare symptoms such as impaired consciousness, seizures, and atrioventricular block (AVB) have also been reported. It is suggested that some symptoms may be caused by an inability to inactivate neural sodium ion channels resulting in continuous increased vagal tone as M2-receptor subtypes are also involved in GTX-induced cardiotoxicity. In our case report, the patient presented with some of the signs and symptoms typical of mad honey intoxication.

Keywords: Mad honey, intoxication, grayanotoxin

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Comparison of some hematological values and alpha-naphthyl acetate esterase (ANAE) positive lymphocyte ratios of sheep breeds (Jaidara, Hissar and Edilbaev) reared in Kyrgyzstan

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Abstract:

The aim of this study was to compare the hematological parameters and ANAE positivity ratios of sheep's (Jaidara, Hissar and Edilbaev) which reared in Kyrgyzstan and present the reference values for these breeds. Eighty (80) ewes (Jaidara, n=30; Hissar, n=20 and Edilbaev, n=30) were clinically examined and blood samples were taken. Although, WBC values were the highest in Edilbaev ewes, there were no significant differences among the sheep species. RBC, HCT, MCV, MCH, MCHC values were found to be higher ($P<0.05$) in Hissar ewes than the others. In contrast, HGB values were determined highest ($P<0,05$) in Jaidara ewes. RDW-CV (red cell distribution width) and RDV-SD (standard deviation) values were found higher ($P<0.05$) in Hissar ewes than the other breeds and a difference was determined among the species ($P<0.01$). Alpha-naphthyl acetate esterase (ANAE)-positive lymphocyte ratio values were found ($P<0.01$) higher in Edilbaev ewes when compare to others. Consequently, some hematological values and ANAE-profile were determined and advised as reference values of sheep's (Jaidara, Hissar and Edilbaev) which live in Kyrgyzstan.

Keywords: Sheep, Native breeds, hematologi, ANAE.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Comparison of Mathematical Models on Growth in Partridge

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Abstract:

This study was conducted in order to determine the goodness of fit of Brody, Gompertz, Logistic, and von Bertalanffy growth curve models in partridge (*Alectoris chukar*). The growth curve parameters A (upper asymptote or mature weight parameter), B (scale parameter related to initial weight), and K (instantaneous growth rate parameter) were determined as 623.4, 1.05, and 0.075 for females and 723.8, 1.06, and 0.073 for males in the Brody model, respectively, 472.9, 3.47, and 0.207 for females and 565.3, 3.59, and 0.192 for males in the Gompertz model, respectively, 440.2, 12.89, and 0.332 for females and 517.0, 14.13, and 0.319 for males in the Logistic model, respectively, and 498.9, 0.77, and 0.164 for females and 608.8, 0.79, and 0.150 for males in the von Bertalanffy model, respectively.

While determining which growth curve model presented the better fit, the coefficient of determination (R^2), adjusted the coefficient of determination (adj. R^2), mean square predicted error (MSPE), Durbin-Watson value, correlation between estimated live weight and residual values (RESC), Akaike's information criteria (AIC), and Bayesian information criterion (BIC) were used. As a consequence of the study, it was determined that the Gompertz model yields a better fit to the data for the partridge, as its coefficient of determination and adjusted coefficient of determination are high, its values of MSPE, RESC, AIC, BIC are low and there is not an autocorrelation between the residual values. As a result, the Gompertz model presented a better fit with the partridge data.

Keywords: partridge, mathematical model, growth curve

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Safflower (*Carthamus tinctorius* L.) As a Food and Energy Plant and Turkey Example****Fikret AKINERDEM***Selçuk University, Head of Biofuels Research and Applied Center**e-mail: fakiner@selcuk.edu.tr***Abstract:**

With the increasing value of agriculture as well as at environment, food and energy countries have begun to provide energy for the country. For this reason, they have made an effort to search for food and energy as raw materials within the framework of the potentials of countries with no food and energy capacity. Turkey is among the countries that are in this search. Turkey does not have enough production about oilseed plants besides energy. For this reason, it pays about 50-60 billion US Dollars in foreign markets per year to meet the needs of both issues. On the other hand, these two sectors are able to address and 5 million hectares of land in the country are included with drought resistant plant that can be grown in the fallow field and one of them safflower, originated in Anatolia. In this respect, 5 million hectares of fallow field has the chance to grow safflower plant with about 6 million tons of safflower seeds. From this amount, 2 million tons of vegetable crude oil and 4 million tons of cake can be obtained from the safflower seed so that it can be partially saved from the energy dependence and totally food dependence as food raw materials. Within this framework of thoughts, our working in the beginning of 2000s has been successful. So, safflower production was 18 tonnes in our country formerly and today, safflower production is 70.000 tonnes recently. Our national future target is to increase safflower production.

Keywords: Energy, Food, Safflower, Turkey.

Oral presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Developing of Hybrid Bell Pepper (*Capsicum annuum* L.) Varieties and Morphological Characterization for Protection Cultivation

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Abstract:

Pepper (*Capsicum annuum* L.), is one of the most important vegetable species produced both in the world and in Turkey. Turkey is an important producer of pepper, in third place after China and Mexico. Development of new hybrid pepper varieties adapted to our region is an important issue. The selected 18 pure lines in twenty five bell type lines were crossed as 8 male and 10 female in spring term of 2012. This study was carried out to test of yield performances and determine morphological characterization of bell pepper hybrids at the Vegetable Department of Batı Akdeniz Agricultural Research Institute (BATEM). Thirty five hybrids of eighty hybrids and five commercial hybrids were tested in randomized complete block design (RCBD) with two replications in the single crop season in 2013 in unheated glasshouses. Yield of fruits and morphological characterization of hybrids were evaluated. The performance of total fruit yield ranged from 1596 to 3159 g per plant of hybrids. As a result, seven superior hybrids were selected for demands of market. The hybrids were also presented to private sector during growing season. At the end of the project, two bell pepper hybrids were determined as candidate varieties. And candidate bell pepper hybrid varieties and 5 inbred lines were introduced to the private and public sector in "Products Catalog". Some inbred lines were sold to private sector for their breeding studies.

*This study is a part of "Improvement of F1 Hybrid Vegetable Varieties and Qualified Lines in Turkey" project (KAMAG-109G029) that is supported by Scientific and Technological Research Council of Turkey (TUBITAK).

Keywords: Pepper (*Capsicum annuum* L.), hybrid pepper breeding, yield performance, morphological characterization, candidate hybrid

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Energy Saving System of Fertilizer Application in Crop Rotation on Brown Soils of Kyrgyzstan****A.ABDULLAEV¹, N.DUISHEMBIEV², A.AKHMATBEKOV², M.MOLDOKANOVA²**¹*The Kyrgyz-Turkish University of Manas,*²*Kyrgyz National Agrarian University. K.I. Scriabin**e-mail: abdykerim62@mail.ru***Abstract:**

Energy-saving fertilizer systems were studied in the first link of the fifth rotation of the field crop rotation with following crops: 1) Kyial variety of winter wheat after alfalfa; 2) Adyr variety of winter wheat; 3) KO-70 variety of sugar beet.

According to results, after application complete mineral system (N60P15K30) the highest grain yield of the winter wheat varieties Kyial and Adyr were obtained 39.6 centner / ha and 51.4 centner / ha, respectively. Comparing with control of the varieties Kyial and Adyr yield increased 18.3 centner / ha and 19,2 centner / ha. After application fertilizer consumption N135P210K67.5 with annual phosphorus input the yield was 473.4 c / ha, and with an energy-saving system it reached 479.4 c / ha.

Keywords: nitrogen, phosphorus, potassium, mineral, Kyrgyzstan, organo - mineral and equivalent system of fertilizers.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Nutritional Value and Use of Quinoa*

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Abstract:

Quinoa (*Chenopodium quinoa* Willd.) is a plant that grows in Andean regional. Quinoa has important place in human and animal nutrition. It can tolerate different conditions such as cold and drought. Quinoa belonging to the Chenopodiaceae family is a good protein source. Its seed contains all essential amino acids. Quinoa is rich lipids, proteins, dietary fibers, vitamins B1, B2, B6, C, and E, and minerals, especially calcium, phosphorus, iron, and zinc. Quinoa has different bioactive phytochemicals such as phenolics, betanins, and carotenoids. It is one of the plants with high antioxidant properties. It can be added in many foods to improve their nutritional properties. It is used in many food fields such as soup, salad, bread, rice, fermented drinks, cakes, biscuits, edible films, and food-grade package materials. It has no dominant taste and odor. Celiac disease can easily consume quinoa because it does not contain gluten.

Keywords: Quinoa, nutritional value, celiac disease, protein source

This research was funded by the Research Unit of Pamukkale University.

Oral presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Productivity of winter wheat depending on soil cultivation under Central Anatolian Region conditions of Turkey

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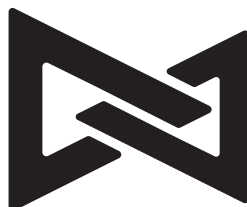
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Abstract:

The highest yields of wheat are possible by keeping of technology, one of the main elements of which is the soil cultivation. The aim of our research was the definition of the role of tillage in improving the yield of winter wheat in the Region of Central Anatolia. The work was carried out in the stationary experiment on the margins of Farm Enterprise - Konuklar to the General Directorate of Farm Enterprises (TIGEM), located in the southern area of the region in 2006-2009. The soil of pilot area is sandy-clay with little humus (1.60-1.85% humus). Techniques for soil treatment were traditional, minimum, no till and no till + herbicid. The content of gravimetric moisture by taking the average was as follows: 21.42% for the traditional, the minimum - 21.69%, the no till and no till + herbicid - 23.01%. Yields of winter wheat in the traditional treatments ranged from 3,319 to 2,290 t ha⁻¹, at a minimum - from 2,996 to 2,265 t ha⁻¹, at no till from 3,936 to 3,615 t ha⁻¹, at no till + herbicid from 3,528 to 3,007 t ha⁻¹. The least amount of expenditure in crops of winter wheat was recorded in treatments of no till and no till + herbicid (12606.26 and 13226.23 Mj ha⁻¹), the highest - in the traditional and minimal (14803.40 and 13335.08 Mj ha⁻¹). The smallest amount of income was recorded in the traditional and minimal (37812.81 and 38125.54 Mj ha⁻¹), the largest - at no till and no till + herbicid (53173.82 and 47006.68 Mj ha⁻¹). In the no till and no till + herbicid spike length, number of spikelets per spike, number of kernel per spike, kernel weight per spike, harvest index and test weight increased significantly, and the plant height, the number of productive stems and thousand kernel weight statistically unchanged. The lowest volume of test weight celebrated by the traditional and the minimum (72,50-72,27 kg 100 l⁻¹), the test weight of no till and no till + herbicid reached to 74,35-73,05 kg 100 l⁻¹.

Keywords: winter wheat, soil cultivation, yields.



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POSTER PRESENTATION ABSTRACT

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Effect of Some Plant Extracts on Seedling Development of Stored Pepper Seeds with Different Moisture Content and Temperatures

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Abstract:

In this study leaf extracts of vegetables such as tomato, rocket and lettuce were evaluated like alternatives to growth medias were evaluated during the development of seedlings obtained from pepper seeds stored with 3 and 5% moisture content(mc)at -18 and 25°C for two years. Plant leaf extracts; the leaves were collected during the production season and were shredded, held in tap water at room temperature for one day. Regulation of mc in pepper seeds; the initial moisture was reduced to 3% and 5% levels with LiCl saturated salt solution and stored at room temperature. Tomato, lettuce and rocket plant extracts were applied once a week as alternatives to irrigation water (control) during seedling growth criteria such as plant height(1), stem width(2), number of true leaves(3) and lamina width(4) were measured during the experiment. According to the results; The best results in seedling measurements of seeds stored at -18 °C and 3% mc were taken from lettuce plant extract for 1st, 2nd and 4th criteria. In seedling measurements of seeds stored at -18°C and 5% mc were given good results from rucola plant extract for 2nd, 3th and 4th criteria and the seedlings measurement of seeds stored at 25°C and 5% mc showed the best results from tomato and rucola extract in the 1st and 2nd criteria. Generally; practices have advantages over the control group for criteria 1 and 2 and the highest values were taken from the -18°C and 3% mc groups, which retained vitality for a long time.

Keywords: Pepper, Plant leaf extract, Seed storage

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Mineral Nutrient Status of Almond (*Prunus Amygdalus L.*) Orchards Growing in the Uşak (Turkey) Province*****Ercan YILDIZ¹, Veli UYGUR²**

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Abstract:

This experiment was carried out almond orchards which grown in Uşak province. For this experiment, 49 almond orchards were selected from all districts. In experiment orchards, soil samples were taken only in 2014, almond leaves were sampled both 2014 and 2015. By comparing the results of soil and leaf samples with boundary values, it is attempted to determine feeding problems and conditions of nutrient elements of investigated orchards. According to the results, it has been found that the soils of experimental area were loamy (37%) and clay loam (63%) in texture. The soils do not have salinity problem. It was determined that the problem of lime in the orchard of about 64%, and pH is mainly slightly alkaline. Organic matter contents of soils are medium levels. It has also been found that 80% magnesium, 88% phosphorus, 96% zinc and 100% potassium of almond orchard soils had insufficient levels. According to the results of leaf analysis, 69% for phosphorus, 55% for magnesium, 71% for iron, 80% for zinc and 63% for copper concentration of almond leaves had no sufficient levels.

Keywords: Almond orchard, Mineral nutrition, Soil and leaf analysis

**Acknowledgement:* This study was funded by Usak University, Scientific Research Project #2013-MF-015

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Ampelographic Characteristics of Local Grapevine Cultivars Grown in Yüksekova (Hakkari)

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Abstract:

This study was carried out in order to find out ampelographic characteristics of local grapevine cultivars Besirane, Daufi, Ğatunok, Mercani, Merceğöl, Mirani, Öküzgözü, Reşmiv, Savdani, Tırşık, Tritelk and Zerik grown in Yüksekova (Hakkari-Turkey) on frame of internationally recognized norms. Grapevine cultivars that was described in this study contribute to scientific knowledges related to available Turkey's grapevine genetic resources. It is believed that this study carried out in region will be a step for research, and technical and cultural applications to do in future.

Keywords: Ampelographi, Navite grape varites, Yüksekova

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Effect of Nitric Oxide Treatments on Plant Growth and Some Physiological and Biochemical Properties in Pepper Grown Under Salinity Stress During Seedling****Ertan YILDIRIM¹, Melek EKİNCİ¹, Selda ÖRS², Mostafakamal SHAMS¹**¹Atatürk University, Agriculture Faculty, Department of Horticulture, Erzurum, Turkey²Atatürk University, Agriculture Faculty, Department of Agricultural Structures and Irrigation Erzurum, Turkey

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Abstract:

Salinity is one of the most important environmental problems limiting plant performance, particularly in arid and semi-arid climates. The adverse effect of salinity could vary depending on climatic conditions, plant species and defense system of plants. The aim of the present study was to evaluate the role of nitric oxide on plant growth and some physiological and biochemical characteristics in pepper seedling under salinity stress. Thus a factorial laboratory experiment with a completely randomized design was carried out at the Ataturk University. Treatments include different doses of salinity (0, 50, 100 and 150 mM of NaCl) and nitric oxide (0, 50, 100 and 150 μ M of sodium nitroprusside). The results of this study revealed that nitric oxide and salinity significantly affected the net photosynthesis, Chlorophyll, stoma conductivity, leaf water potential, amino acid and antioxidants parameters. Salinity decreased the net photosynthesis, chlorophyll, stoma conductivity, leaf water potential, dry and fresh weight of root and shoot but it increased CAT, POD and SOD activity and hydrogen peroxide, MDA in pepper seedlings. However, the simultaneous application of nitric oxide and salinity increased the net photosynthesis, chlorophyll, stoma conductivity, leaf water potential, dry and fresh weight of root and shoot in comparison to the plants treated with 150 mM of NaCl, and decreased the CAT, POD and SOD activity hydrogen peroxide and MDA. The results of this study suggested that nitric oxide treatment could decrease the adverse effect of salinity in pepper seedlings.

Keywords: Nitric oxide, Pepper, Plant Growth, Salinity stress,

**Acknowledgement:* This study was funded by Atatürk University, Scientific Research Project BAP 2015/161

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Bacterial Fertilizer Effect on Yield and Yield Parameters of Cucumber

**Ertan YILDIRIM¹, Atilla DURSUN¹, Metin TURAN², Melek EKİNÇİ¹,
Fazilet P. KARAGÖZ¹, Raziye KUL¹**

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Abstract:

In recent years, there has been an increase in the use of organic fertilizer, increasing in the yield and quality and environment friendly in vegetable growing. For this reason, the effect of bacteria applications on yield and some quality parameters were investigated in cucumber (*Cucumis sativus* L., cv. A.21) under greenhouse conditions. Two applications (Azotobacter spp., and mixed of *Bacillus subtilis* and *Bacillus megatarium*) have three doses (1, 3 and 5 gL⁻¹ and control (no application)) were evaluated in a completely randomized design with 3 replications. The applications were treated after a week of planting of the seedlings. The solutions were given to the root zone of the plant and repeated 3 times at intervals of 10 days. Average fruit weight, fruit number per plant, fruit weight per plant, plant length, fruit width and length, total soluble solid and dry matter yield and mineral content were evaluated on cucumber plants and fruits. The effects of applications were significant on plant growth of cucumber. The bacteria applications increased in yields and parameters of cucumber. The applications were also found to have a significant effect of the mineral content of cucumber fruits.

Keywords: *Cucumis sativus*, Macro and micro elements, Nutrition, Plant development, Yield

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Determination of The Morphological Characterization and Heterotic Effects in Qualified Pure Lines in Tomato Breeding****Mehmet AYYILDIZ, Önder TÜRKMEN***Selcuk University, Faculty of Agriculture, Department of Horticulture, Konya, Turkey**e-mail: ayyildiz692@hotmail.com***Abstract:**

The aim of the study was to determine the morphologic features of 36 genotypes in S6 level, which have been acquired by expansion of F1 sorts and from different countries' sources is forming. In order to determine the morphological characteristics of the genotypes genetically made by the classical method until the end of level S6, each genotype 20 plants in the spring of 2016 Lider Tarım Ltd.Şti. Planted in the greenhouse of his company. In the study conducted, RR homozygote was determined for the resistance of root-ur nematode to 7 materials from 36 materials. The morphological characteristics of the 22 material were fruit weight over 220 g, fruit calyx structure open, fruit wall thickness larger than 8,50 mm large, fruit color red, fruit harvest time early and Tomato Fruit Brix Value has been detected more than 4 brix for 25 genotypes. As a result of the study, hybrid programs, hybrid genotypes to determine the capabilities of the overall combination of the variety decided to get into.

Keywords: Tomato, Morphological Characterization, Genotype, Fruit

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Phenological and Molecular Characterization of Some Walnut (*Juglans regia* L.) Genotypes Obtained by Hybridization

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Abstract:

The parents Maras 18 and Chandler varieties and 13 F1 walnut genotypes and used in this study. Those geneotypes were investigated to identify relationships among the parents and tehe F1 individuals using Simple Sequence Repeat (SSR) markers and phenological traits. In the study six SSR markers were used and 59 alleles were interrogated. According to the results of molecular analysis the genotypes 60, 64, 65, 66, 69 and 71 were included in the group of Maras 18, while the genotypes 62, 63, 72 and 73 were involved in the group of Chandler. Moreover, the similarity between the genotypes 72 and 73 89% and 71% for the 60 and 71. There was no alleles interrogated for the genotypes 61, 68 and 70. Polymorphism information content (PIC) of the SSR markers used in the study was 97%. Maras 18 and Chandler varieties are distant relatives (similarity 23%) according to the molecular analysis and using those parents in the breeding programs might expand the genetic variation.

Keywords: Walnut (*Juglans regia* L.), breeding, SSR, molecular characterization, phenology

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Identification of Some Selected Edible Pumpking Parent Lines by Molecular (Ssr) Methods

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Abstract:

This study was carried out to determine the molecular characterization of 83 well-established lines in the prospective S4 stage in the edible pumpkins (*Cucurbita pepo* L.). Molecular diversity between edible squash genotypes was determined by the SSR marker. Thirty-one EST- SSR markers yielded a total of 122 amplified DNA fragments, of which 107 (87.70%) were polymorphic, were used to measure the degree of genetic diversity. The DARwin software was used to generate a Dice coefficient dissimilarity matrix that was then used to construct an unweighted neighbor-joining dendrogram of the accessions. Correlation of the dissimilarity matrix and the dendrogram was demonstrated with a Mantel test. Neighbor-joining dendrogram demonstrated that the germplasm collection is divided into three main groups. The highest PIC value was calculated for the marker CUTC006209 as 0.42, and the average dissimilarity calculated among the entire collection was 0.28, which indicated a relatively low level of genetic diversity within the collection. According to the Mantel test results, correlation of the dissimilarity matrix and the dendrogram was 0.99 which is a very high score that indicates a very strong degree of correlation. Genetic relationships calculated based on molecular genetic data demonstrated the degree of diversity within the population along with the pattern of clustering among accessions which will provide valuable information to breeders for future breeding programs.

Keywords: Edible squash, molecular description, SSR

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

The Effect of Different Irrigation Methods and Water Deficits on Membrane Damage Index in Silage Maize Growing

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Abstract:

This study was conducted as a field trial to determine the difference in membrane damage index in different irrigation and water restraint practices in OSSK-644 hybrids silage maize (*Zea mays* L.) cultivation. In the experiment, three different irrigation methods (furrow irrigation, surface drip irrigation, subsurface drip irrigation) and three levels of different water deficits (33%, 67%, and 100% of the available water) were applied. As a result of the research, the lowest values among the methods were found in the method of subsurface drip irrigation with the highest value in the furrow irrigation method. In addition, the membrane damage index was determined highest when furrow irrigation method was applied with 67% water deficit and, lowest when subsurface drip irrigation method was applied with full irrigation.

Keywords: irrigation methods, water deficit, membrane damage index, silage maize

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Investigation of Responses of Some Bean (*Phaseolus vulgaris* L.) Genotypes to Different Levels of Salt Stress*****Enes FİDAN¹, Aytakin EKİNCİALP², Suat ŞENSOY³**

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Abstract:

This aimed to investigate the responses of 20 different bean genotypes to different levels of salt stress and the reactions of these genotypes at 0 mM, 25 mM and 50 mM NaCl were investigated. According to the randomized plot design, the plants were grown in a 2:1 ratio pots containing peat-perlite at 23±2 °C in a climate chamber. Salt application was carried out for 4 consecutive days with irrigation water. At the end of the study, nutrient elements (Na, P, K, Ca, Mg, Zn, Fe, Cu and Mn) in the bean genotypes were determined and in order to determine the tolerance to salinity, 0-5 scale, number of leaves, shoot diameter, shoot- root length, shoot-root dry and fresh weights were investigated. At the end of the study, it was determined that there were significant differences in tolerance between the genotypes. According to the scale 0-5, especially in the group receiving 50 mM salt dose, it was found that there was significant developmental retardation. In parallel with the increase of applied salt concentration, the shoot size, leaf number, shoot diameter, shoot age weight, K, K:Na ratio and Ca:Na ratio decreased; Root dry matter and Na content were increased. Four genotypes (8, 11, 13 and 19) were found to be tolerant to the salt stress, but 3 genotypes (14, 18 and 20) were found to be susceptible to the salt stress.

Keywords: Bean, Genotype, NaCl, Nutrients

**Acknowledgement:* This study was funded by Van Yuzuncu Yil University, Scientific Research Project #2015-FBE-YL359

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress
Morphological Characteristics of Some Qualified Industrial Tomato Genotypes*

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Abstract:

In this study, 95 pieces of industrial tomato genotypes were used the material of this study. In order to conduct morphological characterization, the genotypes were planted in the greenhouse of the company in Antalya on March 21, 2015 so that each genotype is consisted of 20 plants. As a result of research, it was founded that, 7,4% of the genotypes anthocyanin coloration existent while 92,6% anthocyanin coloration not existent. It was determined that according to the growth type 66,3% of the genotypes determinate while 33,7% not determinate; in terms of growth power 26,3% of the genotypes low, 57,9% medium and 15,8% high of them. According to internode length among the genotypes 46% short, 40% medium and 13,7% long; it was founded that leaves 42,1% of the genotypes subvertical, 47,4% horizontal and 10,5% subpendulous. It was determined that leaf length 15,8% of genotypes short, 43,8% medium, 41,1% long while leaf width 15,8% of genotypes narrow, 63,2% medium and 21,1% wide of them and 48,4% of the genotypes small leaflet existent while 51,6% not existent. It was determined that according to the stock state of the petiole 31,6% of the genotypes subvertical, 65,3% horizontal and 3,2% subpendulous. It was showed that in clusters of genotypes had average 6 flowers. It was founded that, 58,9% of the genotypes early florescence and 42,1% has mid-term florescence.

Keywords: Morphological characteristics, Tomato

**Acknowledgement: This study was funded by Ministry of Science, Industry and Technology, Project no: 0652.STZ.2014*

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Characterization of Superior Pure Melon (*Cucumis melo* L.) Lines Using Issr Method*****Yeşim DAL¹, Necibe KAYAK¹, Ünal KAL², Erdoğan Eşref HAKKI³, Önder TÜRKMEN¹**¹: Selcuk University, Faculty of Agriculture, Horticulture, Campus, Konya, Turkey²: Osmaniye Korkut Ata University, Kadırlı Applied Sciences College, Osmaniye, Turkey³: Selcuk University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition Selcuk University, Campus, Konya, Turkey

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Abstract:

In this study, the genetic material used was comprised of the genotypes collected from several provinces of Turkey and the material derived from commercial varieties by considering different fruit types valuable as resource parent material for F1 hybrid melon cultivar development. The genetic diversity among the breeding material was determined using ISSR method. In total, 68 melon genotypes, to be evaluated as the parental lines of the breeding program, were used in molecular characterization. DNA extractions from young leaves of the genetic material were performed using the CTAB protocol with minor modifications. After the preliminary screening of randomly selected genotypes using a large set of ISSR primers, the polymorphic fragment generating primers that presented consistent results were selected for final analysis of the whole genetic material. Genetic distances among the genotypes were determined using the consistently amplified 88 polymorphic fragments. Based on the analysis, sufficient information about the genetic background of the genotypes in the breeding program was obtained and this information was used in conscious selection of the material within the breeding program.

Keywords: Melon, *Cucumis melo* L., ISSR, Moleküler characterisation, polymorphism***Acknowledgement:** This study supported by Tübitak, Project No:1505-5140078

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Molecular Studies in Almond

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Abstract:

The almond (*Prunus dulcis*) in Rosaceae family is a major tree nut grown in areas of Mediterranean climate. In terms of almond production, United State is the first almond producer with 1.545.500 tonnes in the world, followed by Spain (195.704 tonnes), Australia (160.000 tonnes), Iran (111.936 tonnes) and Morocco (101.026 tonnes). In recent years, molecular markers have been used to study genetic diversity and cultivar identification of almond. Methods based on knowledge provided by advances in molecular genetics, notably molecular markers, promise faster and more efficient approaches to cultivar improvement. In fact important tools such as molecular markers, maps, DNA sequences and quantitative trait loci (QTLs) have been developed and applications at the breeding program level have already started. Studies carried out for this purpose are genetic mapping, identification of genotypes and determination of genetic relations, investigation of disease resistance and tolerance conditions, determination of blooming date especially such as late blooming candidate genes and identification of genes that play an important role in fruit composition. There has been an increase in marker assisted selection studies which have been conducted for many features. This situation has brought a different dimension to almond breeding trials. In this study, the general situation of molecular studies carried out on almond in the world was evaluated.

Keywords: Almond, Molecular genetic, *Prunus dulcis*

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress
A Social Responsibility Project: Childs and Environmental Awareness

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Abstract:

One of the disadvantages caused by intense urbanization is the isolation from nature and growing up our children disconnected from nature and the natural plant production systems. Nowadays most children live in big cities and can only get to know agricultural products on the store shelves. As a result of this disconnection, physical and emotional development of children are adversely affected, responsibility to protect natural resources is not developed, the adoption of the environmental awareness and environmental sensitivity concepts are increasingly difficult. However, the recognition and protection of natural resources with environmental awareness, manners and knowledge are gained characters at early ages. In order to create awareness of natural resources and environmental protection, the recognition of these concepts should be known primarily. One of the most appropriate solutions to the problem will be created using the urban sample models based on nature education for children. The aim of this project is to introduce agriculture and agricultural production processes to the 10-11 age group children in primary education by direct involvement, enabling them to follow up the natural cycles in nature and to increase children's natural curiosity by encouraging the love of nature but also strengthening physical and social skills as a game format.

Keywords: Social Responsibility Project, Childs, Environmental Awareness

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Determination of Root and Crown Rot Agents in Some Wheat in Denizli Province Area

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Abstract:

The total of 16,980,000 tons of wheat are produced in the field of 6,433,272 hectares of wheat in Turkey. The root and crown root diseases are a problem in wheat cultivation areas and cause significant economic losses. It is known that the yield losses caused by root rot in Turkey and in the world are between 3-50%. In this study, some of the districts of Denizli were surveyed in different wheat cultivation areas and the root and crown root factors observed in these areas were investigated. A total of 32 different planting areas were taken from wheat stem samples and surface disinfections (2% NaOCl 2 min) were applied. These samples were then transferred to a Potato Dextrose Agar (PDA) medium containing streptomycin and isolated. At the end of the incubation period the genus level of fungus developed from wheat roots was determined. *Rhizoctonia* spp., *Fusarium* spp., and *Phytophthora* spp disease agents have been obtained from collected samples. *Bipolaris* spp. have been commonly identified in survey studies. Other disease are *Fusarium* spp. and *Rhizoctonia solani* respectively has been attention.

Keywords: Root and crown rot, wheat, *Fusarium*, *Bipolaris*, *Rhizoctonia*, *Phytophthora*

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress
Effect of Different Nozzle Type on Dicamba + Triasulfuron Performance*

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Abstract:

The objective of the research was to determine the effect of nozzle type on the performance of Dicamba plus triasulfuron on four broad leaved weed species (*Matricaria chamomilla* L., *Melilotus officinalis* (L.) Desr., *Sinapis arvensis* L. and *Galium tricorntutum* Dandy). The project was carried out under semi-controlled conditions in 2010-11 at Adnan Menderes University, Faculty of Agriculture, Research and Application Center. Herbicide performance was evaluated with 20 l/da spraying volumes and tap water by using cone nozzle and flat fan nozzle and based upon ED50 (15 g/ha), ED90 (40 g/ha) and recommended (125 g/ha). The herbicide was applied separately under 4 atm pressure by using 11002 flat fan and 6.1.2 cone nozzles. The study had five replications and was repeated twice. As a result, it was determined that the performance of dicamba + triasulfuron was not important for MATCH and MELOF depending on the type of nozzle. Both types of nozzles achieved the effect level of 90% and above. A higher effect was achieved with cone nozzles in SINAR and GALTR control.

Keywords: Cone nozzle, Dicamba+Triasulfuron, Flat fan nozzle, Herbicide optimization, Weed

**Acknowledgement: This study was funded by Adnan Menderes University, Scientific Research Project # ZRF-11027*

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Detection and Identification of Citrus Long-Horned Beetles *Anoplophora chinensis* (Forster) (Coleoptera: Cerambycidae), a New Pest in Antalya Province of Turkey by sequencing of mtCOI Region

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Abstract:

In this study, *Anoplophora chinensis* (Forster) (Coleoptera: Cerambycidae) was recorded for the first time on Acer plant in Antalya province of Turkey in 2016. In addition, an approximate sequence alignment of 729 bp was obtained from the sequence analysis of the mtCOI region after amplification of the extracted DNA from the adult samples in this study. The sequence alignment of the BLAST analysis of the sample from the National Center of Biotechnology Institute (NCBI) showed 99% similarity with *A.chinensis*. The phylogenetic tree was constructed by using the sequence data belonging to *A.chinensis* obtained from the NCBI. According to the phylogenetic tree, the Antalya *A.chinensis* population and the Chinese population were placed in the same subgroup and could therefore be predicted that, the origin of the Antalya population is China.

Keywords: *Anoplophora chinensis*, DNA barcoding, mtCOI, phylogenetic tree

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Investigation of Performance of Facility and Other Years of Varieties Switch Grass Grown by Using Mechanization in Turkey*

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Abstract:

Switchgrass (*Panicum virgatum* L.) is a perennial warm climate (C-4) plant. In our country, this plant has been cultivated for the first time by a project supported by The Scientific and Technological Research Council of Turkey (TUBITAK) and carried out by Selcuk University Faculty of Agriculture. With the completion of a TUBITAK project, the 1003 project (invited project) named "Adaptation of Branched Crayon, Adaptation Mapping, Determination of Mechanism Characteristics, Determination of Energy Balance and Biogas Production from Bioethanol Wastes" supported by TUBITAK is continued by the same team pioneer. For this purpose, Kanlow, Shawne and Cave in Rock varieties, known for its adaptation to the region, were cultivated in large areas and biomass yield performance, spring growth rates and flowering times of the plant year and second year were investigated. As a result of the research, it was determined that the species of switch grass differ greatly in the rate of spring growth and the varieties of flowering times according to ecotypes. The biomass yields in the plantation year varieties ranged from 500 to 556 kg/da, whereas in the second year of plant varieties these figures ranged from 3046 to 5566 kg/da. The biomass performances of the yield potential of the switch grass varied greatly due to plantation year. We are convinced that this plant will play a role in the agriculture of the country in the coming years as clarifying the mechanization issue, which is the most important issue affecting the plantation in large areas.

Keywords: Switchgrass, (*Panicum virgatum* L.), Adaptation, Mechanization characteristics Energy Balance,

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Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Automation of Agricultural Irrigation Systems

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Abstract:

Fields are uncontrolled environments where the adverse effects of outdoor conditions cannot be restricted for plants. Since the fields form an open area, it takes place rapidly in the evaporation after irrigation. Today, the importance of irrigating agricultural products in the field is increasing day by day. Global warming and environmental pollution problems affect water resources to be used in irrigation in the negative direction. All these adverse effects have inevitably led to the controlled use of water resources used in field irrigation. Intelligent watering system is a newly arising, popular topic for agricultural systems to minimize the water waste and to increase the quality of the products. Especially in the middle Anatolian regions of Turkey, where the precipitation rates are very low and watering pools are not very common, this topic becomes even more important. Getting data from temperature, soil moisture and whether moisture sensors, and processing these data keeping the seasonal effects and the needs of the product, and achieving and intelligent procedure to open-close the watering pump valves becomes a solid solution for this topic. In this work, a literature survey has been done on these intelligent watering systems and advantages and disadvantages of these systems are discussed.

Keywords: Automation, Agricultural Irrigation, PLC, Sensors

**Acknowledgement:* This study was funded by Necmettin ERBAKAN University, Scientific Research Project.

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**The Effect of Exopolysaccharide Producing Starter Cultures on Some Properties of Yoghurt*****Yusuf TUNÇTÜRK¹, H. İbrahim GÜRAY²**¹*Yuzuncu Yil University, Faculty of Engineering, Department of Food Engineering, Van, Turkey*²*Eastern Anatolia Development Agency, Van, Turkey**e-mail: yusuftuncturk@yyu.edu.tr***Abstract:**

Yoghurt is an important food that takes part in our daily life and nutrition culture. In this study, the effects of the exopolysaccharide (EPS) producing and nonproducing starter cultures on some chemical, biochemical, physical, and sensorial properties of yoghurt were studied. For this, 8 different yoghurt samples were produced by the standard production method using 8 starter cultures. Yoghurt samples were kept in sterilized glass jar at refrigerator condition (4 °C) during 15 days analyses. According to the obtained data; the type of starter culture did not affect the total solids, crude ash, protein and fat contents of yoghurt samples. However, fat acidity (ADV) ($p < 0.05$), pH, titratable acidity, amount of EPS, stability of yoghurt coagulum, viscosity, consistence, stickiness, stickiness/consistence ratio were significantly influenced ($p < 0.01$) by the type of starter culture. Storing period significantly changed the stickiness/consistence ($p < 0.05$), pH, acidity, ADV, EPS content, stability of coagulum, viscosity, consistence and stickiness parameters ($p < 0.01$). Serum stability and viscosity increased depending on increase of EPS concentration in yoghurt samples. Use of different starter cultures did not influenced the smell, taste-flavor, balance of sourness/sweetness, oiliness, general acceptability and aftertaste of yoghurt samples; however, structure and consistency were significantly affected ($p < 0.05$) by this factor. The yoghurt samples having more EPS were more preferred by panelists in terms of structure, consistency and ropiness criteria. As a consequence, it can be said that production of EPS affects the general properties of yoghurt samples and develops some parameters.

Keywords: Exopolysaccharide, Starter culture, Yoghurt

**Acknowledgement:* This study was funded by Yuzuncu Yil University, Scientific Research Project # 2007-FBE-YL096

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Served Foods in "Toy and Yuğ" Ceremonies in The Epic of Manas

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Abstract:

The epic of Manas is the longest epic in the world folk literature which is brought by one of the Turkish clans as known Kyrgyz. The great Kyrgyz hero Manas, his son Semetey and his grandson Seytek, are described as a trilogy consist of 180.000 lines with the epic. Animal based foods are served in the "Toy and Yuğ" ceremonies in the epic of Manas as in other Turkish epics. Meat is usually served as a food, and a kumis (kımız) is also served as a drink. In some ceremonies, selected horses are slaughtered and sometimes very young horses such as "never ridden foal" are preferred for horse meat. "Orun-üleş" practices as usual in Oğuz clans is not seen in the epic of Manas for serving meat. Besides the horse, camel and sheep meat were also used in the ceremonial meals of the Manas epic. Sometimes it is seen that the excessive consumption of meat and cumis in the epic. It is talk about that to prepared "meat as Aladağ" and "cumis as Alagöl" in the epic. It is mentioned that in the epic Manas learned to make wheat farming and to make bread from the wheat from Dihkam who is the guardian god of the farmers, and that the bread was used in the ceremonies. As a drink cumis were served in the ceremonies. The alcohol level increased cumis with longer time fermentation known as "honey-like sharp" is served in ceremonies.

Keywords: Horse meat, Kumis, Servings, Yuğ, Toy

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress***Determination of Some Quality Characteristics and Yield Levels of Crossbred Chicken Meats****Ümit GÜRBÜZ, Mustafa GARİP, Hatice Ahu KAHRAMAN, Cahit ÖZCAN,
Yusuf BİÇER, Arife Ezgi TELLİ****Abstract:**

Rapid increase in the world population also rapidly increases the demand for food containing protein, which has a very important place in human nutrition. Current world production is also unable to meet this growing demand. Poultry is at the forefront of animal activities, which should be emphasized in order to compensate the animal protein requirement. In this study, 5 different hybrid F1 genotypes were obtained using Leghorn parent breeding chickens. The study was designed with Brahma x Legorn (BxL), Denizli x Legorn (DxL), Aracuana x Leghorn (AxL), Leghorn x Leghorn (LxL) and Cornish x Leghorn (CxL). The genotypes were fed with special designed feeds considering the growing periods. On the 42nd day of feeding, carcass yield was initially determined by taking into consideration cutting hygiene. Dry matter, pH, aw, water-holding capacity, cooking loss and color values (L^* , a^* , b^*) were determined in drumstick and breast parts. There were statistically significant differences in the L^* values, dry matter and pH values in the breast parts and there were statistically significant differences in b^* values in drumsticks of the hybridized broilers

Keywords: Chicken, crossbred, meat, quality, yield

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Microspore Culture Studies on Endemic *Conringia grandiflora* Boiss et Heldr. (Brassicaceae)*

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Abstract:

The endemic *Conringia grandiflora* Boiss et Heldr. carries potential for use as both annual ornamental flower and medicinal plant. The species has not been cultivated and/or bred for in Turkey and in the world so far. The species belongs to Brassicaceae family where a number of species have been shown to be amenable to microspore culture. The purpose of the study was to develop an efficient microspore culture protocol for *C. grandiflora* for use in future breeding studies. Several culture media and pretreatment conditions were tested alone or in combinations. However, healthy embryo with two-cotyledons could not be generated in the study. As for microspore embryogenesis response, the multi-nuclei cells, embryo-like structures and/or abnormal embryos occurred. These responses were mostly obtained using B5 isolation medium with 13% sucrose, pretreatment at 4 °C one day plus 32 °C one day and NLN culture medium with 6% sucrose at 25.000 microspore.ml⁻¹ density. The flower buds at 4-5 mm in length possessed late unicellular to early bicellular microspore stages. This study proved that microspore embryogenesis in *C. grandiflora* might be possible after some modifications of the mentioned culture conditions above.

Keywords: Androgenesis, Brassicaceae, *Conringia grandiflora*, Haploid, Medicinal plant, Microspore embryogenesis, Microspore culture, Ornamental plant

***Acknowledgement:** This study was funded by Akdeniz University, Scientific Research Project # 2012.01.0104.003

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**The Effect of Colchicine Application to Obtain Chromosome Duplication on The Germination of Some Forage Crops Seeds****Mehmet BİLGEN, Zehra DELİBALTA, Alper ADAK***Akdeniz University, Faculty of Agriculture, Field Crops Department, Antalya, Turkey**e-mail: bilgen@akdeniz.edu.tr***Abstract:**

The effect of different concentrations of colchicine on seed germination on some forage crops. Ten different forage crops (*Medicago sativa*, *Trifolium alexandrinum*, *Onobrychis viciifolia*, *Lotus corniculatus*, *Dactylis glomerata*, *Chloris gayana*, *Agropyron Cristatum*, *Agropyron intermedium*, *Phleum pratense* and *Phacelia tanacetifolia*) seeds were treated %0.25 and %0.50 colchicine solutions. Each species was incubated for 2, 4 and 6 hours at different concentrations. The seeds filtered from the colchicine concentration were directly planted in trays. For each species and each application, seeds were planted in 50 pot of tray.. The trays are positioned in the open area and irrigation as needed. The seed germinations that have been observed for 1-3 days according to the speed of seed emergence. In some tray, due to environmental conditions (heavy rain, strong winds, etc.), some violations have occurred. These problems have also been identified and these applications have been left out of the observation. In some species (*Chloris gayana*, *Agropyron intermedium* and *Phleum pratense*), no germination, including control, was observed due to seed viability. According to the results obtained, no significant effect of application of colchicine on the number of germination was observed. However, there was a slight decrease in *Dactylis glomerata* and *Medicago sativa* for 6 hours. It has been observed that root and shoot lengths are not influenced by the application of colchicine and that the resulting differences are caused by other factors.

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Bilateral Microtia (Congenital Aural Atresia) in a Spaniel Mixed Breed Dog and Its Surgical Repair

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Abstract:

The external ear is composed of the auricle (or pinna) and the external auditory canal. Microtia is a broad term that encapsulates various sequences of visually abnormal auricles. Conductive hearing is sacrificed on the affected site for more than 90% of patients with microtia. Various grading systems have been described for microtia, with the most frequently used system being the Marx classification. Microtia is divided into four grades in this classification system. This study was designed to show the results of microtia reconstruction by surgical procedure and report to clinical improvement on conductive hearing. A 3 years old female spaniel mixed dog was referred to the surgery department for conductive hearing loss from the absence of both auricles. AX-ray of the patient's skull showed a radiolucent external ear canal on left side, but not on right side. Soft tissue opacifications were noted on the right side. Bulla tympanicas were determined bilaterally non-radiolucent. Grade III microtia was recognized in the ear canal on the left side, and anotia was classified as grade IV on the right side. Both control ears did not have auricles. Patient underwent auricular reconstructive surgery for microtia on the left side. A single stage-procedure started with fish-mouth incision around the atresic external ear canal followed by the other stages. The canal wall was sutured separately to the skin by 4/0 non-absorbable suture. During every visit, the owner was given a questionnaire concerning their dog's conductive hearing and their degree of satisfaction concerning the surgery.

Keywords: Anotia, Dog, Microtia,

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Investigation of Wet Storage before and after The VaseLife in Solutions Containing Different Concentrations of Sucrose in Cut Flower Freesia****Ömür DÜNDAR, Hatice DEMİRCİOĞLU, Okan ÖZKAYA***Cukurova University, Faculty of Agriculture, Department of Horticulture, Balcalı, Adana, Turkey**e-mail: odundar@cu.edu.tr***Abstract:**

In this study, wet storage before and after the vase life in solutions containing different concentrations of sucrose in two different colored *Freesia sp* cut flower (*Freesia alba* and *Freesia refracta*), were investigated. Flowers were kept in contain biocides solution as wrapped inside the thin paper at $4\pm 1^{\circ}\text{C}$ and 95% relative humidity condition. Freesia flowers were also kept before and after storage for vase life at $20\pm 5^{\circ}\text{C}$, 12 hours of natural light, 60% relative humidity and as control (0%), 1% and containing 2% sucrose and biocide low pH treatments in a vase solution and quality analyzes were made at two-day intervals. The amount of ethylene production of the flower, respiratory rate, solution uptake, fresh weight proportionates, available water content, electrical conductivity, candle opening rate and visual quality were examined. Trial results of this study showed that visual quality criteria maintained for 6 days in the vase solution of freesias in the circumstances described above, however with the extension of harvest date, the vase life of flowers shortened.

Keywords: *Freesia sp.*, Quality, Storage, Vase life

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Functional Characteristics and Utilizations of Whey

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Abstract:

Cheese mostly consisted of fat and protein and contains about 50-60% water. The remaining soluble part called whey, consists of lactose, lactic acid, mineral substances, soluble proteins and a small amount of fat. Whey is one of the important byproducts of dairy technology, which is generally obtained from cheese production. Approximately 45-50% of the milk dry matter passes into whey during cheese manufacturing. The composition and characteristics of whey vary depending on the quality of the milk used for cheese and the type of cheese produced. The whey products besides their high nutritional value have functional properties such as development of the textural characteristics of the foods, consistency enhancement, improving gel formation capacity, emulsion formation, water retention and preventing syneresis. Today, the use of whey products in foods such as bakery products, meat and dairy products, chocolate and confectionery is increasing due to their positive functional effects on textures and sensory properties

Keywords: Whey, Lactoalbumin, Lactoglobulin, Functional Characteristics

Poster presentation/ The Eurasian Agriculture and Nature Sciences Congress**Biodiversity of *Bacillus thuringiensis* Isolates and Insecticidal Cry Protein encoding Genes from Kyrgyzstan****Andreas LECLERQUE¹, Tinatin DOOLOTKELDIEVA², Saykal BOBUSHOVA², Christina SCHUSTER¹**¹*Institute for Microbiology and Biochemistry, Geisenheim University, Germany*²*Department of Plant Protection, Kyrgyz-Turkish Manas University, Bishkek, Kyrgyzstan**e-mail: andreas.leclerque@hs-gm.de***Abstract:**

The Gram-positive bacterium *Bacillus cereus* subsp. *thuringiensis* (currently referred to as "*Bt*") is the economically most important entomopathogen for insect biocontrol. *Bt* kills its host through the action of highly specific, crystal-forming Cry protein toxins and further toxin types. A large number of *cry* genes have been organized into several groups that in part reflect host adaptation. In particular, proteins encoded by *cry1*, *cry3*, and *cry4* genes are generally toxic for Lepidopteran, Coleopteran, and Dipteran insects, respectively.

A set of 13 *Bt* strains isolated from insect and soil samples from different environments in Kyrgyzstan was molecular taxonomically characterized using the *pycA* gene encoding bacterial pyruvate carboxylase as marker for phylogenetic reconstruction. All Kyrgyz isolates were shown to belong to the *B. cereus* subspecies *thuringiensis* and are, therefore, clearly distinct from human pathogenic *B. cereus* subspecies including *B. anthracis*. Among the lineages that further subdivide *Bt*, most isolates from Kyrgyzstan were assigned to *Bt tolworthi*, with two isolates each belonging to the lineages *Bt kurstaki* and *Bt sotto*.

A PCR-based diagnostic approach using *cry1*, *cry3*, and *cry4* gene specific primer pairs revealed pronounced differences in *cry* gene frequencies. Whereas *cry1* and *cry4* genes were regularly detected, *cry3* genes were identified in only a small number of strains investigated. Interestingly, the combination of *cry1* and *cry4* genes in the same strain occurred frequently. The presumed combination of protein toxins of different specificities within a single strain is of high interest with respect to the possible application of these strains for biocontrol purposes.

Keywords: *Bacillus thuringiensis*, *cry* gene diversity, Molecular taxonomy, Pyruvate carboxylase (*pycA*)

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Molecular Taxonomy and Host Group Adaptation of `Candidatus Rickettsiella isopodorum´ , a New Lineage of Intracellular Bacterial Pathogens of Woodlice

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Abstract:

The taxonomic genus *Rickettsiella* (*Gammaproteobacteria*; *Legionellales*) comprises intracellular bacteria associated with a wide range of arthropods including insects, arachnids and crustaceans, among them economically important agricultural pests as scarabaeids and elaterids. *Rickettsiella* bacteria are, therefore, under intensive evaluation as possible sources of new biocontrol agents.

A multilocus sequence analysis approach has been employed to independently evaluate the previously established 16S rRNA based phylogeny for two *Rickettsiella* strains associated with isopods from California and Germany. Phylogenetic reconstruction from three protein-encoding marker genes, namely *ftsY*, *gidA*, and *sucB*, corroborates the earlier introduction of the new candidate species `Candidatus *Rickettsiella isopodorum*` (Kleespies, et al. (2014), *Systematic and Applied Microbiology* 37(5): 351-359) and, moreover, demonstrates the very tight phylogenetic relationship of *Rickettsiella* bacteria from closely related hosts, but distant geographic origins as, e.g., Germany and California. These findings are generally indicative of stable host adaptation and, therefore, challenge the currently adopted view of rather unspecific host-pathogen relationships of *Rickettsiella*-like bacteria. Stability of host adaptation is of obvious interest for the possible use of *Rickettsiella* bacteria for biocontrol of agricultural pests.

Keywords: Host-pathogen relationship, Multilocus Sequence Analysis, `Cand. *Rickettsiella isopodorum*´ , woodlice.

Poster presentation/ The Eurasian Agriculture and Nature Sciences Congress**Erwinia amylovora Bacteriophages in the Biological Control of Fire Blight on Quince****Anna SAMOILOVA***Institute of Genetics, Physiology and Plant Protection, Academy of Sciences of Moldova, Chisinau, Moldova**e-mail: anna.v.samoilova@gmail.com***Abstract:**

Quince (*Cydonia oblonga* Mill) is one of the economically important fruit cultures most sensitive to the fire blight infection. High genomic variability of the fire blight causative agent, the phytopathogenic bacterium *Erwinia amylovora*, and resistance development to antibiotics and chemical preparations significantly complicate the disease management. Bacteriophages, i.e. highly specific bacterial viruses, can be used as an alternative to the currently available fire blight control strategies. The possibility of the application of *E. amylovora* bacteriophages against fire blight was studied on quince plants growing under the natural conditions. Bacteriophages and phytopathogenic bacteria were isolated from infected quince plants tissues, i.e. the system "bacterium-phage" adapted to the chosen host plant was used in the experiments. Treatment of the experimental plants was carried out in four variants: 1) plants without treatment; 2) plants infected with *E. amylovora* only; 3) plants infected with *E. amylovora* and treated by phages; 4) plants infected with *E. amylovora* and treated by copper preparation. Biological effectiveness was calculated using the modified Abbott's formula. Experiments carried out in 2016 have demonstrated that the biological effectiveness of bacteriophages treatment against shoot blight on quince was 72%, whereas the biological effectiveness of copper preparation was 52%. Under natural conditions *E. amylovora* bacteriophages are able to reduce the pathogen population in plants tissues to a level that has no significant inhibitory effect against the plant. This allows considering bacteriophages as a possible tool for fire blight control.

Keywords: Biological control, *Erwinia amylovora* bacteriophages, Fire blight, Quince.

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Genetic Diagnosis of *Erwinia amylovora* Bacteriophages, Potential Tools for Biological Control of Fire Blight Disease

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Abstract:

Fire blight of apple, pear or quince, one of the economically most important diseases of fruit trees, is caused by the bacterial phytopathogen *Erwinia amylovora*. Alternatives to currently available, mostly unspecific fire blight control strategies as, e.g., antibiotics or copper preparations, are highly solicited. Bacteriophages from the virus families Podoviridae (phage group L1), Myoviridae, and Siphoviridae (both M7) that infect and lyse *E. amylovora* bacteria, are under intensive evaluation as potential specific biocontrol agents. M7 and L1 group phages differ considerably in morphology, host range, and efficiency of infection. We report the development of a genetic characterization scheme for *E. amylovora* phages and its use to characterize a set of phage isolates from Moldova. Comparative analysis of published *E. amylovora* phage genome sequences was used to identify the viral terminase large subunit encoding *tls* gene as a potentially suitable marker for phage characterization. A *tls* gene based PCR approach allowed distinguishing positively between L1 and M7 group phages. In congruence with electron microscopic data, M7 group phages were found to strongly prevail among *E. amylovora* bacteriophages from Moldova. We conclude that the genetic characterization of *E. amylovora* associated bacteriophages is a time-, work-, and cost-efficient alternative to electron microscopy. However, the characterization scheme used needs further refinement to improve its reliability and resolution. As M7 group phages are generally more suitable for biocontrol purposes than L1 phages, the result obtained for the bacteriophages from Moldova is promising with respect to fire blight control.

Keywords: Biological Control, *Erwinia amylovora* bacteriophages, Fire Blight, Genetic characterization.

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Determination of Suitable Extraction Method for the Available Iron (Fe) Content of Calcareous Soils

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Abstract:

The aim of this research was to determine the most suitable extraction method for the available iron contents of calcareous soils in Trakya Region, Turkey. For this purpose ten calcareous soil samples were taken from research area and five extraction methods (0.005 M DTPA + 0.01 M CaCl₂ + 0.1 M TEA, 0.05 M HCl + 0.012 M H₂SO₄, 1 M NH₄OAc, 0.005 M DTPA + 1 M NH₄HCO₃ and 0.2 M CH₃COOH + 0.25 M NH₄NO₃ + 0.013 M HNO₃ + 0.015 M NH₄F + 0.001 M EDTA methods) were used and three biological indices (dry matter yield, Fe concentration, Fe uptake) were compared. The plant biological indices were determined with wheat (*Triticum aestivum* L.) plant grown under greenhouse conditions. At the end of the experiment and according the experiment results, the highest correlation coefficients (r) were determined to be between the 0.005 M DTPA + 0.01 M CaCl₂ + 0.1 M TEA, 0.005 M DTPA + 1 M NH₄HCO₃ methods and the biological indices. The correlation coefficients (r) for the 0.005 M DTPA + 0.01 M CaCl₂ + 0.1 M TEA method and the three biological indices were 0.648**, 0.780** and 0.656** respectively. For the 0.005 M DTPA + 1 M NH₄HCO₃ method, these coefficients were determined 0.595**, 0.637** and 0.625**, respectively. Consequently, these extraction methods were suggested for the determination of the available Fe contents of the calcareous soils in Trakya Region, Turkey.

Keywords: Iron, wheat, DTPA, extraction method, calcareous soil.

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Compairing of Geostatistical Interpolation Methods in Predicting of Spatial Variability of Available Phosphorus on the Wheat Field

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Abstract:

Many physical and chemical properties of soils greatly affect the phosphorus (P) availability on the agricultural soils. Hence, a great variability in the available P values occurs on these areas that leads to the environmental pollution and economical losses. Geostatistical interpolation methods will help to the monitoring of spatial variability of soil P on the large agricultural fields. Evaluation of these computer based geostatistical methods for large agricultural areas will improve the decision support on the field management practices in a more healthy and moderate way. For this aim, a study was conducted on the calcareous field soil under the wheat plants located on a flat plain. The soil samples, collected from the study area based on a grid system, were prepared for some chemical analyses. The data were analyzed according to varied interpolation methods of Ordinary Kriging and Simple Kriging. The results have revealed that available soil P distribution faces on the wheat field were adequately predicted by using selected kriging interpolation method with suitable semivariogram model, which had the lowest RMSE value.

Keywords: Geostatistical methods, interpolation, soil available phosphorus, wheat field

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Use of Molecular Markers in Plants for Cultivar Identification****Salih KAFKAS, Hayat TOPÇU, Aibibula PAIZILA, Sina KEFAYATI,
Md Rashedul ISLAM, Mederbek ZHAANBAEV***University of Cukurova, Adana, Turkey**e-mail: meder.jaanbaev.93@mail.ru***Abstract:**

Detection of DNA polymorphism have been one of the most significant issues in the field of plant molecular genetics for several decades. A few types of molecular markers such as RFLP (restriction fragment length polymorphism), RAPD (randomly amplified polymorphic DNA), ISSR (inter-simple sequence repeat), SSR (simple sequence repeat) and SNP (single nucleotide polymorphism) have been developed. Differences in their principles, methodologies, costs and applications require careful consideration in choosing one of them. Cultivar identification by DNA markers is one of the most important issue in plants. Growers buy seeds, plantlets or plants to grow them in their greenhouses or in the orchards. However, it is sometimes necessary to identify whether the plants true to their names. In this step, it is necessary to select one of the most suitable molecular marker techniques. Among tested molecular markers in our laboratory, SSR markers have been found the most suitable marker technique in cultivar identification. Details will be discussed in the symposium.

Keywords: DNA polymorphism, molecular markers, DNA markers, SSR.

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Influence of Waste of Ak-Tyuz Mining and Environmental Plant on Soil Microflora

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Abstract:

Soil is a complex polydisperse system that performs important ecological functions. Practically there is no soil process, in which the microflora would not take part. The soil microflora reacts differently to various changes in the soil and can be used as indicators of the ecological state of soils. We have assessed the impact of the activities of the Ak-Tyuz Mining and Processing Plant (MPP) on the environment through soil microflora. There are 4 tailing dumps of which No. 1 and No. 3 are on the balance sheet of the Ministry of Emergency Situations. Tailing dumps No.2 and No.4 are on the balance sheet of Open Joint Stock Company "Ak-Tyuz". The results of a study of microbiological diversity in the area of the tailings of the Ak-Tyuz MPP showed that heavy metals have an inhibitory effect on the growth and development of the soil microbiota, and noted the predominance of resistant forms of microorganisms in the studied soilsamples. Representatives of the species *Aspergillus* and *Penicillium* were the most resistant species of micromycetes. Among the actinomycetes of the genus *Streptomyces*, the representatives of the *Albus* section and *Cinereus* proved to be stable. Along with the decrease in the species diversity of *Streptomyces* and soil bacteria, the increase in Colony forming units of resistant bacterial species was noted at the site of Tailing dumps No. 2 and No. 4, which also indicates a disturbance of the soil microbalance and is an indicator of a degrading ecosystem.

Keywords: Degrading ecosystem, Ecological functions, Microbiological diversity, Soil microflora.

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Phenotypic characterization of *Pseudomonas syringae* pv. *syringae* van Hall, the causal agent of bacterial canker disease of Stone Fruits in Kyrgyzstan****S Bobushova, A. Djanygulova, T. Doolotkeldieva**

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Abstract:

The climatic conditions of Kyrgyzstan allow the cultivation of various types of stone and pome fruit trees like apricot, plum, cherry, pear, apple and others. In recent years, bacterial canker or blast of stone and pome fruits caused by *Pseudomonas syringae* pv. *Syringae* is widespread in Chy, Issuk-Kul, Talas and Osh regions of country. During August and September 2015-2016 a severe of bacterial canker was observed on young branches and barks in apricot, plum and cherry orchards. Twenty *Pseudomonas syringae* isolates have been detected and prevalence of these bacteria in a phylloplane environment gives an indication of their competence longevity. Phytopathogenic fluorescent *Pseudomonas* strains were identified according to Lelliott et al (1966) devised a determinative scheme, that based on simple laboratory tests. Average growth time of *P. syringae* isolates from apricot, plum and cherry under laboratory conditions was 1.3 h at 28°C, although growth rates were not significantly different within a range of 23-33°C. On the basis of LOPAT (levan production, oxidase test, potato rot, arginine dihydrolase and tobacco hypersensitive reaction) and GATTA's (gelatin liquefaction, aesculin hydrolysis, tyrosinase activity and Na-tartrate utilization) group tests were identified the phenotypic (biochemical and physiological) characteristics. As results have shown all strains have simple nutritional requirements and may utilize many carbon sources such as glucose, succinate, glycerol, fumarate, and pyruvate as well as simple amino acids and small peptides. This broad diet may allow colonization of diverse host plants as well as survival in water including rain, snowmelt, streams and rivers.

Keywords: Bacterial canker disease, *Pseudomonas syringae* pv. *syringae*, stone fruit trees,

Poster presentation/ The Eurasian Agriculture and Nature Sciences Congress

New Isolates of *Metarhizium Anisopliae* from Kyrgyzstan and Their Biological Characteristics

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Abstract:

Metarhizium anisopliae as an entomopathogenic fungus from *Clavicipitaceae* family widely used to control agricultural pests for many years. Until now, this important biological agent remains unknown for Kyrgyzstan and in the present work, for the first time, studies were carried out to isolate local isolates and test them in laboratory conditions for dangerous soil pests. Local 5 isolates (Met lab, Met N, Met 3gal, Met 4gal and Met 5gal) of *M. anisopliae* var. *anisopliae* were originally isolated from dead *Galleria melonella* larvae and soil in Kyrgyzstan. The optimal temperature for these isolates was determined. All strains have showed the best growth at the temperature of 16-30 °C. The best mediums for local isolates were selected: Czapek's medium and Suslo agar for maintain their in laboratory conditions. Almost all strains have showed a strong amyolytic activity. Only 2 strains : Met 5 gal жана Met N have showed proteolytic activity, they were able to hydrolyze of gelatin and casein. 18S rRNA and ITS genes of these strains were analyzed to confirm their phylogenetic affiliation. Solid state fermentation has been used for mass production of *Metarhizium* strains to determine its entomopathogenic activity and physiological requirements to nutrients on waste of food plants (a cotton oilcake, oatmeal, sunflower oilcake and bean oil meal). All strains have thick and intensive growth on cotton oilcake and oatmeal, and mycelium biomass has reached significant numbers. The strain Met 5-gal (isolated from *Galleria mellonella*) has showed increasing entomopathogenic activity within a relatively short time, in 40 days 100% deaths of white grub (*Phyllophaga* spp) by applying 5,5 gram solid mycelium (1x10⁸ conidia/g) per 200 gr soil. At the same time, this strain has showed no activity to larvae of wireworms and Colorado potato beetle in the field conditions. These results suggest that a targeted search for an entomopathogenic fungus is necessary and the creation of highly effective strains collection will be a source of biological agents in the fight against dangerous soil and terrestrial pests.

Keywords: *Metarhizium anisopliae* isolates, entomopathogenic activity, biological control of soil and ground pests.

Poster presentation/ The Eurasian Agriculture and Nature Sciences Congress**New isolates of predatory fungi from Kyrgyzstan and their biological characteristics****Ayperi Muratbekova¹, Tinatin Doolotkeldieva²**^{1,2} *Kyrgyz-Turkish Manas University, Plant Protection Department, Bishkek, Kyrgyzstan,**e-mail: amuratbekova91@gmail.com, tdoolotkeldieva@gmail.com***Abstract:**

Arthrobotrys oligospora Fres. 1852, the first recognized nematode-trapping fungus is the most commonly isolated and by far the most abundant nematode-trapping fungus in the environment. Usually predacious fungus form a mycelium on plant debris and other substrates in the soil, but a part of their food they can receive from the trapped living organism. In Kyrgyzstan, these studies are conducted for the first time with purpose to isolate and select the nematofag predatory fungi for using as biological agents against phytonematodes. To isolate *Arthrobotrys oligospora* from rotting plants, trees and garden composts was not successful. While by using a new approach to isolate this fungus from the potato tubers affected by stalk nematodes *Ditylenchus destructor* has allowed to obtain the growth of *Arthrobotrys oligospora* mycelium on rotting potato tubers. To isolate *Arthrobotrys oligospora* in pure culture a nutrient media was selected from among the cheaper and fully meet physiological needs of this fungus. This medium was corn agar (corn flour-20g, agar-20g, dis.water -1000ml). On this medium, this fungus reproduces by means of 2-celled, pear-shaped conidia, in which the cells are of unequal size with the smaller cell nearer to the attachment point on the conidiophore. Conidiophores were simple with 1-2 septa. The average size of conidia was $27.2 \times 16.1 \mu\text{m}$. For the development of mycelium and the formation of conidia, the optimal pH was in the range of 5.5 -8.5. The optimum growth temperature was between 14 and 25 °C, while at a temperature below 4 °C and above + 30 °C fungus has stopped its growth. When observing the spore formation, the following results were obtained: on the first day the mycelium has develop from conidia; on the second day, traps and hooks were develop on developing mycelia; on the 3rd day nematodes were trapped; on the 4th day fungal mycelia were develop inside the nematodes; on the 5th-6th day, only traces of trapped nematodes were visible. As shown by results, obtained isolates of predatory fungus *Arthrobotrys oligospora* were able to trap in the soil such nematodes as *Ditylenchiis destructor* and *Ditylenchiis dipsas*, as well as *Meloidogyne incognita*, which are widespread in the greenhouses and crops in Kyrgyzstan. These studies are encouraging for a long time to identify new predatory fungi species as bioagents in the fight against nematodes and will continue for father results.

Keywords: *Arthrobotrys oligospora* isolates, predatory activity, biological control of phytonematodes

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Antitrypsin Activity of Some Plant Extracts

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Abstract:

Trypsin, an enzyme from serine protease class, is known to be involved in the destruction of proteins. Excessive activity of trypsin could strongly implicate in various diseases such as acute pancreatitis, inflammation and tumour and balanced activity of trypsin is necessary for different physiological functions. For this purpose, it is needed to develop new trypsin inhibitors from natural sources.

In our study, the inhibitory effects of aqueous extracts prepared from different plants was investigated on tyrpsin enzyme activity which is known to have an important value in health and industrial area in recent years. The results showed that inhibition % values of plant extracts on trypsin were increased with increasing concentration.

Pomegranate was found as the most effective trypsin inhibitor among the plant extracts.

It can be suggested that several plant extracts which shows high trypsin inhibitory activity may be appropriate to be used as trypsin inhibitors and will provide an additional support to drug treatment in the field of health.

Keywords: Trypsin, Inhibitor, Extract

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Spread of Soft Potato Rot Caused by the Bacterium *Pectobacterium Carotovorum* in the Kyrgyz Republic and Control Measures****Aizat Süleyman KYZY***Krgyz Turkish Manas University, Kyrgyzstan**e-mail: aizat.suleimankyzy@gmail.com***Abstract:**

Bacterial soft rot caused by *Pectobacterium* species can lead to serious losses in the potato industry (*Solanum tuberosum* L.), mainly due to decay of tubers in the vault. During vegetation with increased soil moisture affects both aboveground and potato tubers. Fabrics bloom and wither, the leaves twist and turn yellow. But the disease may not manifest itself during the vegetation due to late infection and persist in a latent form prior to storage. During storage, it can destroy up to 50% of the crop due to a temperature rise of 15-18°C and an air humidity of over 90%. To do this, we monitored the spread of the disease in the Republic to identify pathogen species, isolated pure cultures of *Pectobacterium carotovorum* were isolated, complete morphological, physiological and biochemical characteristics of the pathogen were given. The causative agent of soft rot of *Pectobacterium carotovorum* was diagnosed by enzyme immunoassay (ELISA). In laboratory conditions, strains of the genus *Streptomyces* SK-6.6 (*Streptomyces* sp.) In a concentration of 10⁴ cells / ml, 10⁶ cells / ml were tested against the causative agent of soft potato rot. Experiments have shown that biological products from these strains can be promising means for combating the causative agent of soft potato rot. This resource can improve the work on breeding resistance to bacterial soft rot and improve the evaluation work.

Keywords: ELISA, Pathogen. *Pectobacterium carotovorum*

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Microbiological Decomposition of Pesticide in the Soil of Warehouse (Model Experiments)

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Abstract:

At present, the problem of cleaning the environment from resistant xenobiotics is acute. Clones of such compounds and, so-called persistent organic pollutants, are widely used in industry and agriculture. Persistent organic pollutants are organic (carbon-based) compounds that include synthesized substances (eg pesticides and PCBs). Extensive scientific research has shown that POPs are one of the most dangerous contaminants chosen in the entry environment with the help of humans. Pollution of soils, sediments and groundwater with persistent, organic compounds, such as chlorinated aromatic compounds, polycyclic aromatic compounds, heterocyclic and nitroaromatic, a widespread heritage of modern industry. Wherever you are, places where chemicals have been spilled or scattered, a few decades ago, as a rule, these places have the highest concentrations of these contaminants. One of these places is abandoned warehouses, due to the presence of obsolete pesticides. In this regard, much attention is paid to the investigation of the ways of distinguishing various chemicals, bacteria, both in aerobic and anaerobic conditions. Using the mind of microorganisms to degrade xenobiotics allows solving a number of problems associated with the use of chemical pesticides, as well as with the discharge of industrial wastewater. Active "local" cultures of microorganisms adapted to specific abiotic conditions can be used not only for soil and sewage treatment, but also for intensive processing of ecosystem remediation processes in the case of chronic pollution. Isolated from the soil of an abandoned warehouse are bacteria from genera: *Nocardia sp.*, *Pseudomonas sp.*, *Flavobacterium sp.*, *Micrococcus sp.*, *Bacillus sp.* Actively disposed of some organochlorine.

Keywords: Cucumber, Beit Alpha, hybrid, breeding, selection

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**A Traditional Milk Product in Turkish Culture: KURUT****Ümit Gürbüz^{1,2}, Fatih Ramazan İstanbullugil FR¹, Yusuf Biçer Y²**

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Abstract:

Preservation of food by drying is one of the most known and oldest methods. The main purpose of the drying of food: based on the principle of reducing the amount of free water in foodstuffs. Reducing the amount of free water as well as in food it leads to decrease of water activity values. Decreasing water in food considerably prevented the development of saprophytes and pathogenic microorganisms. Therefore, was prepared long shelf life foodstuffs. One of the most important representatives of dried dairy products is kurut. Kurut is also regarded as nutrients containing and can be stored for a long time without spoiling known as "battle food" or "winter food". Kurut is additionally defined in Anatolia as keş, geşk, keşk, çörten, torak, terne, çortan. Kurut is a traditional product ready by the way salting and shaping of the filtered yogurt and then dried under the sun. Kurut is a very rich food has protein and some mineral substances. One of the high protein has products are egg 13% protein in which is an important protein source, 20% protein in meat and fish, kurut is contain 52.35% of protein. As a result kurut has been included in Turkish Food Codex in concentrated fermented and traditional milk products.

Keywords: Kurut, Milk, Quality, Traditional Food

Poster presentation/ *The Eurasian Agriculture and Naturel Sciences Congress*

Identification and Use Biofungicide Against Common Fungal Diseases in the Greenhouse of Kyrgyzstan

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Abstract:

Fungus such as *Fusarium oxysporium*, *Verticillium arboatum*, *Rhizoctonia solani*, *Alternaria concatenata*, and *Colletotrichum graminicola* causes wilt, rot and large economic losses in Kyrgyzstan. The purpose of this work is the creation of a biofungicide against common pathogens of cucumbers grown in greenhouses. To achieve this purpose. *F. oxysporium*, *V.arboatum*, *R.solani*, *A.concatenata*, *C. Graminicola* isolates, Pr-3 *Streptomyces bambergiensis* *Chroumofenes*, C1-4 *Streptomyces sp.* strains and *Trichoderma ignorium* biofungicide were used by methods of processing seeds and plants, introducing into the soil and spraying plants. There was no great efficiency after seed treatment. Introduction into the soil and spraying of the biofungicide showed a different result depending on the pathogen. The strain Pch-3 and *Trichoderma ignorium* showed antagonistic activity for *Fusarium oxysporium* up to 75%, strain rch-3 for *Verticillium arboatum* up to 60%, for *Colletotrichum graminicola* up to 45%. Antagonistic activity for *Rhizoctonia solani* and *Alternaria concatenata* Strain c1-4 showed 70%. As a result: methods of processing plants and introducing biofungicide into the soil are an alternative to the rest of the methods, since it showed good effectiveness against cucumber pathogens in greenhouses.

Keywords: Biofungicide, Greenhouse, Kyrgyzstan,

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress**Bacterial Canker of Fruit Stone and The Use of Biological Methods of Protection****Maksatay AVAZOVA, Tinatin DOOLOTKELDİEVA, Makhabat KONURBAEVA, Saykal BOBUSHEVA**

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Abstract:

Bacterial cancer of fruit trees caused by the bacterium *Pseudomonas syringae* pv. *syringae* is one of the most dangerous diseases. There are about 50 pathovars - strains capable of infecting various plant species. The disease develops in two forms - transient and chronic. In recent years, in the conditions of Kyrgyzstan, there has been a tendency for bacterial cancers to *P. syringae* in plantations of fruit, especially stone fruit. Apricot in Kyrgyzstan grows most in the Chui Valley, in the south of the Issyk-Kul Basin, but the Batken Oblast is known and famous for the richest and most significant crops. To study the real situation, a bacterial cancer of stone fruit was monitored, namely apricot plantations. Surveys were conducted by us on the territory of Chui and Issyk-Kul Oblast. In the Chui region, the expedition covered the villages of Vorontsovka, Kokzhar, the neighborhood of Bishkek, and also Ak-Beshim, where wild species of apricots grow. In the Issyk-Kul region, Balykchy, Bokonbaevo village, Tosor, Zharkynbaevo, Khajisai and Zhargylchak. The degree of damage was assessed on a 5-point scale, lesions were about 2 points, individual trees that were not conducted, agrotechnical measures were estimated at 5 points. Ulcers and cracks on the bark reached up to one and a half meters. It is interesting to note that in the plantations of wild apricots the degree of defeat did not exceed 1 point. After a series of screening tests with the bacterium *P. syringae*, it was decided to test in the laboratory conditions, infection of young 2-year-old tree seedlings.

Keywords: Bacterial canker, Biological control, Fruit Stone

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Investigation of Vase Life of The Iris Cut Flower in Vase Containing Sucrose Solution

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Abstract:

Iris (*Iris germica*) flower vase life that was containing sucrose solution was investigated in this research. Flowers were harvested in the bud stage and waited at $20\pm 5^{\circ}\text{C}$, 12 hours of natural light, 60% RH, and containing low pH biocide solution including 1% sucrose solution. Quality analyses were done 2 days intervals. The amount of ethylene production of the flower, respiratory rate, solution uptake, fresh weight proportionate, available water content, electrical conductivity, bud opening rate and visual quality were examined. The buds of the Iris were opened within two days after harvest and flower senescence of petals under mentioned conditions were started after 3 days. The results of this study showed that Iris flower that were harvested at bud stage can maintain the overall quality within 3 days of vase life.

Keywords: Biofungicide, Greenhouse, Kyrgyzstan,

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress
The Importance of N-Cytoplasm in Onion (*Allium Cepa* L.) Hybrid Breeding

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Abstract:

Onion (*Allium cepa* L.) has the great economic importance and belongs to genus *Allium* which is the only significant genus in the Alliaceae family. Onion populations were maintained by open pollination throughout the history. Because of the flower structure, hybrid onion breeding studies based on the cytoplasmic-genic male sterility system. It is important to reduce the time and effort therefore the N-cytoplasmic, maintainer and sterile lines should be determined firstly in onion hybrid breeding studies. However, today with the pre-detection of genetic-cytoplasmic male sterile plants made easy and economical to develop of onion hybrid varieties. This article aimed to evaluate the studies made in the Turkey and the world about this subject.

Keywords: Onion, breeding, male sterility, N-cytoplasm

Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Evaluation of dietary fiber values of milk jam made from different fruits*

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Abstract:

Dietary fiber is a food ingredient that is essential for health, which can not be digested in the small intestine, but fermentable in the large intestine. The dietary fiber is divided into 2 groups as soluble and insoluble dietary fiber. Some gums (gum Arabic, guar gum), pectin, β -glucan, and inulin can be an example of soluble fiber. Examples of insoluble dietary fiber are some components of the structure of cell walls, such as cellulose, hemicellulose, and lignin. Milk jam, a sweetened condensed milk, is often consumed in some Latin American countries such as Argentina, Uruguay, Brazil and Mexico. The popularity of milk jam in Turkey has increased in recent years. This study investigated the effect of addition of different dried fruit (apricot, fig and white mulberry) on dietary fiber values of milk jam. The highest dietary fiber values were detected in the milk jam with dried fig. The utilization of dried fruit in milk jam production has significantly increased the dietary values of milk jam.

Keywords: milk jam, different fruits, dietary fiber, dulce de leche

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Poster presentation/ The Eurasian Agriculture and Naturel Sciences Congress

Determination of the Effects of Plant Growth Promoting Rhizobacteria in Some Standard and Hybrid Tomato Cultivars (*Solanum lycopersicum* L.)*

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Abstract:

This study aimed to determine effect of certain rhizobacteria (PGPR) to some standard and hybrid tomato cultivars. Three hybrid (Maysaloun, Platinum and Interland) and 3 standard (Falkon, Çanakkale and Marmande) tomato cultivars were used in the study. Eight bacteria strains tested in previous studies were used as bacterial inoculum source. The tomato seeds were sown to 2:1 sterile peat:perlite mix in a growth chamber conditions with a temperature of 25±2 °C and 16/8 light/dark light periods, according to the completely randomized plot design with three replications. The study was repeated twice. Seedling growth traits such as germination rate and expedition, cotyledon width and length, number of leaf, shoot and root lengths, shoot diameter, shoot and root fresh weights shoot and root dry weights, dry matter rate of shoot and root were evaluated. The results of the study were evaluated on the basis of weighted-rankit method. While Interland F1 was cultivar which had the highest point, Marmande showed the lowest score (respectively 206.45 and 160.17 points). Among PGPR, CA41/1 isolate (*Bacillus thuringiensis*) had the highest score with 195.50 point and CA28/1 (*Pseudomonas punonensis*) the lowest (168.59 point)

Keywords: PGPR, Seedling growth, *Solanum lycopersicum* L., Tomato

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