

**MINISTERUL EDUCAȚIEI NAȚIONALE ȘI CERCETĂRII
ȘTIINȚIFICE
AUTORITATEA NAȚIONALĂ PENTRU CERCETARE
ȘTIINȚIFICĂ ȘI INOVARE**

**UNIVERSITATEA DE ȘTIINȚE AGRICOLE ȘI MEDICINĂ VETERINARĂ
„ION IONESCU DE LA BRAD” DIN IAȘI**

FACULTATEA DE HORTICULTURĂ



**CONGRESUL ȘTIINȚIFIC INTERNAȚIONAL
„ȘTIINȚELE VIEȚII - O PROVOCARE PENTRU VIITOR”**



PROGRAM

**SECȚIUNEA
HORTICULTURĂ ȘI INGINERIA MEDIULUI**

**20-22 OCTOMBRIE 2016
IAȘI**

**MINISTRY OF NATIONAL EDUCATION AND
SCIENTIFIC RESEARCH
NATIONAL AUTHORITY FOR SCIENTIFIC RESEARCH AND
INNOVATION**

**UNIVERSITY OF AGRICULTURAL SCIENCES AND VETERINARY
MEDICINE "ION IONESCU DE LA BRAD" FROM IAȘI**

FACULTY OF HORTICULTURE



**INTERNATIONAL SCIENTIFIC CONGRESS
"LIFE SCIENCES – A CHALLENGE TO THE FUTURE"**



PROGRAMME

**SECTION
HORTICULTURE AND ENVIRONMENT ENGINEERING**

**20-22 OCTOBER 2016
IAȘI, ROMANIA**

SPONSORI

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PROGRAMUL CONGRESULUI

• JOI, 20 OCTOMBRIE 2016

AULA MAGNA „HARALAMB VASILIU”

08³⁰ - 10⁰⁰ - Primirea și înregistrarea participanților

10⁰⁰ - 10³⁰ - Deschiderea festivă a congresului și cuvântul invitaților

10³⁰ - 12⁰⁰ - Lucrări în plen:

- **Honermeier Bernd**, **Shafiee-Hajiabad Marzieh**, **Ali Sajid**, **Yan Feng** (Justus Liebig University Giessen, Germany; University Lahore, Pakistan) - *Impact of agronomy management and climate factors on secondary metabolites in medicinal and aromatic plants*

- **Amalfitano Carmine**¹, **Gomez D. Leonardo**², **Sellitto Michele**³, **Stoleru Vasile**⁴, **Caruso Gianluca**¹ (¹Department of Agricultural Sciences, University of Naples Federico II, Italy; ²Center for Novel Agricultural Products, University of York, United Kingdom; ³Microspore Ltd, Larino, Termoli, Italy; ⁴University of Agricultural Sciences and Veterinary Medicine of Iași, Romania) – *The legumes in food and horticultural systems. The case study of faba bean (Vicia faba L.): yield, quality and energetic aspects as affected by farming practices*

- **Piasentier Edi** (Department of Agricultural, Food, Environmental and Animal Sciences, University of Udine, Italy) - *Characteristics of pork and dry cured ham from different genotypes of Italian heavy pig*

- **Răileanu Cristian**¹, **Eloit Marc**^{3,4}, **Vayssier-Taussat Muriel**², **Savuța Gheorghe**^{1*} (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; ²INRA, France; ³PathoQuest SAS, Paris, France; ⁴Institute Pasteur, Paris, France) - *Epidemiological and etiological research regarding emerging vector-borne infections in Eastern Romania*

12⁰⁰ - 12¹⁰ - Pauză de cafea

12¹⁰ - 13³⁰ - **FESTIVITATEA DE ANIVERSARE A 65 DE ANI DE LA ÎNFIINȚAREA FACULTĂȚII DE HORTICULTURĂ DIN IAȘI**

- *Omagierea acad. Valeriu D. COTEA și prof. univ. dr. Gică GRĂDINARIU*

13³⁰ - 15⁰⁰ - Pauză de masă

15⁰⁰ - 19³⁰ - Prezentarea lucrărilor pe secțiuni

19³⁰ - 23⁰⁰ - Masă festivă în onoarea invitaților la restaurantul „LA CASTEL”

• VINERI, 21 OCTOMBRIE 2016

9⁰⁰ - 12³⁰ - Prezentarea posterelor pe secțiuni și discuții

12³⁰ - 13⁰⁰ - Concluzii. Închiderea lucrărilor simpozionului

13⁰⁰ - 15⁰⁰ - Pauză pentru masă

15⁰⁰ - 18⁰⁰ - Vizitarea orașului (opțional)

• SÂMBĂȚĂ, 22 OCTOMBRIE 2016

9⁰⁰ - 12⁰⁰ - Vizită în câmpurile și laboratoarele de cercetare ale facultății

CONGRESS PROGRAMME

- THURSDAY, OCTOBER 20TH, 2016

AULA MAGNA “HARALAMB VASILIU”

08³⁰ – 10⁰⁰ - Registration of participants and guests

10⁰⁰ – 10³⁰ - Opening ceremony

10³⁰ – 12⁰⁰ - Papers:

- **Honermeier Bernd**, **Shafiee-Hajiabad Marzieh**, **Ali Sajid**, **Yan Feng** (Justus Liebig University Giessen, Germany; University Lahore, Pakistan) - *Impact of agronomy management and climate factors on secondary metabolites in medicinal and aromatic plants*

- **Amalfitano Carmine**¹, **Gomez D. Leonardo**², **Sellitto Michele**³, **Stoleru Vasile**⁴, **Caruso Gianluca**¹ (¹Department of Agricultural Sciences, University of Naples Federico II, Italy; ²Center for Novel Agricultural Products, University of York, United Kingdom; ³Microspore Ltd, Larino, Termoli, Italy; ⁴University of Agricultural Sciences and Veterinary Medicine of Iași, Romania) – *The legumes in food and horticultural systems. The case study of faba bean (*Vicia faba* L.): yield, quality and energetic aspects as affected by farming practices*

- **Piasentier Edi** (Department of Agricultural, Food, Environmental and Animal Sciences, University of Udine, Italy) - *Characteristics of pork and dry cured ham from different genotypes of italian heavy pig*

- **Răileanu Cristian**¹, **Eloit Marc**^{3,4}, **Vayssier-Taussat Muriel**², **Savuța Gheorghe**^{1*} (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; ²INRA, France; ³PathoQuest SAS, Paris, France; ⁴Institut Pasteur, Paris, France) - *Epidemiological and etiological research regarding emerging vector-borne infections in Eastern Romania*

12⁰⁰ – 12¹⁰ - Coffee break

12¹⁰ – 13³⁰ - **CELEBRATION FESTIVITY WITH OCCASION OF 65 YEARS FROM ESTABLISHMENT OF FACULTY OF HORTICULTURE FROM IAȘI**
- *Tribute to Acad. Valeriu D. COTEA and Prof. PhD. Gică GRĂDINARIU*

13³⁰ - 15⁰⁰ - Lunch break

15⁰⁰ – 19³⁰ - Paper sessions

19³⁰ – 23⁰⁰ - Gala Dinner - “LA CASTEL” restaurant

- FRIDAY, OCTOBER 21ST, 2016

9⁰⁰ – 12³⁰ – Poster sessions and discussions

12³⁰ – 13⁰⁰ – Final conclusions. Closing ceremony of the Symposium

13⁰⁰ – 15⁰⁰ - Lunch break

15⁰⁰ – 18⁰⁰ - City tour (optional)

- SATURDAY, OCTOBER 22ND, 2016

9⁰⁰ – 12⁰⁰ - Visit to the faculty research laboratories

1st SECTION

***FUNDAMENTAL RESEARCH IN AGRICULTURE AND
HORTICULTURE***

Vegetable Growing Lab., Second floor

Chairmen:

Prof. dr. Carmen Doina **Jităreanu**
Conf. dr. Lucia Carmen **TRINCĂ**
Conf. dr. **Mihail MELENCIUC**

Secretariate:

Asist. dr. Ana **CAZACU**
Asist. dr. Emilian **BULGARIU**



ORAL PRESENTATIONS

Tomîța Daniela Ivona¹, Vasiliu Mihaela Păpușă¹, Sachelarie Liliana¹, Mihalache Cristian¹, Fuiuagă Codrin Paul¹, Popovici Diana², Stadoleanu Carmen¹ (¹„Apollonia“ University, Faculty of Dental Medicine, Iași, România, ²UMF „Gr. T. Popa, Iași, România)

**FRUIT AND VEGETABLE IMPACT ON ORAL HEALTH IN YOUNG ADULTS
IMPACTUL CONSUMULUI DE FRUCTE ȘI LEGUME ASUPRA SĂNĂTĂȚII ORALE LA ADULTUL TÂNĂR**

Frequent consumption of fruit and vegetables has a significant effect both on overall health and oral health status. Young people and adults should respect the principles of good eating habits that will ensure a long-term oral health. There are numerous studies that attest to the decisive importance of daily consumption of fruits and vegetables. They represent the largest deposits of nutrients that nature makes available, in terms of content in dietary fiber, so in cellulose form a basic component of human consumption, the rest being represented by carbohydrates, proteins, lipids, water, vitamins and mineral salts. Fruits and vegetables provide a significant contribution of fiber and antioxidants, essential nutrients that help the body fight heart disease, obesity, various cancers, disorders of the immune system and not least of dental caries and periodontal disease. A number of fruit (apples like) during chewing removes food debris and dental plaque, saliva stimulating and helping to maintain a normal pH. Fruit is a natural food and is most beneficial way of food. Any fruit that is high in vitamin C, helps maintain. Fruits are healthy in their natural state the preserved parts bring high added sugar in the mouth, favoring the production of cavities. Our study, conducted on a sample of 55 patients, aged between 20 and 35 years, highlights the fact that a relatively small number of patients (29%) ate fruits and vegetables daily.

Vasiliu Mihaela Păpușă, Tomîța Daniela Ivona, Sachelarie Liliana, Shardi Ardeshir Manahedji, Covalciuc Ecaterina, Fuiuagă Codrin Paul, Stadoleanu Carmen („Apollonia“ University, Faculty of Dental Medicine, Iași, România)

**PROPER NUTRITION COMPONENT OF PREVENTION MEASURES ORODENTAL
ALIMENTAȚIA CORECTĂ COMPONENTĂ A MĂSURILOR DE PROFILAXIE ORO-DENTARĂ**

There is a close relationship between nutrition and Orodental health because the foods they consume population, not only have an effect on overall health, but also on oral health. According to WHO, oral health is the absence of dental diseases and chronic facial pain, oropharyngeal cancer, inflammation oral, birth defects (cleft lip, cleft palate like), gum disease, tooth decay and tooth loss, and other diseases that affect the oral. Consummate come into contact with food and periodontal bacteria in the mouth and in the absence of brushing your teeth plaque accumulates. A rich diet in vitamins and minerals represented by fruit or vegetables can prevent gingivitis. For our study we used a series of questionnaires on a sample of 47 patients, aged 25-54 years, in order to relieve daily food intake, the proportion of food with beneficial effect on oro-dental health, and assess the state of oral hygiene.

Slonovschi Andrei, Prună Liviu ("Gheorghe Asachi", Technical University of Iași, Romania)
DETERMINING THE INTERSECTION LINE OF TWO PLANES BY THE COMPUTER HELP
DETERMINAREA DREPTEI DE INTERSECȚIE A DOUĂ PLANE CU AJUTORUL CALCULATORULUI

In study of the descriptive geometry, from the point of view of understanding and assimilation by students, the issue of determining the intersection line of two planes, always was found to be difficult. Starting from this, the authors present a strategy, elaborated by themselves, and an original computer program, which gives to the students the possibility to easily understand the way in which the planes that intersect can be represented in draught or in space, and, also the way of determining the intersection line of the two planes

Melenciu Mihail, Brînză Lilia, Leahu Igor, Ștefiriță Anastasia (Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chișinău, Republic of Moldova)

PHYSIOLOGICAL EFFECTS OF THIOUREA ON BIOLOGICAL PERFORMANCE OF PLANTS IN DROUGHT CONDITIONS: I. INCREASE OF ANTIOXIDANT PROTECTION
EFECTUL FIZIOLOGIC AL TIOUREEI ASUPRA PERFORMANȚELOR BIOLOGICE A PLANTELOR ÎN CONDIȚII DE SECETĂ: I. MAJORAREA PROTECȚIEI ANTIOXIDANTE

The greenhouse experiments were conducted to evaluate the effect of grain presoaking and foliar application of cytokinin (CK), thiourea (TU) and combination (TU+C) - thiourea with Composite preparation (pat. MD 813) containing micronutrient, on the changes of antioxidant enzymes activities, photosynthesis and grain yield of maize plants under normal water content and drought stress conditions. Treated with TU and TU+C plants resulted in great increases in the activity of SOD, CAT, APX, GR. The higher antioxidant enzyme activity in pre-treated plants was associated with the lesser MDA. Positive physiological effects of TU and TU+C were confirmed by the higher level of assimilating pigments and photosynthesis. Concentration of carotenoids was affected by drought, but spraying with TU and TU+C alleviated drought effects. It was concluded that combined application of TU+C as seed treatment and foliar spray was more effective than cytokinin in improving the Zea mays performance.

Melenciu Mihail, Brînză Lilia (Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chișinău, Republic of Moldova)

INVOLVEMENT OF SALICYLIC ACID DERIVATIVES IN PLANT WATER POTENTIAL ADJUSTMENT UNDER CONDITIONS OF INSUFFICIENT MOISTURE
ANTRENAREA DERIVAȚILOR ACIDULUI SALICILIC ÎN REGLAREA POTENȚIALULUI APEI PLANTELOR ÎN CONDIȚII DE INSUFICIENȚĂ DE UMIDITATE

The greenhouse experiments were conducted to evaluate the effect of salicylic acid and salicylate NH_4^+ , K^+ , Mg^{++} on the possibility of adjusting the water status of the Zea mays, L. and Sorghum bicolor L. Moench plants in the drought conditions. It has been shown that drought causes significant changes in the stomatal conductance, intensity of transpiration, coupled with the change in the value of water potential (Ψ_w) and the hydrostatic pressure (Ψ_p) of the plants leaves of both species. Salicylic acid and salicylates NH_4^+ , K^+ , Mg^{++} have the property of the plant water haemostatis by increasing the degree of hydration of the tissue, reducing the water deficits, increased turgidity organs and retention of water, adjusting the hydraulic and stomatal conductivity, thus ensuring the maintenance of a higher level Ψ_w in both favourable and at moderate deficiency moisture conditions.

Rotaru Vladimir, Budac Alexandru (Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chișinău, Republic of Moldova)

COMBINED EFFECTS OF PHOSPHORUS FERTILIZATION AND SOIL WATER DEFICIT ON LEAF DEVELOPMENT AND AMINO ACIDS CONCENTRATIONS IN TWO SOYBEAN (GLYCINE MAX L MERR) CULTIVARS
ACȚIUNEA COMBINATĂ A FERTILIZĂRII CU FOSFOR ȘI DEFICITULUI DE UMIDITATE ASUPRA DEZVOLTĂRII FRUNZELOR ȘI A CONȚINUTULUI DE AMINOACIZI LA DOUĂ CULTIVARE DE SOIA (GLYCINE MAX L MERR)

A pot experiment was conducted to evaluate the effect of P application on leaf development, chlorophyll content (SPAD values) and amino acids concentrations of two soybean cultivars submitted to a mild water deficit (35% WHC) at the pre-flowering stage for 12 days. P application hardly changed dry matter accumulation and leaf area of well-watered plants but significantly increased these parameters in water-deficit conditions of the soil. Plant performance of cv Licurici was better than Zodiac under P insufficiency (P0) supply. Biomass production of leaves of both soybean cultivars was significantly reduced when the soil moisture content was decreased from 70% WHC to 35% WHC. P fertilization also improved SPAD values of leaves under drought conditions but there was no significant differences in chlorophyll content between the two cultivars under phosphorus-insufficient and phosphorus sufficient supply. The P application (100 mg/kg soil) remarkably increased nodule weight but decreased amino acids concentrations in water-stressed plants.

Çolak Ayşen Melda¹, Okatan Volkan¹, Güçlü Sultan Filiz², Korkmaz Nazan³, Polat Mehmet² (¹Uşak University, Uşak, Turkey, ²Süleyman Demirel University, Isparta, Turkey, ³Muğla Sıtkı Koçman University, Muğla, Turkey)

CHEMICAL CHARACTERISTICS AND ANTIOXIDANT ACTIVITIES OF FOUR NATIVE GOJI (*LYCIUM BARBARUM* L.) GENOTYPES
PROPRIETĂȚILE CHIMICE ȘI ACTIVITATEA ANTIOXIDANTĂ A PATRU GENOTIPURI LOCALE DE GOJI (*LYCIUM BARBARUM* L.)

*Since the beginning of the 21st century, goji berries have become increasingly popular in Turkey and Europa and have been promoted in advertisements and in the media as an anti-aging remedy. In this study, chemical properties (total soluble solid contents, pH, titratable acidity, vitamin C, antioxidant activity and total phenolic) of goji (*Lycium barbarum*) fruits grown in the Denizli province of Turkey were investigated. The total soluble solids content of goji varied between 15.20% (G1) and 19.80% (G3), titratable acidity between 0.9% (G1) and 1.5% (G4), pH between 3.25 (G2) and 4.36 (G3), respectively. Ascorbic acid (vitamin C) was in the range from 18.26 (G4) to 32.18 (G2) mg/100 g fresh weight (FW). The highest total phenolic contents were found 62.3 (G2) to 85.6 (G4) mg of gallic acid equivalent (GAE) 100 g-1 fresh weight. Antioxidant capacity (DPPH) was in the range from 32.28 (G1) to 87.48 (G3)%.*

Okatan Volkan¹, Güçlü Sultan Filiz², Çolak Ayşen Melda¹, Korkmaz Nazan³, Aşkin Mehmet Atilla² (¹Uşak University, Uşak, Turkey, ²Süleyman Demirel University, Isparta, Turkey, ³Muğla Sıtkı Koçman University, Muğla, Turkey)

SOME PHYSICO-CHEMICAL CHARACTERISTICS OF CURRANT GENOTYPES FROM TURKEY
CÂTEVA PROPRIETĂȚI FIZICO-CHIMICE ALE GENOTIPURILOR DE COACĂZE DIN TURCIA

*Currants (*Ribes spp.*) are cultivated and applied as raw materials in food, cosmetics and medicines in Europe and Asia. Total anthocyanin, vitamin C and phenolic compounds are important components contributing to the nutritional value and sensory properties of berries. In this study, physico-chemical properties (vitamin C, antioxidant activity, total phenolic and total anthocyanins) of currant fruits grown in the Bursa province of Turkey were investigated. The highest total phenolic contents were found 18.22 to 6.43. Antioxidant capacity (DPPH) was in the range from 56.43 to 5.24% and total anthocyanin content between 318.87 and 71.26 mg/100 g.*

Ciobanu Valeriu¹, Teliban Gabriel Ciprian², Stoleru Vasile², Stan Teodor², Munteanu Neculai² (¹Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chişinău, Republic of Moldova, ²University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)

RESEARCH REGARDING THE DEVELOPMENT OF A NEW TOMATOES CULTIVAR BY INDIVIDUAL SELECTION METHOD
REZULTATE EXPERIMENTALE ÎN OBTINEREA UNUI NOU SOI DE TOMATE PRIN SELECȚIE INDIVIDUALĂ

Following scientific research was obtained a new population of tomatoes with orange fruit, early growth for cultivation in open field. Period of semi-tardive vegetation-120 days with medium resistance to the physiological and immunological characteristics of the main agents of the diseases that are caused by: mycosis *Phytophthora infestans*, *Alternaria incognita*, *Xanthomonas vesicatoria* and micoplasmosis or *Stolbur solonocaeae*. Regarding the fresh mass of fruits, better results were obtained in the case of the new population 190-210 g compared to Slava Moldaviei and Luci (120-130 g respectively 90-110 g). Also, dry substance and carotenoid content were higher in new tomatoes population. Therefore we recommend the new tomatoes population for homologation.



POSTER PRESENTATIONS

Trincă Lucia Carmen¹, Mareci Daniel², Mărculescu Afrodita, Ariton Mirela³, Arotăritei Dragoș, Tucaliuc Roxana¹, Trofin Alina¹, Călin Marius¹ (¹University of Agricultural Sciences and Veterinary Medicine of Iași, ²Gh. Asachi³ Technical University of Iași, ³Development and Research Station for Cattle Dancu Iași, Romania)

PREDICTION OF MOISTURE CONTENT BY USING NEURAL NETWORKS BASED ON CHEMICAL AND IMAGISTIC ANALYSIS IN *CAPSICUM ANNUUM*, GROSSUM GROUP (RED RUFFLED PIMIENTO) DURING STORAGE

PREDICȚIA VARIAȚIEI UMIDITĂȚII PRIN UTILIZAREA REȚELELOR NEURONALE PENTRU ANALIZA CHIMICĂ ȘI IMAGISTICĂ LA GOGOȘARI (*RED RUFFLED PIMIENTO*) PE PERIOADA DE DEPOZITARE

This paper presents an evaluation of loss moisture content and moisture content in Red Ruffled Pimiento peppers. The rate of the food's deterioration can be associated with moisture content (MC) while loss moisture content (LMC) provides information on metabolism's rate in the post harvesting products, being connected with the layout change or with the variation of the biochemical composition of the dried products. Red Ruffled Pimiento pepper's weight loss explains LMC increasing and MC decreasing. The recorded disproportional differences highlight the intrinsic relationships between perspiration and respiration rate that affects loss of water and moisture content in sweet pepper. The main algorithm of the present research has used heuristically selected descriptors of texture for monitoring the evolution of wrinkles as measure of water contents by LMC and MC determination of Red Ruffled Pimiento peppers. The performance of neural network multilayer predictor was good ($R^2 > 0.9141$) if consider the registered dispersion of the input variables. The development of this non-destructive method for the assessment of MC and LMC, and of other chemical parameters, can be useful for online monitoring quality of vegetables

Trofin Alina, Ungureanu Elena, Trincă Lucia Carmen, Sandu Tatiana (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

STUDY ON WOOD WASTE MATERIALS' CAPACITY TO RETAIN HEAVY METAL IONS FROM AQUEOUS SOLUTIONS, UNDER DYNAMIC CONDITIONS

STUDIUL ASUPRA CAPACITĂȚII DEȘEURILOR LEMNOASE DE A REȚINE IONII METALELOR GRELE DIN SOLUȚII APOASE, ÎN CONDIȚII DINAMICE

Wood residues are commonly used in the furniture industry and in agriculture, as composts' ingredients or in different techniques as absorbents, having a large specific surface and a chemical composition appropriate for achieving adsorption processes. As a result of previous experiments it is found that the activation by boiling in acidic solutions of sawdust, in addition to increasing the adsorption capacity, it does not add any color to the treated solutions. In the present study we tested the retention capacity of two heavy metal ions (Cu and Co) in solutions of different concentrations, on sawdust processed by grinding, sieving and activation in hydrochloric acid. As main results, copper ions were retained between 63.2 – 91.16% and cobalt ions, between 79.9 – 91.16%, considering the initial concentrations of the solutions.

Tucaliuc Roxana Angela¹, Niculaua Marius², Luchian Camelia Elena¹, Mangalagiu I. Ionel³, Trincă Lucia Carmen¹, Cotea V. Valeriu¹ (¹University of Agricultural Sciences and Veterinary Medicine of Iași, ²Oenology Research Center – Iași Branch of the Romanian Academy, ³„Al.I.Cuza” University of Iași, Romania)

THE EVOLUTION OF THE MAIN PHYSICO-CHEMICAL PARAMETERS IN FETEASCA NEAGRA WINE AFTER TREATMENT THE WINE WITH AZAHETEROCYCLES COMPOUNDS

EVOLUȚIA PRINCIPALILOR PARAMETRII FIZICO-CHIMICI DIN VINUL DE FETEASCĂ NEAGRĂ ÎN URMA TRATĂRII VINULUI CU COMPUȘI CU STRUCTURĂ AZAHETEROCICLICĂ

The present study describes the evolution of the main physico-chemical parameters from Fetească neagră wine after treatment with azaheterocycles compounds. The physical and chemical analysis emphasizes the wine peculiarities. In our work were analyzed: free SO₂ and total SO₂, volatile acidity, total acidity, density, alcoholic concentration, remanent sugars and pH. For each parameter the study was performed according to the methods and regulations of the International Organization of Vine and Wine (OIV).

Stratu Anișoara, Onea Iuliana, Costică Naela („Al.I.Cuza” University of Iași, Romania)

THE INFLUENCE OF COPPER ON SOME PHYSIOLOGICAL AND MORPHOLOGICAL INDICATORS OF *IMPATIENS BALSAMINA* L.

INFLUENȚA CUPRULUI ASUPRA UNOR INDICATORI MORFOLOGICI ȘI FIZIOLOGICI LA *IMPATIENS BALSAMINA* L.

This paper presents the results of a study regarding the influence of treatment with copper in different concentrations (10mg/l, 20mg/l, 40mg/l, 60mg/l, 100mg/l and 150mg/l) on some physiological and morphological

indicators of *Impatiens balsamina* species. The following indicators were analyzed: the percentage of germinated seeds, the mean time of germination, length of the root and of the hypocotyl, the tolerance index. The following effects were found: the pronounced reduction of the germination percentage and the increase of the germination mean time in high concentration; the delay of the growth in length of the root and the hypocotyl; the decrease of the tolerance index. The root was more affected than the hypocotyl.

Bologa (Covașă) Mihaela, Jităreanu Carmen Doina, Slabu Cristina, Marta Alina Elena (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE INFLUENCE OF SALT STRESS ON STOMATAL CONDUCTANCE OF SOME TOMATO LOCAL CULTIVARS FROM N-E ROMANIA
INFLUENȚA STRESULUI SALIN ASUPRA CONDUCTANȚEI STOMATICE LA UNELE POPULAȚII LOCALE DE TOMATE DIN NORD-ESTUL ROMÂNIEI

The stomata are some of the most interesting structures of plants. They control transpiration and absorption of carbon dioxide, but also react both to light and to the internal water balance of plants. The research was conducted under greenhouse condition. The biological material was represented by six local tomatoes populations collected from areas with saline soils from Moldavia region and compared with commercial type salt-tolerant tomato. Tomato genotypes in the study were subjected to salt stress for a period of 30 days is constantly wetted with saline solution to a concentration of 100 mM and 200 mM. The stomatal conductance was determined with a porometer. By direct measurements on leaves can learn important information on plant water stress, photosynthetic capacity or gas exchange with the atmosphere (O_2 / CO_2). As a response to osmotic stress salt component to reduce transpiration stomata are partially closed. Stomata movements are affected by the osmotic effect of salt stress.

Bologa (Covașă) Mihaela, Jităreanu Carmen Doina, Slabu Cristina, Marta Alina Elena (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE INFLUENCE OF SALT STRESS ON FOLIAR WATER CONTENT LEAVES OF SOME TOMATO CULTIVARS FROM N-E ROMANIA
INFLUENȚA STRESULUI SALIN ASUPRA CONȚINUTULUI DE APĂ LA NIVEL FOLIAR A UNOR GENOTIPURI DE TOMATE DIN NORD-ESTUL ROMÂNIEI

Water is an important factor for the distribution of plant species on Earth, under stress leaves are the organs which are observed first symptoms. The research was conducted under greenhouse condition. The biological material was represented by ten local tomatoes populations collected from areas with saline soils from Moldavia region and compared with commercial type salt-tolerant tomato. Tomato genotypes in the study were subjected to salt stress for a period of 30 days is constantly wetted with saline solution to a concentration of 100 mM and 200 mM. There have been a number of quantitative investigations in the foliar ascertaining the fact that the genotypes subjected to salt stress is a reduction in the content of free water and to increase the amount of water bound thereby increasing the capacity of the biological tolerance of such local populations of tomatoes.

Cauș Maria (Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chișinău, Republic of Moldova)

CHANGES IN ACID PHOSPHATASE ACTIVITY AND ISOFORM PATTERNS IN ROOT CYTOPLASMIC AND MEMBRANE BOUND PROTEIN FRACTIONS OF *PISUM SATIVUM* L. SEEDLINGS EXPOSED TO CADMIUM APPLICATION
MODIFICĂRILE ACTIVITĂȚII FOSFATAZEI ACIDE ȘI A PATERNULUI IZOENZIMATIC ÎN FRAȚIILE PROTEICE DIN CITOPLASMA ȘI MEMBRANELE RĂDĂCINILOR PLANTULELOR DE *PISUM SATIVUM* L EXPUSE APLICĂRII CADMIULUI

Changes in seedlings biomass and height, acid phosphatase (AcP) activity as well as isozymes of AcP patterns were analyzed in root cytoplasmic and membrane bound protein fractions of pea seedlings grown under 4 and 40 μ M CdCl₂ for 10 days. Significant decrease has been observed in growth and development of pea seedlings under cadmium (Cd) treatments. In pea root seedlings significant increase in total cytoplasmic and covalently bound AcP activity was observed under Cd treatment at 4 and 40 μ M CdCl₂. While both Cd concentrations significantly declined the level of total root ionically bound acid phosphatase activity. Changes in total AcP activity from protein fractions separated from roots of 10 day old pea seedlings grown at the both concentrations of Cd were accompanied by the changes in the activity of AcP isozymes. Cd induced activity of five cytoplasmic AcP isozymes and two covalently bound AcP, but inhibited the activity of three ionically bound AcP.

Lascu Camelia, Hoza Dorel, Cătuneanu-Bezdadea Ioana, Madjar Roxana, Delian Elena, Bădulescu Liliana (University of Agricultural Sciences and Veterinary Medicine of Bucharest, Romania)

THE RELATION BETWEEN THE CONTENT OF MACROELEMENTS FROM SOIL AND PLANT, AT SOME PLUM VARIETIES
RELAȚIA DINTRE CONȚINUTUL ÎN MACROELEMENTE AL SOLULUI ȘI PLANTEI, LA UNELE SOIURI DE PRUN

The minerals requirements of different species are related to the species biological feature and even depend on the every varieties characteristic feature. In this context, this article is focused on the determination of some correlation between soil and plant mineral content with a view to assure an equilibrate nutrients supply during the vegetation period. The soil supply with minerals was slightly different for the three analyzed plum cultivars (Rivers timpuriu, Stanley, Centenar), but generally, the soil had a good supply with nitrogen, phosphorus and potassium. The content of minerals on different organs had variable limits: 9.04 to 12.67% - leaves; 4.54 to 5.14% - fruits; 4.89 to 8.12% - shoots of 1 year old and 4.89 to 8.12% - shoots of 2 years old. The highest average content of minerals in the 4 organs analyzed was determined for the flowering phenophase (6.70%) and the average content of minerals for the organs analyzed in the three phenophases ranged between 6.02% (Centenar cv.) and 7.82% (Stanley cv.). For leaves, the lowest content of minerals was determined in August, during trees entrance in the dormancy period. The correlations between the soil and plant minerals generally showed that there were negative correlations (as plants mineral content increases, the soil mineral content decreases).

Ștefiriță Anastasia, Brînză Lilia, Melenciu Mihail, Leahu Igor (Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chișinău, Republic of Moldova)

PHYSIOLOGICAL EFFECTS OF THIOUREA ON BIOLOGICAL PERFORMANCE OF PLANTS UNDER DROUGHT CONDITIONS: II. ENHANCEMENT OF WATER USE EFFICIENCY
EFECTUL FIZIOLOGIC AL TIIOUREEI ASUPRA PERFORMANTELOR BIOLOGICE ALE PLANTELOR ÎN CONDIȚII DE SECETĂ: II. OPTIMIZAREA EFICIENȚEI UTILIZĂRII APEI

The greenhouse and field experiments were conducted to evaluate the effect of grain pre-soaking and foliar application of thiourea (TU) and thiourea in combination with Composite (TU+C) – the preparation, containing trace elements iron, cobalt, zinc, magnesium, boron, vitamin PP, but iron, cobalt and boron in the form of biologically active coordination compounds (pat. MD 813), on the photosynthesis intensity, transpiration and productivity of maize and soybean plants. It has been established that the use of TU+C made the improvement of water status, increased the content of assimilating pigments, photosynthesis intensity, water use efficiency, growth and productivity of plants. Pre-treated with TU+C plants distinguished by more economically consumption and enhancement of water use efficiency.

Toderică Iurii, Bejan Olga (Research and Practical Institute for Horticulture and Food Technology, Chișinău, Republic of Moldova)

RESEARCH ON SOME PARAMETERS OF SEED PRODUCTION OF CUCUMBER VARIETY 'CALIBRI'
CERCETĂRI PRIVIND UNII PARAMETRI AI PRODUCȚIEI DE SEMINȚE LA SOIULUI DE CASTRAVEȚI 'CALIBRI'

'Calibrî' cucumber variety with semi-long fruit intended for fresh consumption and for canning has been approved in 2015. During the period 2013 - 2014, determinations were performed on coefficients of variation for the main characters of the variety Calibrî. Thus, the character of the fruit shape index registered a low variability in both technological maturity (5.4% - 7.0%) and physiological maturity (6.2% - 9.0%), which represents a great uniformity of variety on the shape of the fruit. Concerning the characteristics of quality, variety Calibrî achieved an overall good organoleptic assessment (82.1%) compared to Rodnicioc F1 (69.2%), showing a pleasant commercial aspect, fine texture and good flavor - without bitterness. From the synthesis of data on the behavior of Calibrî variety results that the main characters studied fall within the limits of variation of the analyzed variety, which shows a good conservative routing selection.

Toderică Iurii, Bejan Olga (Research and Practical Institute for Horticulture and Food Technology, Chișinău, Republic of Moldova)

THE MAIN QUANTITATIVE AND QUALITATIVE TRAITS OF EARLY WHITE CABBAGE VARIETY DE BUZAU
PRINCIPALELE ÎNSUȘIRI CANTITATIVE ȘI CALITATIVE LA VARZA ALBĂ TIMPURIE SOIUL DE BUZĂU

It was found that the half-seed method by setting the control field in spring and then the wintering field in rosette stage (15-20 well-developed leaves) can maintain the variety in the allowable variability. Starting from the wintering plants in the rosette stage, the average seed quantity was 50.7 g/plant, while plants that overwinter in the head stage was only 28.8 g/plant. In the first case, floral stems are more vigorous, showing an average height of 127.6 cm to 118cm average height of floral stem in the second case. In 2014 was achieved an average production/ha of 1 574.5 kg conditional seed, to 1008 kg in 2015. Under the program for the conservative selection, by applying rigorous selection methods, this variety has been maintained within the allowable variability.

Meluț Lucian Cîprian, Roșca Aurelia Elena (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

EVALUATING HAIL STORM DAMAGE TO CORN PRODUCTIVITY
EVALUAREA DAUNELOR PROVOCATE DE FURTUNI INSOȚITE DE GRINDINĂ ASUPRA PRODUCTIVITĂȚII PORUMBULUI

In Romania, more than half of hail storm are in the period from May to July. They are responsible for small losses of productions they occur in the early stages of vegetation. Significant losses occur when hail storm occur during flowering-silking period. James V. Vorst appreciates that monetary losses caused by hail storm reach \$ 52 million annually in the USA. Starting from this consideration, but also in terms of attracting attention on providing corn crops, in the spring of 2015 we established a two-way experience, in Lovrin, Timișoara. The first experimental factor, corn cultivar has been represented by 18 maize hybrids of FAO 350-550 maturity groups. The second factor was the degree of defoliation on plants corn produced artificially in various stages of vegetation. Results indicate losses of up to 5% when maize has six leaves, 1-10% when corn has 10 leaves, of 9-62% during flowering-silking and 6-41% when milk line was distinguishable.

2nd SECTION

HORTICULTURE TEHNOLOGIES

VEGETABLE GROWING, FRUIT GROWING, VITICULTURE, OENOLOGY,
POSTHARVEST TECHNOLOGY OF HORTICULTURAL PRODUCTS, FLORICULTURE,
ORNAMENTAL ARBORICULTURE, HORTICULTURAL CONSTRUCTIONS,
HORTICULTURAL PLANTS PROTECTION, ECOLOGICAL HORTICULTURE

6th Lecture room, second floor

Chairmen:

Prof. dr. Valerian **BALAN**
Prof. dr. Valeriu V. **COTEA**
Prof. dr. Caruso **GIANLUCA**
Prof. dr. Mihai **ISTRATE**
Prof. dr. Neculai **MUNTEANU**
Prof. dr. Liliana **ROTARU**

Secretariate:

Asist. dr. Monica **HEREA**
Asist. dr. Gabriel **TELIBAN**
Drd. Florina-Maria **GALEA (DELEANU)**



ORAL PRESENTATIONS

Galea (Deleanu) Florina-Maria, Munteanu Neculai, Teliban Gabriel C., Hamburdă Silvia-Brîndușa, Onofrei Vasilica (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

STUDY CASES REGARDING LANDSCAPING DESIGN IN FAMILY VEGETABLE GARDENS
STUDII DE CAZ REFERITOARE LA FOLOSIREA DESIGNULUI PEISAGER ÎN CULTURA LEGUMELOR

The paper presents an analysis of Romanian household vegetable gardens, based on ornamental criteria and specific vegetable growing technologies characteristic to these plant displays in cultivation. The weak and strong points of the studied vegetable gardens were marked out through a SWOT analysis and based on it solutions were elaborated to improve them on an aesthetic, technologic and workable level in accordance with specialized literature. The obtained results offered unity, balance and an increasing aesthetic value to the plant display, participating in an active matter to the enlargement of their sustainability degree.

Kepenek Kahraman (Suleyman Demirel University, Isparta, Turkey)

CONTROLLING SEEDLING HEIGHT BY TREATING SEEDLINGS WITH PACLOBUTRAZOL ON SOME PLANT SEEDLINGS

CONTROLUL ÎNĂLȚIMII RĂSADURILOR PRIN TRATAREA ACESTORA CU PACLOBUTRAZOL LA CÂTEVA SPECII DE PLANTE

*The objective of this study was to control seedling height by treating seedlings with paclobutrazol on some plant seedlings at plug growth period under in vitro and greenhouse conditions during first seedling cycle. Paclobutrazol was applied as foliar sprays to in vitro and greenhouse-grown seedlings [banana (*Musa acuminata*, cv. Dwarf Cavendish), tomato (*Lycopersicon esculentum* Mill., cv. T83-48F1) and potato (*Solanum tuberosum*, cv. Granola)]. Foliar spraying was done one week after transplanting at doses of 0, 100, 250, 500, 750 and 1000 ppm of Paclobutrazol solutions. To examine the effect of Paclobutrazol application on growth of seedlings in in-vitro and greenhouse conditions, plant growth, leaf area, thickness of leaf, leaf chlorophyll content, plant height, root length and internodal length were measured. Paclobutrazol had effect at all doses and plug growth was reduced. Plant height was shortened, leaf area and internodal distance and thickness of leaves were reduced. Paclobutrazol slightly decreased the internodal length. The leaf area was reduced with increasing dose of paclobutrazol and total leaf chlorophyll content increased. Results showed that paclobutrazol application positively affected seedling growth and increased the adaptation of the seedlings in the field conditions.*

Koyuncu Fatma¹, Özongun Şerif² (¹Süleyman Demirel University, Isparta, Turkey, ²TAGEM, Fruit Research Institute, Eğirdir, Isparta, Turkey)

ROOTSTOCK AND INTERSTOCK EFFECTS ON CARBOHYDRATE AND N, P, K CONCENTRATIONS OF APPLE NURSERY TREES

EFECTELE CONCENTRAȚIEI CARBOHIDRAȚILOR ȘI N, P, K ASUPRA PORTALTOIULUI DINTR-O PEPINIERĂ DE MĂR

Different interstock combinations have been investigated for different purposes in apple growing so far. Some of them are still being applied in practice and positive results are observed. This study has been conducted to determine the effects of different variety/interstock/rootstock combinations on some physiological characteristics in apple nursery trees. For this purpose, Fuji (vigor) and Red Chief (spur) apple varieties have been grafted using three different interstock/rootstock combinations (MM106/M9, MM106/seedling, M9/seedling). The cultivar 'Fuji' had higher total leaf area than 'Red Chief'. Interstock/rootstock combinations did not have a significant effect on the leaf area. Root carbohydrate was detected as higher concentration than leaf in both cultivars. On the other hand, N concentration of roots was lower than the leaves. Generally CH:N of leaf was high in nursery trees grafted on seedling. There were no significant differences among the interstock/rootstock combinations in terms of the total carbohydrates, C:N ratio, chlorophyll. However, it has been determined that cultivars have significant effects on these parameters.

Koyuncu Mehmet Ali, Koyuncu Fatma (Süleyman Demirel University, Isparta, Turkey)

EFFECTS OF SOME POSTHARVEST TREATMENTS ON QUALITY OF FRESH-CUT 'BRAEBURN' APPLE DURING COLD STORAGE
EFECTELE UNOR TRATAMENTE POST-RECOLTARE ASUPRA CALITĂȚII MERELOR 'BRAEBURN' TĂIATE PE DURATA STOCĂRII LA RECE

The aim of this research is to determine the effects of lovastatin, 1-MCP, and hot water treatments on quality of fresh-cut "Braeburn" apple during cold storage. Fruits picked at optimum harvest time were transported to the Postharvest Physiology Laboratory of Horticulture Department immediately. Fruits treated with lovastatin (1.25 mmol/l), 1-MCP (1 $\mu\text{L L}^{-1}$), hot water (50°C for 60 s), and control group were sliced with an apple slicer device. Sliced apples were packaged in plastic boxes and stored at 0°C and 90±5 relative humidity during 14 days. Weight loss, fruit flesh firmness, titratable acidity, fruit flesh colour, respiration rate, ethylene production and microbial activity were determined at the beginning and after 7 and 14 days of storage. As a result, 1-MCP treated apple slices had a little higher titratable acidity and L values than those of the other treatments. Lovastatin treated apples gave better results in terms of microbial activity compared to other applications. Fresh-cut "Braeburn" apple could be stored at 0°C and 90±5 relative humidity for 7 days without significant quality losses.*

Popovici Claudiu Petruț, Chelariu Elena Liliana (University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)

THE STUDY OF A TOMATO ASSORTMENT WITH MULTI-USE (FOOD, MEDICINAL AND ORNAMENTAL)
STUDIUL UNUI SORTIMENT DE TOMATE CU MULTIPLE UTILIZĂRI (ALIMENTARE, MEDICINALE ȘI ORNAMENTALE)

The study was conducted in Bacău County, Podiș Farm, during 2015 - 2016, under open field conditions. An assortment of improved indigo, red, pink, or yellow cultivars was grown and analyzed, for food, medicinal and ornamental use: INDIGO "APPLE" TOMATO, INDIGO "BLUE BEAUTY" TOMATO, INDIGO "BLUEBERRIES" TOMATO, INDIGO "BLUE GOLD" TOMATO, GOLDBERRIES, INDIGO "SUN" F1 TOMATO, GEM LUCID TOMATO. All the varieties and the hybrids had indeterminate growth and the physiological maturity was reached in the period August 1st to 5th. Fruit harvesting was spread over a couple of months, until the advent of the first killing frost in October. The fruits stood out by (were noted for) the content of the anthocyanin type antioxidants (INDIGO "APPLE" TOMATO, INDIGO "BLUE BEAUTY" TOMATO, INDIGO "blueberries" TOMATO), the excellent taste of all the cultivars and the aesthetic appearance: indigo and red: INDIGO "APPLE" TOMATO, INDIGO "BLUEBERRIES" TOMATO, indigo, red and pink: INDIGO "BLUE BEAUTY" TOMATO, indigo, yellow and red GEM LUCID TOMATO, indigo and yellow: INDIGO "BLUE GOLD" TOMATO, GOLDBERRIES, INDIGO "SUN" F1 TOMATO.

Stoleru Vasile¹, Munteanu Neculai¹, Stoleru Carmen Maria², Marin Vasile¹ (¹University of Agricultural Sciences and Veterinary Medicine of Iași, ²"V. Adamachi" College of Agricultural and Food Industry, Iași, Romania)

A NEW ASSORTMENT OF EGGPLANT (*SOLANUM MELONGENA* L.) FOR CULTIVATION IN TUNNELS
UN NOU SORTIMENT DE PĂTLĂGELE VINETE (*SOLANUM MELONGENA* L.) PENTRU CULTURA ÎN SOLARII

The economic efficiency of eggplant crops in tunnels is generally determined by any technological factors such as: providing seedlings with high biological value, crop establishing at time and appropriate density, assuring the measures to maintenance at optimum etc. The aim of the research was to determine the suitability of a new eggplant assortment for cultivation in tunnels around of Matca area. The biological material used was represented by three hybrid cultivars: Black Pearl F1 (Enza Zaden), Mirval F1 (Vilmorin) and Valeria F1 (Hazera-Nickerson). The highest yields, early (68.60 t/ha) and total (163.93 t/ha) were achieved by Black Pearl F1 hybrid. The highest number of fruits per plant was obtained by Valeria hybrid and the highest percentage of early production was achieved by Mirval F1 cultivar.

Teliban Gabriel Ciprian¹, Burducea Marian², Lobiuc Andrei^{2,3}, Stoleru Vasile¹, Galea (Deleanu) Florina-Maria¹, Onofrei Vasilica¹, Zamfirache Maria-Magdalena², Munteanu Neculai¹ (¹University of Agricultural

Sciences and Veterinary Medicine of Iași, Romania, ²„Alexandru Ioan Cuza” University of Iași, Romania, ³Ștefan cel Mare” University of Suceava, Romania)

YIELD, MORPHOLOGICAL AND PHYSIOLOGICAL COMPARATIVE ASPECTS IN *OCIMUM BASILICUM* L. UNDER DIFFERENT FERTILIZATION TYPES
ASPECTE COMPARATIVE DE PRODUCȚIE, MORFOLOGIE ȘI FIZIOLOGIE LA *OCIMUM BASILICUM* L. SUB DIFERITE TIPURI DE FERTILIZARE

The aim of this paper is the comparative evaluation of various types of fertilizers on yield and some physiological parameters of basil plants, cultivated by direct seeding in the field, without irrigation, under the experimental conditions from V. Adamachi farm of U.S.A.M.V. Iași. The applied fertilizers were: organic (Orgevit - 600 kg/ha), chemical (N: P: K 20:20:20 - 300 kg/ha), microbial (Mycoseed - 30 kg/ha) and municipal sludge in two doses (40 t/ha and 20 t/ha). Regarding the production of fresh herba, chemical and microbial fertilization led to the highest values, increased with 38% and 19% respectively compared to controls. Similarly, dry mass production increased under the same types of fertilization by 34% and 28% respectively. The number of lateral stems also increased in plants fertilized with municipal sludge and microorganisms. In terms of assimilatory pigments content, higher than the control values were recorded with sludge (40 t/ha), organic and chemical fertilization. In conclusion, fertilization with microorganisms and municipal sludge can be a viable and sustainable alternative to chemical fertilizers for the cultivation of basil.

Balan V., Ivanov I., Peșteanu A., Vamașescu S., Bîlici Inna., Roșca A. (State Agrarian University of Moldova, Republic of Moldova)

CHANGES DURING RIPENING CHERRIES AND QUALITY VARIETIES OF CHERRY ADRIANA, FERROVIA AND SKEENA, GRAFTED ON GISELA 6
MODIFICĂRI ÎN TIMPUL MATURĂRII CIREȘELOR ȘI CALITATEA LOR LA SOIURILE ADRIANA, FERROVIA ȘI SKEENA, ALTOITE PE GISELA 6

Changes during ripening fruit are among the most important characteristics in the training and quality of the harvest cherries. This research was undertaken to examine the yield formation (n = 32) varieties of cherry Adriana, Ferrovia and Skeena, grafted on Gisela 6. Regardless of variety, branches bunch cherries mass decreases from 8.69 - 8.89 g annual branches to 7.19 - 7.49 g branches of three years. Harvest is uniformly biennial branches (27.27-39.21%), branches bunch of 1 year (from 27.27 to 31.22%) and branches bunch of 2 years (from 27.35 to 31.2%).

Balan V., Bîlici Inna, Balan P. (State Agrarian University of Moldova, Republic of Moldova)

APPLE PRODUCTION IN REPUBLIC OF MOLDOVA
PRODUCȚIA DE MERE DIN REPUBLICA MOLDOVA

This paper presents a study on the development of apple orchards and especially in recent years in Moldova. The total area of apple orchards is decreasing from 70300 ha in 2003 to 64210 hectares in 2013, of which: 63.10 thousand hectares are traditional orchards and groves only 920 000 ha superintensive. And for the years 2015-2025 is forecast to gradually increase the area up to 18920 ha orchard superintensive. This development will allow a rapid increase of productivity and fruit quality.

Dascălu Marius Constantin¹, Istrate Mihai¹, Hlihor Ovidiu², Rotaru Margareta¹ (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania, ²S.C. OLMA S.R.L. Bălțați, Iași, Romania)

THE BEHAVIOUR OF SOME APRICOT VARIETIES GRAFTED ON GENERATIVE ROOTSTOCKS AT S.C. OLMA S.R.L. COM. BĂLȚAȚI, JUD. IASI
COMPORTARTEA UNOR SOIURI DE CAIS ALTOITE PE PORTALTOI FRANC LA S.C. OLMA S.R.L. COM. BĂLȚAȚI, JUD. IAȘI

Production of new planting material for apricot is difficult because in Romania we don't have valuable vegetative rootstocks to ensure easy propagation and to allow establishment of intensive and superintensive orchards. In this specific segment of nursery generative rootstocks are used obtained from the seeds of plum varieties, almond or even apricot. Thanks to this element, we can set up intensive orchards, being necessary a relatively large space for spatial formation and development of the tree crown.

Kepenek Kahraman (Suleyman Demirel University, Isparta, Turkey)

PHOTOSYNTHETIC EFFECTS OF LIGHT-EMITTING DIODE (LED) ON IN VITRO-DERIVED STRAWBERRY (*FRAGARIA X ANANASSA* CV. FESTIVAL) PLANTS UNDER IN VITRO CONDITIONS
EFECTELE FOTOSINTETICE ALE DIODEI ELECTRO-LUMINISCENTE (LED) ASUPRA PLANTELOR DE CĂPȘUN (*FRAGARIA X ANANASSA* CV. FESTIVAL) OBTINUTE ȘI CRESCUTE ÎN CONDIȚII IN VITRO

*Purpose of this study was to investigate effect of different photon flux density (PPFD) conditions using LED lamps on culture of shoot explants derived from in vitro shoots of *Fragaria x ananassa* cv. Festival. To examine the combined effect of 55% red LED, 15% far red LED, 10% blue LED, 15% green LED and 5% warm light LED light on in vitro growth of plantlets, fresh and dry plant biomass, plant height, leaf area, number of shoot, shoot length,*

number of root and percentage of rooting and various growth of micropropagated plants were assessed under four light intensities (25, 50, 75 and 100 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PPFD; TRT2, TRT3, TRT4, TRT5, respectively). Unrooted strawberry shoots were cultured in the "Culture Pack" rockwool system with MS medium under CO_2 -enriched condition. The best response for regeneration of shoots and root induction was observed for shoot explants obtained on MS supplemented with BAP 1mg/l and NAA 0.5 mg/l at TRT3 (50 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PPFD). Chlorophyll and net photosynthesis were optimal in plants grown under TRT4 (75 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PPFD). Stomatal resistance and Fv/Fm values were highest at low light irradiance (TRT2). The highest efficiency and high frequency of shoot formation occurred after 30 days. Elongation of shoot buds was obtained at TRT4 (75 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PPFD) and TRT5 (100 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PPFD) on the same MS medium. Regenerated shoots rooted best on the same medium of elongation. Irradiance at 75 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PPFD was suitable for the acclimatization of strawberry plants. We concluded that the present protocol can be efficiently used for mass propagation of the strawberry.

Manziuc V., Popa S., Ribintev I. (State Agrarian University of Moldova, Republic of Moldova)
GROWTH AND PRODUCTIVITY OF PLUM TREES DEPENDING ON THE FORM OF THE CROWN AND VARIETY
CREȘTEREA ȘI FRUCTIFICAREA POMILOR DE PRUN ÎN FUNCȚIE DE FORMA COROANEI ȘI SOI

In order to reduce the vigor of growth plum trees and increase productivity, it studied the form of improved bush crown. Trees with 3, 4 and 5 main branches took part in the experiment. The control group was presented by the "mixed pyramid" crown that is recommended for plum trees in Moldova. Twelve years of research have shown that the improved bush forming contributes to the rapid development of the vegetative mass of trees when they are young, the reduced size of the crown (by 32-40%) and to almost doubled increase of productivity of gardens. The most productive was the option of improved bush with 5 main branches.

Peșteanu Ananie (State Agrarian University of Moldova, Republic of Moldova)
EFFECTS OF GROWTH REGULATOR CERONE 480SL APPLICATION ON COLOR DEVELOPMENT OF 'IDARED' APPLES VARIETY
EFECTUL TRATĂRII CU REGULATORUL DE CREȘTERE CERONE 480SL ASUPRA COLORĂRII FRUCTELOR DE MĂR DE SOIUL 'IDARED'

The study subject of the experience was Idared apple variety grafted on M 9. The trees were trained as slender spindles. The distance of plantation is 3.5 x 1.2 m. To study color development of the apple fruits was experimented the following variants: 1. Witness – no treatment; 2. Cerone 480SL - 1.3 l/ha; 3. Cerone 480SL - 1.5 l/ha. Growth regulator Cerone 480SL was sprayed one time 2 – 3 weeks before commercial harvest. The research was conducted during the period of 2012 year. During the research, it was studied the firmness of fruits, hydrolysis and color index, etc. Color of fruits was estimated at harvest using a 5-point scale of grading. In the present research work, we demonstrated that Cerone 480SL may be included in the system of color development of Idared apple variety fruits, the dose of 1.3 l/ha, applied one spray 2 – 3 weeks before commercial harvest.

Istrate Andrei, Rotaru Liliana (University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)
THE APPLICATION OF FRACTAL ANALYSIS TO THE COARNĂ SORTOGROUP
APLICAREA ANALIZEI FRACTALE LA SORTOGRUPUL COARNĂ

Coamnă neagră and Coamnă albă vine varieties were used as maternal genitor in order to obtain new romanian vine creations. Out of these were included in the study Coamnă neagră selecționată, Azur, Milcov, Gelu, Ozana and Mara varieties within Coamnă neagră sortogroup. After applying the fractal analysis, it was determined the differences between the parent variety and its descendants. It results the fact that the fractal dimension closest to Coamnă neagră variety it is owned by Coamnă neagră selecționată variety (1.0389) and the farthest it is owned by Ozana variety (1.1254). For the Coamnă albă sortogroup, the value closest to the genitor was 1.0855, at Miorița variety, and the furthest was at Muscat Timpuriu de București variety of 1.1124.

Savin Gheorghe, Cornea Vladimir, Baca Ivan, Botnarenco Andrei (Scientific-Practical Institute For Horticulture and Technologies, Republic of Moldova)
GRAPEVINE ASSORTMENT – COMPONENT OF FOOD SECURITY AND SAFETY
SORTIMENTUL VITICOL – COMPONENT AL SECURITĂȚII ȘI SIGURANȚEI ALIMENTARE

The degree of viticulture contribution in ensuring the food security and safety is considerably determined by the potential of genetic diversity of assortment. In the paper is presented the evolution of grapevine assortment in Republic of Moldova in terms of ecological-geographic origin of varieties, some agrobiologic characteristics. To ensure the branch sustainability in conditions of northern extremity of industrial viticulture, the concept of genetic improvement of assortment is oriented at creation of varieties, inclusive seedless with multiple biological resistance. In conditions of climatic and socio-economic challenges, in order to ensuring food security, we note as necessary the development and implementation of programs for exploration, conservation and evaluation of genetic resources diversity - a basis for increasing the competitiveness and resistance of varieties. Through the intelligent correlation of classical breeding methods with the molecular biology, but also on new methodological and instrumental basis under development, we see an opportunity of grapevine genome fructification.

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EFFECT OF JOINT APPLICATION OF TRACE ELEMENTS AND PGPB *AZOTOBACTER CHROOCOCCUM* AND *PSEUDOMONAS FLUORESCENS* ON GRAPE RESISTANCE TO THE WINTERING

EFECTUL APLICĂRII COMUNE A MICROELEMENTELOR ȘI PGPB *AZOTOBACTER CHROOCOCCUM* ȘI *PSEUDOMONAS FLUORESCENS* ASUPRA REZISTENȚĂ VIȚEI DE VIE LA IERNARE

It was highlighted the positive effect of trace elements and products of microorganisms Azotobacter chroococcum and Pseudomonas fluorescens on the accumulation of photosynthetic pigments, starch, content of compatible osmolytes (carbohydrate and proline) in the organs of plants under low temperatures, indicating the stimulator role of the mentioned products in achieving enhanced potential resistance of vine. It is assumed that plants fertilization with trace elements + suspension and metabolites of microorganisms facilitates the activities of one of the specialized mechanisms of plant resistance to low temperatures - compatible osmolytes accumulation. Keywords: viticulture, strength, wintering, trace elements, microorganisms.

Colibaba Lucia Cintia¹, Cotea V. Valeriu¹, Luchian Camelia¹, Tudose-Sandu-Ville Ștefan¹, Toader Ana Maria² (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania, ²Crama Garboiu, Vrancea, Romania)

STUDIES REGARDING THE PRODUCTION OF ARTEMISIA ABSINTIUM WINE
CERCETĂRI PRIVIND PRODUCEREA VINULUI PELIN

The present paper aims at studying aromatised wines, respectively wine aromatised with Artemisia absintium, due to his rich history and use since the Greek and Roman era. Hypocrates from Kos (469-372 bCh), this wine was used as medicine. The Greeks named it Hypocrates' wine, while the Romans absinth wine. In Romania, this is considered a traditional wine. Unfortunately, at the present moment, wine aromatised with Artemisia absintium is considered having a lower quality than regular wines, as the raw matter used usually has health issues. That is why the present study aims at optimising the technological process for obtaining Artemisia absintium wine as well as its structural and sensorial characteristics.

Cornea Vladimir (Scientific-Practical Institute for Horticulture and Technologies, Republic of Moldova)

SOME FUNCTIONAL ASPECTS OF INFORMATION SYSTEM USED IN MANAGEMENT OF GRAPEVINE GENETIC RESOURCES OF ISPHTA
UNELE ASPECTE FUNCȚIONALE ALE SISTEMULUI INFORMATIC DE GESTIUNE A GENOFONDULUI VIȚEI DE VIE AL ISPHTA

Information System (IS) used in the management of grapevine genetic resources of ISPHTA was completed with some functions that provide the opportunity for ampelometric measurements (descriptors OIV 601 - OIV 618) based on digital images of mature leaf. The elements that define each descriptor are adjusted with leaf image by dragging with the mouse on its surface. Depending on the level of expression of each character are evaluated the respective codes and completed Ampelographic Card of genotype. Applying the same principle was achieved the possibility for measuring of 11 parameters that define the dimensions of the grapevine seed. The functions implemented in IS facilitate accumulation and processing of ampelographic information and exclude the necessity of herbarium preparation and carrying out instrumental measurements.

Bălănescu (Neacșu) Irina Ioana, Iacomi Beatrice Michaela, Roșca Ioan (University of Agricultural Sciences and Veterinary Medicine of Bucharest, Romania)

RESEARCH ON EVOLUTION OF THE MAIN DISEASES OF PLATAN IN ROMANIA
CERCETĂRI PRIVIND EVOLUȚIA PRINCIPALELOR BOLI ALE PLATANULUI ÎN ROMANIA

In the last years, in Bucharest, started to plant trees of Platanus spp. in the years 2014-2016, has followed the evolution of fungal attack caused by Erysiphe platani that cause the mildew and Apiognomonia veneta that causes most important disease of sycamore (Sycamore anthracnose). Research has followed the evolution of these diseases in the nursery from Bolintin Deal and identifying the factors that influence the development of these diseases that have the capability to attack Platanus spp. and vulnerable periods of life with diseases, pathogens applying chemical combat. The turntable was seen as powdery mildew disease spreads rapidly with decreasing relative humidity, can increase the number of trees attacked by 14.82% / month, given that the percentage of leaves attacked, depending on year and climatic conditions vary between 0.43% and 17.58. In 2016 36% trees were attacked by anthracnose leaf attacked by a percentage between 0.88 to 30.30%.

Miroiu Carmen¹, Talmaciu Mihai² (¹Phytosanitary National Authority – Vaslui Phytosanitary Department, Huși Office, ²University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

CONTRIBUTIONS TO THE STUDY OF BIOLOGY CHESTNUT MINING MOTH - CAMERARIA ORHIDELLA DESKA, DIMIC, UNDER CONDITIONS OF HUȘI AREA, VASLUI COUNTY
CONTRIBUȚII LA STUDIUL BIOLOGIEI MOLIEI MINIERE A CASTANULUI - CAMERARIA ORHIDELLA DESKA, DIMIC ÎN CONDIȚIILE ZONEI HUȘI, JUDEȚUL VASLUI

Through this study bring the new contributions to the knowledge of the biology chestnut leaf mining moth. These observations were made in terms of Husi, Vaslui area and consisted of systematic recording of data on the ecological conditions of the studied area, appearance and flying insect oviposition, completing the larval stage, the transformation in pupa stage and re-start every generation, observations what we've done using pheromone traps, "Atra-CAM" and using the Agroexpert program we calculated the sum of effective temperatures required at each stage of development. Order to better establish during each stage in the field I chose trees that have below branches, so as to be able to reach them and chose 10 whole leaves that we meant by a thread, and on them we follow all stages from egg to pupa and adult. We watched practically the egg stage, larva and pupa to butterfly leaving the mine by the same leaves and I folioles.

Siakavelis Kostantinos¹, Petrescu Rovel², Roșca Ioan¹ (¹University of Agricultural Sciences and Veterinary Medicine of Bucharest, Romania)

RESULTS REGARDING BIOLOGICAL CONTROL WHICH REPLACED CHEMICAL CONTROL IN GREENHOUSES WITH TOMATO
REZULTATE PRIVIND COMBATEREA BIOLOGICĂ CE POATE ÎNLOCUI COMBATEREA CHIMICĂ ÎN SERELE DE TOMATE

Practical results, obtained in the SC Leoser SA, are presented, replace chemical control with biological control. Thanks to the technology of cultivation substrate "coco peat" and "rockwool", there are no problems of soil pests (wireworms, white worms, gray worms). In recent years we have successfully used products: NESIDIOcontrol (Nesidiocoris tenuis) MACROcontrol (Macrolophus pygmaeus), SWIRSccontrol (Amblyseius swirskii) ENCARcontrol (Encarsia formosa), APHICcontrol (Aphidius coleman) PHYTOcontrol (Phytoseiulus persimilis) DIGLYcontrol (Diglyphus isaea) ORICcontrol & MAJUScontrol (Orius laevigatus and O. mayusculus) MONcontrol (Amblyseius montdorensis). Evolution of main pests is presented correlated with biological control measures. Tuta absoluta was successfully controlled by mass capture and killing using pheromone traps. The evolution of pest flight expressed by the number of males captured/trap is presented. Presented technology has shown non negative influence on the use of bumblebees for pollination. In case of punctual situation, appearance of problems due to pests was imposed application of pesticides.

Tălmăciu Mihai, Mocanu Ionela, Tălmăciu Nela, Herea Monica (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

OBSERVATIONS ON THE EPIGENOUS ENTOMOFAUNA FROM THE WHEAT CROPS
OBSERVAȚII ASUPRA ENTOMOFAUNEI EPIGEE DIN CULTURILE DE GRÂU

The increase grain production is possible through the application of technology that involves the use of varieties with high yield, soil fertilization to provision according to their requirements, full mechanization of work and measures to prevent and combat specific pests and weeds. Regarding pests of grain crops grasses, they can cause annual havoc 13.8% compared to 11.6% produced by pathogens and weeds due to 9.5%. This paper presents the research on the epigenous entomofauna of wheat crops in 2016, in Focșani area used the traps type Barber and collecting biological material was conducted from May to July. The collection of the biological material was performed periodically on the following dates: 23.05; 07.06; 23.06; 07.07 using 18 traps belonging to the three experimental variants: Variant 1 - wheat after sunflower; Variant 2 - wheat after wheat; Variant 3 - wheat after rape. The most commonly species found in this period are following the order: Coleoptera, Hymenoptera, Orthoptera, Heteroptera, Diptera, Colembolla etc. They were collected in addition to insects, and species belonging to the Crustacea class with the Isopods order, and the Arachnida class with the Araneae order.

Pădureanu Silvica (University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)

PALYNOLOGICAL FEATURES AND POLLEN GERMINATION AT SCILLA BIFOLIA L.
CARACTERISTICILE PALINOLOGICE ȘI GERMINAREA POLENULUI DE SCILLA BIFOLIA L.

The paper presents the main features palinological of Scilla bifolia L. ssp. bifolia on the one hand and the potential germination of pollen same taxon, on the other hand. Palinological measurements focused: shape, color of pollen grains, exin ornamentation, size of pollen grains, the number of germination pore/grain of pollen. Testing of germinating potential was carried out by "in vitro" on nutrient mediums with varied concentration in carbohydrate elements between 0% and 100%. The pollen germination potential of Scilla bifolia is expressed at its peak when in culture medium is sucrose 15%, 20%, 25%, 24 hours after inoculation when the number of pollen grains germinated is more than 70%. The pollen germinated "in vitro" is viable over 144 hours. The results prove a normal meiosis and well balanced male gametes, so fertile for this diploid genotype. Investigations carried provides important information in taxonomy for genus Scilla and ornamental plant breeding.

Pădureanu Silvica (University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)

POLLEN TUBE GROWTH RATE AND MORPHOLOGICAL ANOMALIES OF POLLEN TUBES AT *SCILLA BIFOLIA* L.

RATA DE CREȘTERE A TUBULUI POLINIC ȘI ANOMALIILE MORFOLOGICE ALE TUBURILOR POLINICE DE *SCILLA BIFOLIA* L.

This study of male gametophyte of Scilla bifolia L. ssp. bifolia highlights pollen tube growth and growth rate which are central role in the fertilization process for plants. Reference is made to the cytological aspects of pollen tubes in relation with sucrose concentration in culture mediums. We used variants of nutrient media, with sucrose concentration of 0% to 100%. We conclude that is a strong positive correlation between the increase in length of pollen tubes and germination potential. The longest pollen tubes were formed on mediums with 15% - 25% sucrose. The data obtained prove that the increase in pollen tube length is genetically determined being correlated with the length of floral style. The growth rate of pollen tubes of Scilla bifolia is accelerated in the first 24 hours after inoculation pollen. We highlight the peculiarities of building pollen tube, longevity and abnormalities in male gametophyte development of Scilla bifolia.



POSTER PRESENTATIONS

Antofie Maria Mihaela, Sand Sava Camelia ("Lucian Blaga" University of Sibiu, Romania)

THE STANDARD CHARACTERIZATION OF RED ONION CULTIVARS: OF TURDA AND OF BUZĂU
CARACTERIZAREA STANDARD A DOUĂ SOIURI LOCALE DE CEAPĂ ROȘIE: DE TURDA ȘI DE BUZĂU

In order to maintain food security the conservation and sustainable use of all plant genetic resources for food and agriculture is essential under the Plant Treaty that was ratified by Romania in 2001. Plant Varieties Red onion Turda and Buzau have been officially recognized in 1952. Turda is erased in the Official Catalogue of varieties after 1990 and after 2004 Buzau it is erased. The aim of this study is to assess the local population in Dejani Brasov County, against the standard UPOV TG / 46/7. The analysis of results regarding 9 characteristics support the need to recognize these landraces according to the provisions of Directives 2008/62 / EC, 2009/145 / EC and 2010/60 / EU. It is also evaluated the conservation status at the official level for onions varieties, recorded before 1989, thus revealing that old genetic resources faced an extreme erosion posing negative effects on food security.

Cojocaru Alexandru, Munteanu Neculai, Stoleru Vasile, Ipătioaiei Costel (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

EFFECT OF PLANTING DISTANCES ON THE GROWTH AND YIELD OF RHUBARB
EFECTUL DISTANȚELOR DE PLANTARE ASUPRA CREȘTERII ȘI PRODUCȚIEI DE REVENT

The aim of the present research was to study the influence of planting distances on the growth and yield on rhubarb, cultivars of Victoria, Glanskins perpetual and local population. Applying differential cultivation technology, rhubarb yield varies according to crop density. The highest production was obtained in case of Victoria cultivar at density of 13,330 pl.ha⁻¹ (0.75 m x 1 m). Statistically assured yields were also obtained at the density 10,000 pl.ha⁻¹ (1 m x 1 m) on the same cultivar. Total yield varied within wide limits according to planting distances, ranging from 12,362 kg.ha⁻¹ to 41,956 kg.ha⁻¹.

Corduneanu Oana Raluca, Țenu Ioan, Stoleru Vasile, Cârlescu Petru, Șovăială Gheorghe (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

RESEARCHES ON THE DRIP FERTIGATION OF A TOMATO AND SWEET PEPPER CULTURE IN A SOLARIUM
CERCETĂRI PRIVIND FERTIRIGAREA PRIN PICURARE A UNEI CULTURI DE TOMATE ȘI ARDEI ÎN SOLAR

The studies and research in this paper show the influence of fertilization along with drip irrigation on a tomato and pepper crop, placed in a protected space. The experiments were organized in a solarium belonging to the Discipline of Vegetable, located in the Didactic Farm "V. Adamachi" in Iași. The purpose of the research was to determine the influence of fertilization through irrigation compared to an unfertilized working version. Thus, after fertigation, there were found differences concerning the plant height, the number of leaves, the number of inflorescences and fruits in a plant and the yield per hectare. The production obtained by the Minaret F1 tomato cultivar, compared to the control version, was of 111,421 kg/ha and the one obtained by the Brilliant F1 pepper cultivar, of 43,885 kg/ha.

Cristea Tina-Oana¹, Silvica Ambaruș¹, Maria Călin¹, Creola Brezeanu¹, Brezeanu Marian¹, Maria Prisecaru², Șova George Florin¹ (¹Research and Development Station for Vegetable Growing of Bacău, Romania, ²University "Vasile Alecsandri" Bacău, Romania)

IN VITRO SCREENING OF GERMINATIVE CAPACITY OF SEEDS AT SOME IMPORTANT VEGETABLES GENOTYPES PRESERVED IN SEED BANKS
REALIZAREA UNUI SCREENING IN VITRO PRIVIND CAPACITATEA GERMINATIVĂ A SEMINȚELOR UNOR GENOTIPURI IMPORTANTE DE LEGUME MENȚINUTE ÎN BĂNCI DE GENE

The aims of applied plant science research for agriculture are to enhance crop yields, improve food quality, and preserve the environment where human beings and other organisms live. The best way for conservation of plant biodiversity and its environment, would be to achieve high crop productivity per unit area. It is well known that conservation of seeds in gene banks for long periods has the disadvantage of loss in germination capacity. Culture of seed or embryos in vitro is a method to overcome this limitation by forcing hormonal seed germination, resulting in direct production of plants. The experiments carried out in developing this paper targets to determine the optimum in vitro temperature and culture medium for the germination of seeds at different important genotypes of vegetables.

Doltu Mădălina, Sora Dorin, Tănasă Veronica (Research and Development Institute for Processing and Marketing of the Horticultural Products – Horting, Bucharest, Romania)

ECKLONIA MAXIMA – EFFECT IN ACCRETION OF SYMBIOTES AT HETEROPLASMIC GRAFTING OF SOME WATERMELONS

ECKLONIA MAXIMA – EFECT ÎN CONCREȘTEREA SIMBIONȚILOR LA ALTOIREA HETEROPLASMICĂ A UNOR PEPENI VERZI

The research was conducted to determine the effect of the Ecklonia maxima specie in the symbiotes accretion at the grafting of some watermelons. It was a heteroplasmic grafting. The experimental variants consisted in grafted plants, combinations between cultivars of species Citrullus lanatus, Cucurbita maxima x C. moschata and Lagenaria siceraria. The scions were a Romanian variety, 'Dochita' and three F1 hybrids, 'Baronesa', 'Carol' and 'Sorento'. The rootstocks were two F1 hybrids, 'Cobalt' and 'Emphasis'. The algae extract used contains auxins (11 mg/l) and cytokinins (0.3 mg/l). There were applied two treatments before grafting, foliar on scions and rootstocks, 1 ml/500 ml water and a treatment at grafting, on soil, 5 ml/l water. The control variant was free of hormones extract. There were made determinations, observations and interpretations concerning the algae effect on the symbiotes accretion. The best results on E. maxima extract treatment were obtained on watermelons grafted on 'Cobalt', then watermelons grafted on 'Emphasis'. E. maxima has influenced the symbiotes accretion.

Ipătioaie Dănuț Costel, Munteanu Neculai, Stoleru Vasile, Preda (Voicu) Miia, Cojocaru Alexandru (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

A STUDY ON THE SEED GERMINATION AND PLANTLETS SPRING AT RHUBARB SPECIES (RHEUM RHABARBARUM L.)

STUDIUL ASUPRA GERMINAȚIEI SEMINȚELOR ȘI RĂSĂRII PLANTELOR DE REVENT (RHEUM RHABARBARUM L.)

Seed germination and plantlets spring at rhubarb species were studied in the standard conditions on a peat substrate. Results revealed that the germination rate was of 90%, and spring rate was of 82%. Germination period had 12 days, starting in the 7-th day of experiment, and the spring was done in 10 days.

Dascălu Marius Constantin, Istrate Mihai, Bernardis Roberto (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

STUDIES ON THE BEHAVIOUR OF SOME APPLE VARIETIES CULTIVATED ON THE HORTICOL FARM „V. ADAMACHI” IAȘI

STUDII PRIVIND COMPORTAREA UNOR SOIURI DE MĂR CULTIVATE ÎN FERMA HORTICOLĂ „V. ADAMACHI” IAȘI

Apple is the species which occupy in temperated areas first place as volume of production and surfaces. In the period 2012-2015 were performed biometric measurements on three apple varieties (Idared, Generos and Florina), planted in intensive system from horticultural farm "V. Adamache" Iași.

Istrate Mihai¹, Dascălu Marius Constantin¹, Iacob Florin², Zlati Cristina¹, Arcaleanu Alin¹ (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania, ²S.C. Hortifruct S.R.L. Ciorțești, Iași, Romania)

AGROBIOLOGIC POTENTIAL EVALUATION OF SOME NEW SWEET CHERRY VARIETIES IN ORDER TO AMELIORATE THE ROMANIAN ASSORTMENT

EVALUAREA POTENȚIALULUI AGROBIOLOGIC A UNOR SOIURI NOI DE CIREȘ ÎN SCOPUL AMELIORĂRII SORTIMENTULUI DIN ROMÂNIA

In Romania, until now, it is working on creating new varieties of trees, corresponding to the general objectives such as ripening fruit with different period, to the existing culture; reduced vigour, autofertilizant, high environmental adaptability, disease resistance, etc.). In terms of assortment, that suffered constant renewal through continuous selection of local biotypes valuable and not at least by introducing new abroad varieties. Notable releases include very early-season 'Primulat' and 'Early Bigi' (France); the self-fertile 'Sweet Early' and 'Grace Star' (Italy); the mid-season ripeners 'Giorgia' (Italy) and 'Vera' (Hungary); the mid-to-late 'Kordia', 'Vanda', 'Techlovan' (Czech Republic) and 'Black Star' (Italy); and the late ripeners 'Regina' (Germany) and 'Alex' (Hungary). New cherry varieties studied were noted by productivity and fruit quality: Korda 12.1 t / ha in the fourth year after planting (10.3 g average weight of fruit), Regina 10.2 t / ha, (10.6 g), Karina 10.2 t / ha (9.7 g) and Summit 10.0 t / ha (9.8 g)

Iordache Maria, Dumitru Maria, Coroianu Lenuța (Research-Development Station for Fruit Trees - Growing Băneasa, Bucharest, Romania)

RESEARCH ON MICROSPOROGENESIS AND THE DEVELOPMENT OF MICROSPORES IN SOME ROMANIAN VARIETIES OF PEACHES AND NECTARINES FRUIT TREES

CERCETĂRI PRIVIND MICROSPOROGENEZA ȘI EVOLUȚIA MICROSPORILOR LA UNELE SOIURI ROMANEȘTI DE PIERSIC ȘI NECTARIN

In this study is investigated microsporogenesis and evolution of young microspores both three varieties of Romanian peach Amalia, Congress and Splendid and two Romanian varieties of nectarine Tina and Michaela. Within these species it was considered that at the choice of the varieties to be included the all three ripening periods of the fruits (early, middle and late). The aim of the research consists in the knowledge of the maturing

microspores steps at peaches and nectarines, regarding the development of sporoderma by reaching the final dimensions beginning from young microspores, to mature pollen. Also we had in view the selecting of peaches and nectarines varieties with resistance to very low temperatures in winter. It was studied the effect / impact of negative temperatures in winter on the successive stages of maturation microspores starting with CMP (pollen mother cells) to binucleate mature pollen of flowering buds. From the biological perspective the microsporogenesis was not disturbed by external factors and tetrad and young microspores had a normal aspect for the development phase. The pollen maturation went under normal physiological and undisturbed conditions in the line with the changing weather.

Iurea Elena, Sîrbu Sorina, Corneanu Gelu (Research and Development Station for Fruit Tree Growing, Iași, Romania)
CORALIS - A NEW VARIETY OF CHERRY COMMERCIAL PLANTATIONS
CORALIS – UN NOU SOI DE CIREȘ PENTRU PLANTAȚIILE COMERCIALE

The aim of the paper is to improve the autochthonous cherry assortment with cherry cultivars with late maturation and quality fruits. The cherry assortment from Romania contains many cultivars with average fruit maturation. The current tendency is to create equilibrium, by reducing the weight of the cultivars with average maturation age and by increasing the weight of the extra early and late cultivars. Analyzing the main phenological stages for the two cultivars, it was noticed that the new cherry cultivar Coralis is late both for the beginning of flowering and for fruits maturation. Regarding the average productions on four years (2011-2014), from the statistical point of view, the Coralis cultivar (20,0 kg/tree) recorded positive production differences compared to the witness cultivar (19,8 kg/tree). Under the aspect of fruits weight and equatorial diameter, Coralis (9,1 g and 21,7 mm) recorded significant differences (g) and distinct positive significant differences (mm) compared to the witness cultivar (6,9 g and 21,8 mm).

Roșca Ion (Botanical Garden of the Academy of Sciences of Moldova, Chișinău, Republic of Moldova)
PROSPECTS OF CULTIVATING NEW VARIETIES OF SEA BUCKTHORN AND BLACK CHOKEBERRY
IN THE REPUBLIC OF MOLDOVA
PERSPECTIVE ALE CULTIVĂRII UNOR NOI VARIETĂȚI DE CĂȚINĂ ȘI SCORUȘ NEGRU ÎN
REPUBLICA MOLDOVA

*The morphological and biochemical characteristics of the fruits of sea buckthorn (*Hippophaë rhamnoides* L.) varieties "Regina" and "Elisa" and black chokeberry (*Aronia melanocarpa* (Michx.) Elliot) variety "Alecsandrina" and prospects of these varieties in agriculture and forestry in the Republic of Moldova are described in this article. Broadening the range of cultivated plants is one of the strategic directions of the national economy. The introduction, the research and the cultivation of new species and varieties of valuable plants contribute to solving the problems related to the Food Programme of the Republic of Moldova. Fruits, as well as vegetables and other products of plant and animal origin play an important role in the normal functioning of the human body. For this reason, we propose to use and cultivate some distinctive, non-traditional varieties of sea buckthorn (*Hippophae rhamnoides* L.): "Eliza" and "Regina", and a variety of black chokeberry *Aronia melanocarpa* (Michx) Elliot): "Alecsandrina". Their advantages are the productivity, the high content of vitamins and other biologically active substances, and, moreover, the lack of thorns and the medium plant size, which greatly facilitate harvesting.*

Bosoi Marioara, Miha G., Bosoi Ionica, Stoian Ileana (Research and Development Station for Viticulture and Oenology, Odobești, Romania)
MĂGURA - NEW VARIETY OF VINE FOR RED WINES CREATED AT SCDVV ODOBEȘTI
MĂGURA - SOI NOU PENTRU OBȚINEREA VINURILOR ROȘII DE CALITATE CREAT LA SCDVV
ODOBEȘTI

The studying the long-term of vine germplasm, results in choosing the most valuable genitors and perform a variety of intra- and interspecific hybridisation with obtaining valuable new genotypes, tolerant to pests and diseases and resistance to stressors. Of the many elite hybrid obtained at S.C.D.V.V. Odobești, in 2014 was approved the elite hybrid 18-46 under the name Măgura - variety for quality red wines obtained by hybridization sexual of variety Babească neagră with the hybrid combination (Merlot x Alicante bouschet). The new creation is characterized by middle-sized grapes (175g), small to medium berry (3.3 g), colored in black-blue, rich in anthocyanins in both the skin and core. The average grape production is 4.5 kg /vine or 16.6 tons / ha. It has a good resistance to fungal diseases, particularly to the mildew and powdery mildew. The grapes reach maturity in the epoch VI. The wines obtained are extractive, intensely colored.

Enache Viorica, Tăbăranu Gabriel (Research and Development Station for Vine and Winemaking Bujoru, Romania)
ASSESSING OF THE THERMIC AND HYDRIC RISK IN DEALUL BUJORULUI VINEYARD UNDER
LIKELY CLIMATE CHANGE
EVALUAREA RISCULUI TERMIC ȘI HIDRIC ÎN PODGORIA DEALUL BUJORULUI ÎN CONDIȚII DE
SCHIMBĂRI CLIMATICE PROBABILE

Characterization of a wine year consist of to analyze Agro-meteorological of the growing season of the vine (April to September) and the dormant period (October-March). It has placed particular emphasis on the evolution of hydro-thermal regime from air and soil, analysis is performed during the vegetation and

repose period and limiting the action of these factors have an important role on the production of grapes obtained. The paper presents the agro-meteorological conditions in 2014-2015 periods, with direct effects on vine culture. Were processed and analyzed data specialist on temperature, rainfall and soil water content accessible on various depths (0-20 cm, 20-40 cm, 40-60cm, 60-80cm, 80-100cm and 0-100 cm). In assessing the potential agro-climatic resources available were considered data recorded at the weather Tg Bujor station (AGROEXPERT system). The trend of rains characteristics is the presence of torrential rains increasing rainfall number greater than 0,1mm and less than 5,0mm and decreases the number of leverageable rains (> 5 mm). Knowledge of the agro-meteorological characteristic is required for establish trend of thermic and hydric risk on the culture of the vine. By monitoring and surveillance phenomena risk / temperature and water stress can apply the most effective measures to prevent and mitigate negative effects on the culture of the vine.

Istrate Andrei, Rotaru Liliana (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)
RESULTS ABOUT THE IMPLEMENTATION OF THE FRACTAL ANALYSIS FOR THE VINE VARIETIES
DESCENDANTS OF BĂBEASCĂ NEAGRĂ
REZULTATE PRIVIND APLICAREA ANALIZEI FRACTALE LA SOIURILE DE VIȚĂ DE VIE
DESCENDENTE DIN BĂBEASCĂ NEAGRĂ

In order to obtain new vine varieties, the vine breeders were focused on using the ancestral and productive varieties that are well adapted to the ecopedoclimatic conditions of our vineyards. Thus, for the Băbească neagră variety case it result the following Romanian varieties: Băbească gri, Codană, Arcaș, Balada, Cristina and Mamaia to which was applied the method of fractal analysis to determine the degree of similarity. It resulted that the fractal dimension closest to the parent variety was at Mamaia variety of 1.1254, being the largest value, and the farthest was of 1.0067 at Balada variety.

Rotaru Liliana, Colibaba Lucia Cintia (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)
INFLUENCE OF GROWTH REGULATOR ASFAC BCO-4[®] IN CHASSELAS DORÉ VARIETY
INFLUENȚA APLICĂRII BIOSTIMULATORULUI ASFAC BCO-4[®] LA SOIUL DE VIȚĂ DE VIE
CHASSELAS DORÉ

The quality of table grapes is the result of combining superior physical properties (firmness, structure, weight) and the chemical composition and their functional properties, such as their main products of metabolism (sugars and organic acids) and secondary metabolites represented mainly by phenolic and aromatic compounds, and the ratio in which they are found in the fruit. Growth biostimulators are substances, which applied in small quantities and at the optimum time, increase grape production due to berry elongation, increase the sugar content of grapes and help in maintaining a good aspect. In countries with a tradition in producing table grapes, treatments with stimulators are often used due to a higher production and commercial aspect of the treated grapes. The application of treatment with ASFAC BCO-4[®] resulted in a larger production (6.825 kg compared to 5.67 kg). The commercial production percentage has also been improved (83% versus 75% in the variant without biostimulator treatment

Ciubucă Aurel, Postolache Elena, Birliga N., Bora F.D. (Research and Development Station for Vine and Winemaking Bujoru, Romania)
THE CONTROLLED TECHNOLOGY FOR OBTAINING AROMATIC QUALITY WINE FROM MUSCAT
OTTONEL VARIETY AT THE RESEARCH AND DEVELOPMENT STATION FOR VINE AND
WINEMAKING BUJORU
TEHNOLOGIE CONTROLATĂ DE OBȚINERE A VINULUI AROMAT DE CALITATE DIN SOIUL MUSCAT
OTTONEL LA SCDVV BUJORU

To implement the control technology it was used the technology developed infrastructure segment, namely: the harvesting of grapes in plastic crates, the transportation of grapes using the laboratory equipment ,the electronic quantitative and qualitative evaluation to determining the sugar content and total acidity; the sorting and selection of grapes; the removing of grapes from cluster and the crushing of grapes with a mini smashing instrument made of stainless steel; the maceration before the fermentation made in small capacity pneumatic press for 12 hours; the controlled fermentation with specific enzymes in 500 L tanks with controlled-temperature cooling jackets. The must (unfermented wine) was obtained by stopping the fermentation process when the desired alcohol content was achieved, preserving a certain quantity of sugar specific for this type of wine. For the current research for producing this aromatic wine with this type of flavour, enzymatic extracted flavours from the grapes were used in the before fermentation stage during the cold maceration. The alcoholic fermentation was carried out in the presence of selected yeasts and nutrients with a complex composition.

Codreanu Maria¹, Cotea V. Valeriu², Niculaua Marius³, Luchian Camelia Elena², Colibaba Cintia Lucia²
(¹The County Chamber of Agricultural Iași, Romania, ²University of Agricultural Sciences and Veterinary Medicine of Iași, Romania, ³Research Center for Oenology of Romanian Academy - Iași Branch)
THE EFFECT OF CARBON BASED MATERIALS TREATMENTS ON CABERNET SAUVIGNON WINE
COMPOSITION

EFFECTUL TRATAMENTELOR CU MATERIALE PE BAZĂ DE CARBON ASUPRA COMPOZIȚIEI VINULUI CABERNET SAUVIGNON

The aim of this paper is to investigate new possibilities of using carbon based materials in winemaking technology. In this study, Cabernet Sauvignon wine was treated with following materials: graphene (G), graphene oxide (GO) and carbon nanotubes (CNTs). The total polyphenols content expressed as mg of gallic acid showed that carbon based materials reduced the amount of phenols in wine from 5623.60 mg/L to 5053.89 mg/L. Major colour and hue differences for Cabernet Sauvignon wines are found in the samples treated with graphene and carbon nanotubese. HPLC determination of organic acid content revealed that carbon based materials treatments contributed at decreasing the amount of malic acid in wine.

Colibaba Lucia Cintia¹, Rotaru Liliana¹, Cozma Sebastian² (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania, ²Crama Garboiu, Vrancea, Romania)

STUDIES OF SOME WINES OBTAINED IN THE AMPELOGRAPHICAL COLLECTION OF UASVM IAȘI DURING 2013-2015

STUDII ASUPRA UNOR VINURI OBȚINUTE ÎN COLECȚIA AMPELOGRAFICĂ USAMV IAȘI ÎN PERIOADA 2013-2015

Romania, as many other viticultural countries of the world, is confronted with many climatic imbalances, who are making their presence, felt more and more over the past decade. The influence of the climatic factors on the grape production quality is deeply reflected in the wine quality and its technological process. The aim of this article is to objectively analyse the climatic influences that can affect the wines' quality, with a strong focus on wines obtained in the North-East of Romania, Iași vineyard. Three climatic parameters were taken into study: temperature, insolation, rainfall from the studied vineyard. Yearly, six wine samples from different grape varieties were collected and, after three years (2013, 2014 and 2015), they were analysed. The results can be used to build a model solution for wine-making and vine culture in the new climatic conditions. Constant quality of Romanian wines is the most important request of the international wine market.

Filimon Vasile Răzvan¹, Băetu Marius, Nechita Ancuța¹, Filimon Roxana¹, Niculaua Marius², Rotaru Liliana³ (¹Research-Development Station for Viticulture and Winemaking Iași, Romania, ²Research Center for Oenology of Romanian Academy - Iași Branch, ³University of Agricultural Sciences and Veterinary Medicine Iași, Romania)

ASSESSMENT OF 5-HYDROXYMETHYLFURFURAL CONTENT IN DRY AND SWEETENED WHITE WINES

EVALUAREA CONȚINUTULUI DE 5- HIDROXIMETILFURFURAL AL UNOR VINURI ALBE SECI ȘI ÎNDULCITE

5-Hydroxymethylfurfural (HMF) is a water-soluble compound resulting from heating monosaccharides in acidic conditions (e.g. wine pasteurisation), potentially carcinogenic to humans. White wines obtained through classical winemaking technologies and subsequently pasteurised were assessed for their HMF content by UV-vis spectrometry. Different volumes of oversulfited and concentrated musts were added to increase the concentration of sugars in wines (10 to 50 g/L). Samples were subjected to heat treatment (45-100°C) in time intervals correlated with temperature (<120 min). Pasteurised dry wines showed low HMF levels of 1.09-3.14 mg/L. HMF content of traditionally "mulled" wine was the highest in samples sweetened to 100 g/L sugars boiled for 10 minutes (>181mg/L). The HMF content in dry and sweetened white wines was correlated with high sugar content, high acidity, high temperature and a long heating time, normal pasteurisation (75°C, 1-2 min) leading to lower HMF amounts.

Luchian Camelia Elena¹, Colibaba Cintia¹, Cotea V. Valeriu¹, Tucaliuc Roxana¹, Niculaua Marius² (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania, ²Oenology Research Center – Iași Branch of the Romanian Academy)

STUDY OF ANTIOXIDANT ACTIVITY FROM ROMANIAN AND CYPRIOT WINES

STUDIUL ACTIVITĂȚII ANTIOXIDANTE A UNOR VINURI ROMĂNEȘTI ȘI CIPRIOTE

Several studies have demonstrated that antioxidants present in foods can inhibit cancer development through their influence on the molecular level at the stage of initiation, propagation and progression. Among these compounds have been studied in recent years, phenolic compounds, bioactive constituents of plants. Flavonols, flavones, anthocyanidins and flavanols are found in significant quantities in green tea, red wine and black. The work involves the determination of antioxidant activity, determined by the presence of these compounds, from Romanian and Cypriot wines. There are many methods for monitoring and compare the antioxidant activity of food. In this case, the antioxidant activity determination was carried out by the DPPH method. The method chosen is a fast, simple and cheap and requires the use of 2,2-Diphenyl-1-picrylhydrazyl (DPPH) radical.

Nistor Alina-Mihaela¹, Cotea V. Valeriu¹, Luchian Camelia Elena¹, Niculaua Marius², Cotan Ștefan-Dragoș¹ (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania, ²Oenology Research Center – Iași Branch of the Romanian Academy)

METHODS FOR ASSESSING THE MYCOTOXINS POTENTIAL IN OENOLOGY INDUSTRY
METODE DE EVALUARE A POTENȚIALULUI ÎN MICOTOXINE DIN INDUSTRIA OENOLOGICĂ

Recent studies have confirmed that mycotoxins such as aflatoxins are present in foods and are responsible for most cases of liver cancer and modification of human DNA. These forms on foods where conditions of handling, transportation and storage promote mold growth, such as high temperature and humidity. There are four types of aflatoxins in food isolates (B1, B2, G1, G2) with B1 the most toxic. The study aims to assess methods of analysis for these important substances in human health and quality of wine. The maximum authorized concentration of this class of mycotoxins is 2 ppb. The determination of aflatoxins in the wine can be achieved by high performance liquid chromatography, thin layer chromatography, gas chromatography and ELISA. The purpose of this work is to stimulate risk awareness to the improper selection of harvest quality and the need to invest in the product safety.

Pîrcălabu Liliana, Porumb Roxana, Ion Marian, Tudor Georgeta (Research Institute for Viticulture and Oenology Valea Călugărească, Romania)

THE ANTIOXIDANT CAPACITY OF NEGRU AROMAT WINES ENRICHED WITH ARONIA MACERATE
CAPACITATEA ANTIOXIDANTĂ A VINULUI DE NEGRU AROMAT ÎMBOGĂȚIT CU MACERAT DE ARONIA

This study was aimed to identify a source of antioxidants, compatible with the composition of the wine in order to be used for obtaining an antioxidant capacity of wines with a value of 4000 $\mu\text{mol Trolox}/150\text{ ml}$ wine. The optimal dose of the macerate was established on the basis of the relationship between the dose of the macerate and total antioxidant capacity of the wine. For the enriched wine the polyphenolic and sensorial profile was established. The macerates of Aronia were made in wine and in synthetic wine solution. The maceration in wine, at a rate of 7, 15 and 25% was performed at room temperature. The total antioxidant capacity of wines was estimated using the TEAC method. The relationship between the dose of added macerate and total antioxidant capacity of the wine was linear and statistically. The lower dose 7% of Aronia macerate didn't modified the sensory profile and polyphenolic content of wines, while average doses of 15, 25% had improved the wines quality.

Șerdinescu Adrian, Fîciu Lidia, Enache Laura (Research Institute for Viticulture and Oenology Valea Călugărească, Romania)

OPTIMISATION OF POLYPHENOLIC COMPOUNDS EXTRACTION FROM RED GRAPE POMACE
OPTIMIZAREA EXTRAȚIEI COMPUȘILOR POLIFENOLICI DIN TESCOVINA STRUGURILOR NEGRU

Grape pomace represents the main by-product of wine industry containing polyphenolic compounds with antioxidant and antibacterial activity. The aim of our study was to optimize their extraction using different organic solvents with different concentrations and different temperatures of extraction. The material used for extraction was grape pomace from three red varieties. As solvents, were used aqueous solutions from: ethanol, citric acid, acetone, sodium sulfite and glycerol, with different concentrations. The experimented temperatures for extraction were: 30, 60 and 90°C and the time of extraction was two hours for all the solvents. The best extraction was registered in case of acetone and ethanol. The nature of solvents influenced the proportion between the different classes of polyphenolic compounds extracted. The increasing temperature of the extraction had a positive effect on the extraction in case of all the solvents. Also, the increase of solvents concentration had a positive effect, up to a certain limit.

Brînză Maria, Draghia Lucia, Chelariu Elena Liliana, Anton Veronica (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE INFLUENCE OF LEAD ON THE GROWTH AND FLOWERING OF *HYACINTHUS ORIENTALIS* SPECIE
INFLUENȚA PLUMBULUI ASUPRA CREȘTERII ȘI ÎNFLORIRII LA SPECIA *HYACINTHUS ORIENTALIS*

*Experiment was conducted to investigate the growth and and flowering at *Hyacinthus orientale* exposed to lead toxicity. The experience was organized in five variants, each with three repetitions, and each repetition having 10 bulbs. The experience was organized in five variants, the watering process of the substrate was performed using distilled water for the control variant and $\text{Pb}(\text{NO}_3)_2$ solutions for the other variants. The influence of lead on the plant growth and development has been assessed by plant height, number of flowers and the photosynthetic pigments content. The growth in height and capacity of plant flowering were inhibited by applying the lead, regardless of the dosage used.*

Chelariu Elena Liliana, Draghia Lucia, Brînză Maria (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

RESEARCH ON BEHAVIOUR OF ORNAMENTAL SPECIE *PENNISETUM GLAUCUM* IN CROPPING CONDITIONS FROM IAȘI, ROMANIA
CERCETĂRI PRIVIND COMPORTAREA SPECIEI ORNAMENTALE *PENNISETUM GLAUCUM* ÎN CONDIȚIILE DE CULTURĂ DIN IAȘI, ROMÂNIA

**Pennisetum glaucum* is from Poaceae family and it is classified in category of ornamental grasses. The purpose of this research is to identify a suitable substrate for producing *Pennisetum glaucum* 'Purple*

Baron' seedlings, as well as monitoring of its behaviour in cropping conditions from Iași, Romania. The experience was organized in four different substrates: V₁ – garden soil; V₂ – 1 part peat + 1 part garden soil; V₃ – 2 parts peat + 1 part garden soil; V₄ – jiffy pots. The seedlings obtained were grown in the same field conditions. The best results regarding seedlings quality were obtained for variant V₃ and culture plants showed a very good adaptation to the pedoclimatic conditions in Iasi, Romania.

Ciobanu (Moldovan) Ioana, Cantor Maria, Baia Monica, Pui Angela (University of Agricultural Sciences and Veterinary Medicine of Cluj Napoca, Romania)

RESULTS REGARDING PHENOTYPIC CORRELATIONS BETWEEN THE MORPHO-DECORATIVE CHARACTERISTICS OF SOME *DAHLIA VARIABILIS* CACTUS CULTIVARS
REZULTATE PRIVIND CORELAȚIILE FENOTIPICE ÎNTRE CARACTERELE MORFO-DECORATIVE LA UNELE SOIURI DE *DAHLIA VARIABILIS* TIP CACTUS

Through the research conducted on seven *Dahlia variabilis* cultivars with cactus type flower: 'Kennemerland', 'Tsuki Yori No Sisha', 'Hayley Jane', 'Purple Gem', 'Star Favourite', 'Park Princess', 'Frigoulet', it was analyzed the influence of planting material (forced tuberous roots and non-forced tuberous roots) on some morpho-decorative characteristics. The biometrical observations regarding the morpho-decorative characteristics consisted in assessing: average number of shoots per plant, the average height of flower stems, the average diameter of inflorescence, the average number of inflorescence per plant and the average number of ligulate florets per inflorescence. Between these characteristics there were made some phenotypic correlations. Following the interpretation of the results regarding the biometrical determinations using Duncan test, it is clear that by forcing the tuberous roots the results obtained are superior for the analyzed characteristics compared to the roots that were not forced. The most positive results for the correlation coefficient, respectively significant and significantly distinct were registered for the variants of non-forced roots.

Draghia Lucia, Cojocariu Mirela, Chelariu Elena Liliana, Brînză Maria (University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)

RESEARCH ON BEHAVIOUR OF SOME LOCAL POPULATIONS OF *ASTER NOVI-BELGII* IN DIFFERENT GROWING CONDITIONS
CERCETĂRI PRIVIND COMPORTAREA UNOR POPULAȚII LOCALE DE *ASTER NOVI-BELGII* ÎN DIFERITE CONDIȚII DE CULTURĂ

Study regarding *Aster novi belgii* plants reaction at irrigation was done at the UASVM from Iași, Romania, using four local populations from traditional garden in NE area of Romania, respectively Suceava County and Botoșani County. From the combination of two experimental factors (local population and irrigation) resulted eight experimental variants: V₁-Suceava population non-irrigated; V₂-Suceava population irrigated; V₃-Margeea (1) population non-irrigated; V₄-Margeea (1) population irrigated; V₅-Margeea (2) population non-irrigated; V₆-Margeea (2) population irrigated; V₇-Darabani population non-irrigated; V₈-Darabani population irrigated. Measurements carried out have shown favourable response of plants for irrigation. The total content of photosynthetic pigments recorded higher values to plants where irrigation was applied. Although all eight populations of *A. novi-belgii* studied, by irrigation, some ornamental characteristics of plants have been favored, but the proportions were different.

Sfeclă Irina, Dica Ana (Botanical Garden of the Academy of Sciences of Moldova, Chișinău, Republic of Moldova)
ASPECTS OF MULTIPLICATION TO REPRESENTATIVES OF THE GENUS *KNIPHOFIA* MOENCH.
ASPECTE DE MULTIPLICARE A REPREZENTANȚILOR GENULUI *KNIPHOFIA* MOENCH.

Kniphofia genus includes about 75 species originating from South Africa and Madagascar. These plants present rhizomes with well-developed roots. The stem is simple, erect and cylindrical shaped. Leaves are linear, that form a rosette at the base of the plant. The flowers are grouped in terminal, compact spikes. The fruit is a capsule. This article presents results on the study of seeds productivity, quality of seeds and vegetative multiplication coefficient of 5 species of torch lily: *Kniphofia uvaria* (L.) Hook., *K. ensifolia* Bak., *K. tukii* Bak., *K. nelsonii* Mast, *K. sarmentosa* (Andr.) Kunth. As object of study served the existing exemplary in the Botanical Garden, which are about 12-15 years old. As a result of investigations carried out we can say that the species studied, in climatic conditions of Republic of Moldova, can be multiplied both by generative as well as vegetative way.

Sîrbu Tatiana, Manole Svetlana, Gorobei Tatiana (Botanical Garden of the Academy of Sciences of Moldova, Chișinău, Republic of Moldova)

NEW VARIETIES OF FLOWER PLANTS OF BOTANICAL GARDEN (I) OF THE ASM
SOIURI NOI DE PLANTE FLORICOLE ALE GRĂDINII BOTANICE (I) A AȘM

The work reflects the latest achievements in improving flower plants in the Botanical Garden of the Academy of Sciences of Moldova. In the period 2006-2016 were selected and submitted for patenting six varieties of ornamental plants: *Chrysanthemum* 'Zephyr', 'Făclia'; *Hemerocallis hybrida* 'Zamfira', 'Melancholy'; *Paeonia lactiflora* 'Traian' and 'Ruxandra'. The authors used traditional methods: intraspecific hybridization directed, free

poleizărilor result, inducing mutations. Decorative indices obtained possesses valuable varieties are prolific and resistant to unfavorable environmental factors, to diseases and pathogens. They can be successfully used in the production of cut flowers, floral art, creating decoration in parks and gardens.

Diaconu Andreea, Țenu Ioan, Cârlescu Petru, Vlahidis Virgil (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE AIR FLOW INFLUENCE ON THE UNIFORMITY OF DISPERSION FOR A VINEYARD SPRAYING MACHINE
INFLUENȚA DEBITULUI DE AER ASUPRA UNIFORMITĂȚII DE DISPERSIE PENTRU O MAȘINĂ DE STROPIT ÎN PLANTAȚII DE VIȚĂ DE VIE

Control of diseases and pests from vineyards is one of the most important technological links, because it makes the health of the culture, i.e. production of grapes. These treatments are applied with special machines, equipped with fans that can control drift droplets of phytosanitary substance, transporting them on target. For this reason, the determination of dispersion uniformity of the spray nozzles mounted on the machine is very important. In order to determine the influence of TARAL 200 PITON TURBO spraying machine fan airflow on the LECHLER's IDK 120-02 air absorption nozzles uniformity of dispersion, it was designed and built a vertical test stand with 18 troughs for collecting the substance from different heights. Analyzing the results obtained under laboratory conditions, it was found that the spraying machine fan air flow influences the uniformity of dispersion of the air absorption nozzles. The best uniformity has been achieved at the speed of 800 rpm, being 88.60% for the pressure of 0.4 MPa.

Tăbăranu Gabriel, Enache Viorica (Research and Development Station for Vine and Winemaking Bujoru, Romania)

RESEARCHES ON OF GRAPE MOTH THE EVOLUTION (*LOBESIA BOTRANA* - DEN ET SCHIFF) OF DEALUL BUJORULUI THE VINEYARD, IN THE CONTEXT OF CURRENT CLIMATE CHANGE
CERCETARI PRIVIND EVOLUȚIA MOLIEI STRUGURILOR (*LOBESIA BOTRANA* – DEN ET SCHIFF) ÎN PLANTAȚIILE VITICOLE DIN PODGORIA DEALUL BUJORULUI, ÎN CONTEXTUL ACTUALELOR SCHIMBĂRI CLIMATICE

*The paper presents analysis of research conducted at The Research and Development for Winegrowing and Winemaking in the period 2005-2015 Bujoru climate factors (temperature, precipitation, humidity, etc.) that influence the biology and evolution of grape moth (*Lobesia botrana* - Den et Schiff) in plantations vineyards south of Moldova. Lately there was a deviation of climatic factors on the annual average (high temperature, frequency absolute minimum temperature below the freezing of the vine, increased the frequency of droughts, desertification) that can cause changes in the biological and behavioral the principal harmful vine vineyard Dealul Bujorului (grape moth), with consequences difficult to assess the integrity of the ecosystem vineyard.*

Tălmăciu Mihai, Mocanu Ionela, Herea Monica, Tălmăciu Nela (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

CONTRIBUTIONS TO KNOWLEDGE THE STRUCTURE, DYNAMICS AND ABUNDANCE OF SPECIES OF COLLECTED BEETLES FROM WHEAT CROPS
CONTRIBUȚII LA CUNOAȘTEREA STRUCTURII, DINAMICII ȘI ABUNDENȚEI SPECIILOR DE COLEOPTERE COLECTATE DIN CULTURILE DE GRĂU

*In the present conditions, increased the production of cereals and especially of production wheat is possible only through an intensive culture, by applying the modern technology to work in accordance with the requirements of cultivated varieties, irrigation, prevention and integrated control of diseases and pest, weed through the mechanization, to ensure on time execution of work under optimal conditions. The research on the knowledge of beetles species, dynamics and their abundance were made using soil traps type Barber, in three experimental stationary with wheat. The observations were made in 2015, the material collecting was done from May to July. The harvesting of the material was made at intervals of 14 days, all being done in a number of four harvests. The species most frequently collected were: *Pentodromus idiota*, *Epicometis hirta*, *Opatrum sabulosum*, *Phyllotreta atra*, *Phyllotreta nemorum* and *Tanymecus dilaticollis*.*

Călin Maria¹, Cristea Tina Oana¹, Ambăruș Silvița¹, Brezeanu Creola¹, Brezeanu Petre Marian¹, Prisecaru Maria², Șova George Florin¹, Popovici Claudiu Petru³ (¹Vegetable Research and Development Station Bacău, Romania, ²University "Vasile Alecsandri" Bacău, Romania, ³University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE STUDY IN THE SEEDLING STAGE OF TOMATO VARIETIES CULTIVATED IN ORGANIC AGRICULTURE
STUDIUL ÎN FAZA DE RĂSAD A UNOR SOIURI DE TOMATE CULTIVATE ÎN AGRICULTURA ECOLOGICĂ

The study was performed in Vegetable Research-Development Station Bacău - Romania, during 2015 – 2016 in order to evaluate the tomato varieties resistance at soil-borne diseases attack in seedling stage. The following tomatoes cultivars were cultivated in protected area - variants: V2 – Ghittia, V3 – Monymaker, V4 – Ruxandra, V6 – Inima de bou, V8 – Bobalna, V10 – LMV, V12 – TFC had a degree attack (GA%) below 1.5 %. The tomatoes cultivars - variants: V1 - Brandywine black, V2 - Brandywine black real, V3 - Brandywine black red, V5 – Delicios, V6 - Delicios de Podis, V8 - Indigo „Sun ”, V9 - Omar’s Lebanese, V10 - Pantene Romanesco, V11 – Thesaloniki, V14 – Vilma were tolerant at the soil borne diseases.

3rd SECTION

LANDSCAPE ARCHITECTURE

ORNAMENTAL ARBORICULTURE, SUSTAINABLE DEVELOPMENT IN LANDSCAPE ARCHITECTURE, HISTORICAL EVOLUTION OF THE LANDSCAPE, LANDSCAPE ESTHETICS, PHILOSOPHY AND PSYCHOLOGY, ENVIRONMENT MANAGEMENT IN LANDSCAPE ARCHITECTURE, LANDSCAPE ARCHITECTURE IN THE URBAN RESTORATION, REHABILITATION AND CONVERSION, LANDSCAPE COMPOSITION AND DESIGN

Floriculture Lab., second floor

Chairmen:

Prof. dr. Lucia **DRAGHIA**
Prof. dr. Doina Mira **DASCĂLU**
Conf. dr. Elena Liliana **CHELARIU**

Secretariate:

Asist. dr. Codrina **GRECU**
Asist. dr. Roxana **PAȘCU**



ORAL PRESENTATIONS

Tripa Dorina (SC AGRISORG SRL, Sacadat, Bihor, Romania)
MACHINERY AND EQUIPMENT USED IN LANDSCAPING AND HORTICULTURE
MAȘINI ȘI UTILAJE FOLOSIE ÎN PEISAGISTICĂ ȘI HORTICULTURĂ

Dascălu Doina Mira¹, Dascălu Vlad² (¹University of Agricultural Sciences and Veterinary Medicine Iași, Romania, ²Technical College "Gh. Asachi" Iași, Romania)
TRENDS IN SUSTAINABLE LANDSCAPING OVER THE LAST DECADES
TENDINȚE PEISAGISTICE SUSTENABILE DIN ULTIMELE DECENII

Currently, in the landscaping domain, the focus is on creating an unpolluted environmental areas, which can offer facilities for collective forms of contact, recreation and leisure. These ambiental creations will be able to effectively solve the "4 basic requirements" of human settlements: healthy life, balanced work, leisure and communication. The accelerated rhythm of work and overwork tendencies have changed the structure of human leisure time, landscaping process being forced to adapt to this phenomenon, offering sustainable varied and original design of creations. The implementation of these sustainable projects, in last decades, was able to effectively combat the urban and territorial congestion, overcrowding and pollution.

Grecu Codrina¹, Cojocaru Mirela¹, Purcaru Andrei² (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania, ²"Gh. Asachi" Technical University Iași, Romania)
EVOLUTION OF EARTH CONSTRUCTION METHODS
EVOLUȚIA METODELOR DE CONSTRUCȚIE CU PĂMÂNT

Human kind history bring testimonies about using earth or clay as building materials on territories of ancient civilisations. According to some populations tradition of earth building, architects and construction engineers of our days have used this common material for modern solutions of buildings or in organic composition of new materials with improved properties. The paper illustrate evolution of earth building methods and also highlighting modern constructive and architectural solutions involving this material.

Grecu Codrina¹, Cojocaru Mirela¹, Pașcu (Negrea) Roxana¹, Purcaru Andrei² (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Roamnia, ²"Gh. Asachi" Technical University Iași, Romania)
LANDSCAPE PLANNING OF HOSPITAL CONSTRUCTION RELATED GREEN AREAS - CURRENT TRENDS
AMENAJAREA PEISAGERĂ A SPAȚIILOR VERZI AFERENTE CONSTRUCȚIILOR SPITALICEȘTI – TENDINȚE ACTUALE

Nature has been venerated since ancient times for its beneficial effects on human health from a holistic point of view. With the progress of science and technology, man has forgotten to look for healing in nature, sanitary facilities evolving in to a real industrial plant for health, the rigour of medical procedures and specialty of pharmaceutical synthesis products exclude almost brutal in most cases anything can we called healing effect of nature through what she gives us. Studies on the subject have demonstrated curative role of landscape and gave a new direction on designing medical centers. According with that recently

appeared so-called „therapeutic gardens” and „healing gardens”. This paper illustrates this tendency of returning to the therapeutic effects of nature and compares the achievements of international medical centers with the first steps taken in the same direction in Romania.

Ștefan Diana (“Ion Mincu” University of Architecture and Urbanism, Bucharest, Romania)
THE SPACE OF HUMAN NEEDS
SPAȚIUL NEVOILOR UMANE

Considering man the center of the universe, the only reference system, and all aspects of life grows with it, nothing is static. Starting from this premise the study aims to answer this question: What should we consider the act of conception of space given the characteristics of perception? The study argument is constructed mainly from a psychological point of view through perception characteristics and its affective factors, and never the less through the hierarchical model of human needs that Maslow developed. The scientific literature examines the qualities of space that make it close to the individual and the space features compliant with the pyramid of human needs. These can be summarized in five major generic categories image, readability, mobility, adaptability, and complexity. By joining and combining studies underpinning this paper the author seeks to develop a set of steps necessary in the conception act.

Cojocariu Mirela, Draghia Lucia, Chelariu Elena Liliana, Brînză Maria (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)
RESEARCH ON IMPORTANCE OF FLOWER PLANTS' SUSTAINABILITY IN LANDSCAPING
CERCETĂRI PRIVIND IMPORTANȚA PLANTELOR FLORICOLE ÎN SUSTENABILITATEA AMENAJĂRILOR PEISAGERE

Roșca Aurelia Elena, Draghia Lucia, Brînză Maria, Chelariu Elena Liliana (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)
STUDIES REGARDING THE INFLUENCE OF THE PLANTING TIMES IN THE GROWTH AND DEVELOPMENT OF *ALLIUM* 'PURPLE RAIN'
STUDII PRIVIND INFLUENȚA EPOCILOR DE PLANTARE ASUPRA CREȘTERII ȘI DEZVOLTĂRII PLANTELOR DE *ALLIUM* 'PURPLE RAIN'

This paper presents some results regarding the influence of different bulbs planting times of the Allium “Purple Rain” (ornamental onion cultivar). The bulbs were planted in three different times: August 2015 (V₁); November 2015 (V₂) and March 2016 (V₃). The plants were studied during the 2016 season. They were evaluated regarding the morpho-decorative characters, like leaves length, flowering stem height, inflorescence diameter and regarding the phenological aspects, like emergence time and flowering period. The aim of this study was to identify the planting time witch favors the growth and development suitable for the studied cultivar. Significant differences between the three variants were registered in case of all the morphological and phenological studied characters. The most favorable planting times were August and November. The spring planting time (March), registered the worse influences on the growing and development of Allium “Purple Rain” plants.

Jankauskaite-Jureviciene Laura¹, Mlinkauskiene Ausra¹, Vilma Stanaitiene² (¹Kaunas University of Technology, Lithuania, ²University of Applied Sciences, Lithuania)
LITHUANIAN RURAL LANDSCAPE CHANGE TRENDS AND CONSEQUENCES AFTER THE RESTORATION OF THE INDEPENDENCE
TENDINȚELE DE SCHIMBARE DIN PEISAJUL RURAL LITUANIAN ȘI CONSECINȚELE LOR DUPĂ OBȚINEREA INDEPENDENȚEI

Lithuanian rural landscape changes, during the time, were closely related to political, economical, farming types and other conditions changes, which had a direct impact on the transformation of landscape structures and elements. Within a few centuries, Lithuania has gone through many land reforms. All these periods formed different anthropogenic elements in the natural environment of Lithuanian rural landscape, which gradually made changes in the people's way of thinking, living and working conditions. This article analyses the two last period of land reforms, which had the largest influence on Lithuanian rural landscape changes. During the Soviet period in Lithuania territory dominated kolkhozes - Soviet agricultural companies, which were based on the idea of collective farming. Creation of large industrial farms in a rural, mostly natural environment, has made major changes. After the restoration of Lithuania's independence, farming conditions changed. Large complexes of the collective farms were replaced by private complexes, which took on the architectural expression with individual elements, having a different impact on the rural landscape.



POSTER PRESENTATIONS

Bernardis Roberto Renato¹, Sandu Tatiana¹, Dascălu Marius¹, Poșta Daniela², Gruia Marius³, Pașcu Roxana (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²University of Agricultural Sciences and Veterinary Medicine of Banat, Timișoara, ³University of Craiova, Faculty of Horticulture, Romania)

OBSERVATION ON THE PHENOLOGY OF *COTONEASTER HORIZONTALIS* SPECIES IN IAȘI REGION CONDITIONS
OBSERVAȚII FENOLOGICE ASUPRA SPECIEI *COTONEASTER HORIZONTALIS* ÎN CONDIȚIILE JUDEȚULUI IAȘI

From the multitude of dendrological species, Cotoneaster genus, with all the species included, is particularly important in garden design, especially that the conditions of our country are generally favorable and very favorable for the growth of these species. The purpose of the paper is to highlight the ornamental potential of the most popular specie of Cotoneaster genus, respectively Cotoneaster horizontalis that was studied in the Iasi region conditions. During the growing season there were made observations and determinations concerning shoots annual growth rate, the growth rhythm of leaves and the number of flowers on the stems.

Chelariu Elena Liliana, Draghia Lucia, Brînză Maria, Cojocariu Mirela (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

STUDIES ON THE BEHAVIOUR OF SOME VARIETIES OF ROSES UNDER CULTURE CONDITIONS IN IAȘI, ROMANIA
STUDII PRIVIND COMPORTAREA UNOR SOIURI DE TRANDAFIRI ÎN CONDIȚIILE DE CULTURĂ DIN IAȘI, ROMANIA

The aim of the current paper is to analyse the behaviour of some varieties of roses in pedoclimatic conditions from Iași County, Romania. Observations and determinations were carried out in cropping conditions from roses collection of Floriculture discipline from UASVM Iași, Romania. At the end of realised research was observed that in cropping conditions from NE area of Romania, roses varieties had a very good adaptation. Plants are decorative from spring till the autumn, being suitable to be utilized in different landscape design types.

Cojocaru Mirela, Chelariu Elena Liliana, Dascălu Doina Mira, Grecu Codrina (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

VERTICAL GARDENS IN THE CLIMATIC CONDITIONS FROM IAȘI, ROMANIA
GRĂDINILE VERTICALE ÎN CONDIȚIILE CLIMATICE DIN IAȘI, ROMANIA

Pașcu Roxana, Zlati Cristina, Bernardis Roberto Renato (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE GREEN ROOF - AN AESTHETIC SOLUTION FOR BUILDING REHABILITATION
ACOPERIȘUL VERDE – SOLUȚIE ESTETICĂ DE REABILITARE A CLĂDIRILOR

In recent decades, the green roof is a modern system and environmentally friendly of coating buildings, partially or completely, with soil and vegetation. This particular type of landscaping allows vegetation to grow harmoniously upon considerable areas which is why architects, builders and urban planners around the world have begun to turn to green roofs not for aesthetic reasons, a concern rather secondary, but for their practical nature and the ability to alleviate environmental extremes specific to conventional roofs. Therefore this paper aims to present some of the most suitable solutions for the rehabilitation of buildings taking into account first and foremost the aesthetic considerations offered by this type of landscaping. If in the past green roofs resulted from the construction of certain types of housing, such as huts, terraces or the need to camouflage settlements, today they represent one of the most easy to implement and more aesthetic solutions for regenerating the urban centers

Sandu Tatiana¹, Trofin Alina-Elena¹, Bernardis Roberto Renato¹, Pantazi Viorica² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²S.C. PUBLIC SERVICES IAȘI S.A.)

ISSUES CONCERNING ANTHROPIC INFLUENCE EXERTED ON STREET ALIGNMENTS IN IAȘI
ASPECTE PRIVIND INFLUENȚA ANTROPICĂ EXERCITATĂ ASUPRA ALINIAMENTELOR STRADALE DIN MUNICIPIUL IAȘI

Anthropic interventions made in Iasi street alignments in recent years, even by those who manage these green spaces, often rise questions about their intentions. By this analysis is intended to highlight certain aspects of inappropriate human actions impact on woody vegetation that provides decoration of areas vital for any city, for example the traffic arteries. Observations were made on a batch of 178 alignment trees on Carol boulevard and continuing on Ghica Voda alley from Iasi, during 2014 ÷ 2016, to establish their health status and decorating value, with the final aim to develop an overall long term program (on minimum 10 years) providing necessary interventions in the existing alignments, the distribution in time and space of these interventions, to avoid late or erroneous measures, as well as proposals for plantings.

4th SECTION

ENGINEERING AND ENVIRONMENTAL PROTECTION

CLIMATOLOGY AND AGRO METEOROLOGY, ECOLOGY, WATER AND SOIL POLLUTION, WIND ENGINEERING AND AIR POLLUTION, SOURCES OF RADIATION AND NUCLEAR SAFETY, PLANNING AND MANAGEMENT OF WATER RESOURCES, REGULARIZATION OF RIVERS AND DAMS, HYDROLOGY AND HYDROGEOLOGY, ENVIRONMENTAL QUALITY MONITORING AND DIAGNOSIS, STORAGE AND WASTE RECYCLING, TECHNOLOGIES AND EQUIPMENT FOR DECONTAMINATION, BALANCE STUDIES AND ENVIRONMENTAL IMPACT, ENVIRONMENTAL HEALTH

Ornamental Arboriculture Laboratory, second floor

Chairmen:

Prof. univ. dr. Mihail **LUCA**
Conf. univ. dr. Vasile **STOLERU**

Secretariate:

Şef lucr. dr. Roxana Angela **TUCALIUC**
Asist. dr. Camelia **LUCHIAN**



ORAL PRESENTATIONS

Plotog Ioan¹, Vărzaru Gaudențiu¹, Iacomi Cristian², Iacomi Beatrice², Roșca Ioan² (¹Politehnica University Bucharest, Center for Electronic Technology and Interconnection Techniques, UPB – CETTI, Bucharest, Romania, ²University of Agriculture Sciences and Veterinary Medicine of Bucharest, Romania)

INVESTIGATIONS ON A PRACTICAL DETERMINATION OF SOIL PH FOR AN IRRIGATION SYSTEM
INVESTIGAȚII PENTRU DETERMINAREA PRACTICĂ A PH-ULUI ÎN SOL PENTRU UN SISTEM DE IRIGAȚII

A method and a device based on galvanic cell for practical determination of soil quality deterioration under the action of water, nutrients, and pesticides are analyzed. The novelty lies in facilitating the input of measured data directly into an automated irrigation system via wireless communication. pH offsetting with temperature is provided. The research was aimed to investigate materials for electrodes construction and to calibrate the device with proper electrodes using known pH solutions.

Arsene Cristina Ceraseala¹, Cioancă Oana², Draghia Lucia³, Hăncianu Monica² (¹SC ARA MANAGEMENT SRL, ²University of Medicine and Pharmacy “G.T. Popa” of Iași, ³University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

ALANTOLACTONE PROFILE IN TAGETES ERECTA AERIAL PARTS
PROFILUL ALANTOLACTONEI ÎN PĂRȚILE AERIENE DE TAGETES ERECTA

The genus Tagetes (Asteraceae) comprises species with a wide array of uses. Previous studies have been focused on the distribution of flavonoids in the genus but little has been done on the identification of the sesquiterpenolactones in the medicinal, cosmetic and aromatic species. The significance of the distribution and accumulation of this compound thorough the plant is not yet clear. In the current study, the alantolactone content of aerial parts of Tagetes erecta was investigated, during budding and full flowering stages. The TLC and HPLC methods confirmed the presence of alantolactones, greater in budding stage samples than in full flowering ones (0.2309 % microgrames in buds, 0.5097 % in leaves). The fertilized plant inflorescences contain greater amounts of studied metabolites than unfertilised plants. The leaves content is not influenced by fertilization. The presence of this metabolite alerts to the allergenic potential of plant, especially in budding stage.

Stoleru Vasile, Teliban Gabriel, Butnariu Monica, Munteanu Neculai, Arpentin Ana-Maria (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

CHEMICAL RISK ASSESSMENT ON RUNNER BEAN (*PHASEOLUS COCCINEUS*)
EVALUAREA RISCULUI CHIMIC LA CULTURA DE FASOLE MARE (*PHASEOLUS COCCINEUS*)

Runner beans is very few studied in Romania, but the importance of this specie consist of high nutrient value (hydrocarbon - 7.7%, protein - 2.4%, vitamins, minerals, fiber) and agricultural technology. Currently runner bean crop, like all vegetable species, is undergoing a number of chemical factors like: pesticides, fertilizers and other pollutants. This paper aimed to study assessing chemical risk factors on runner bean crop in NE region of Romania. The cultivars were represented by four varieties from the United Kingdom (Lady Di, Desiree, Polestar, White Apollo). Content level of contaminants vary depending on the variety, but the obtained values not exceeding the maximum limits admitted by regulation, but some contaminants are at maximum levels. This requires especially where conventional monitoring system value pods residues so that consumption would not pose a risk.

Luca Mihail, Avram Mihaela, Lateş Iustina ("Gh. Asachi" Technical University of Iaşi, Romania)
THE INFLUENCE OF HIDROCLIMATIC RISK FACTORS ON THE EVOLUTION OF NATURAL SITES
INFLUENȚA FACTORILOR DE RISC HIDROCLIMATIC ASUPRA EVOLUȚIEI SITURILOR NATURALE

The paper presents an analysis of hydrological risk parameters and record linkage on the river Moldova in the area of Soci, Iași County. This area is framed in a natural site "Oniceni – Mitești" which is situated on the river Moldova. The site is part of the natural "Oniceni – Mitești" integrated European Ecological Network Natura 2000 site in Romanian. Natural protected area of the site was affected by multiple floods in recent years. Floods have changed morphologically and major minor riverbed of the River and this situation has influenced the evolution of parameters and safety. The study focused on the analysis of fluid flow (minimum, medium and maximum) and solid measured over a period of 50 years in the area of research. Processing of data showed more flood flows during that year (e.g., 2004, 2006 and 2008). The positioning of the river within the site's natural "Oniceni-Mitești" imposes special conditions on the design of hydrotechnic constructions.

Slave Camelia (University of Agricultural Sciences and Veterinary Medicine Bucharest, Romania)
THE STUDY OF DEGRADED LAND BY EROSION USING GIS TECHNOLOGY
STUDIUL TERENURILOR DEGRADATE PRIN EROZIUNE CU AJUTORUL GIS

The aim of this study was to present a map of erosion risk zone of Aldeni - Buzău. GIS tools provide the opportunity to achieve thematic maps that can model various processes. The methods are based on topographic characteristics of the land. For this study the maps were created using ArcMap10.1 program.

Slave Camelia¹, Coancă Mariana² (¹University of Agricultural Sciences and Veterinary Medicine Bucharest, Romania, ²Romanian – American University, Bucharest, Romania)
APPLICATION OF GIS TECHNOLOGY IN URBAN CADASTRE
APLICAREA TEHNOLOGIILOR GIS ÎN CADASTRUL DIN ZONELE URBANE

Geographic Information System is a system used to create, store, analyze and process spatial information distributed through a computerized process. GIS technology can be used in various scientific areas such as emergency management, environmental impact studies, cartography, urban planning. The aims of article is to achieve a development of a neighborhood in Bucharest from create in the beginning of the twentieth century up to now and create a database.

Prisăcaru Cornelia, Bohosevici Thadeus (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)
RESEARCH ON INCIDENCE OF ACRYLAMIDE IN THERMALLY PROCESSED FOODS
CERCETĂRI PRIVIND INCIDENȚA MICOTOXINELOR ÎN PRODUSE ALIMENTARE PRELUCRATE TERMIC

Acrylamide is a substance well known, industrial synthesized and used since the late nineteenth century. Toxicological profile include toxic effects to the reproductive system, neurotoxicity, genotoxicity and a significant carcinogenic potential. This substance has sparked the interest of ecotoxicologists and the whole medical world in 2002 when it was detected in foods eaten by students from the University of Stockholm. The amide of acrylic acid is formed in various chemical ways from carbohydrates and amino acids from plant-based foods by frying, baking, gratin, processes involving exposure to high temperatures. The experiment detailed in this article attempts to assess the content of acrylamide in foods excessive consumed by children and adolescents. We analyzed 25 samples of potato chips, popcorn, biscuits, cookies, cocoa, coffee, cakes, all in various assortments. For statistical correlations between acrylamide and components of the nutritional declaration, it was used Spearman rank coefficient calculation, retaining as significant correlation coefficients with significance level of $p < 0.05$.

Prisăcaru Cornelia¹, Prisăcaru Anca-Irina² (¹University of Agricultural Sciences and Veterinary Medicine of Iași, Romania, ²Farma Fiterman)
THE DETECTION AND QUANTIFICATION OF MYCOTOXINS DIFURANICE IN MEDICINAL SPECIES
DECELAREA ȘI CUANTIFICAREA MICOTOXINELOR DIFURANICE ÎN SPECII MEDICINALE

Species (medicinal species) is a pharmaceutical form made up of mixtures of different plant organs (plant products), dried, which is used in therapy in the form of infusions, decoctions, macerates, syrups, tinctures, glycerin extracts, oil extracts, wine etc. In temperate continental area in which our country stands, saprophyte fungi live on the medicinal herbs so the medicinal species are seen often as different mycotoxins, metabolites of fungi. The highest incidence in this type of phyto is represented by mycotoxins difuranice (aflatoxins and sterigmatocistines), ochratoxin and patulin. The objective of this work consists in qualitative and quantitative determination of mycotoxins in samples of medicinal species from pharmacies, freelance producers deprived of knowledge of toxicokinetics and toxicodynamics active principles of plants and herbal shops. The experiment was performed on 30 samples of vegetable and medicinal species, samples that were tested by first screening test in LUV and samples which showed fluorescence were studied further by high pressure chromatography. Most plant products from manufacturers freelancers do not correspond with the organoleptic rules and shows mycotoxins load.



POSTER PRESENTATIONS

Ghinea Cristina ("Ștefan cel Mare" University of Suceava, Romania)
LIFE CYCLE ASSESSMENT OF ORGANIC WASTE COMPOSTING
EVALUAREA CICLULUI DE VIAȚĂ A COMPOSTĂRII DEȘEURILOR ORGANICE

Organic waste represents an issue that needs to be solved in order to achieve sustainable development. In Romania, organic waste (biodegradable) represents almost half from the household waste composition. The waste management in Romania is characterized by the continued growth of waste quantities and landfilling continues to be the main elimination method for solid waste. Composting and anaerobic digestion are two solutions for reducing of organic waste landfilled. In this paper life cycle assessment (LCA) methodology was applied to determine and evaluate the environmental impact of composting system. All LCA phases were performed: goal and scope definition, inventory analysis, impact assessment and interpretation. Two LCA tools were used for the evaluation: GaBi software and Life Cycle Assessment - Integrated Waste Management Assessment Tool. The results reveal that the quantity of waste composted and the type of waste are influencing the environmental impacts values.

Merette de Lange¹, Evert van Dalen¹, Ricardo Blees¹, Robin Draisma¹, Taeke van der Kooi¹, Dick Bonarius², Gabriela Leusink¹ (¹Van Hall Larenstein University of Applied Sciences, Chemistry, Leeuwarden, The Netherlands, ²Van Hall Larenstein University of Applied Sciences, Biotechnology, Leeuwarden, The Netherlands)
BIOPLASTIC PHA'S FROM AGRICULTURAL WASTE. AN INTERDISCIPLINARY APPROACH
BIOPLASTICUL PHA OBTINUT DIN DEȘEURI AGRICOLE. O ABORDARE INTERDISCIPLINARĂ

The aim of our project was to synthesize biopolymers (Polyhydroxyalkanoates (PHAs)) using plant waste material as renewable substrate. Plant waste material was obtained from tomato and paprika green houses. After degradation of plant material, the PHA's were synthesized in bioreactors by the bacterium (C. necator). The bacteria were used to produce a polymer in a control batch (glucose grown) and in thebiomass-grown (plant waste material) batch. Both batchesproduced PHA's. Upon Soxhlet extraction and analysis (DSC, HPLC) it was found that 3-hydroxybutyrate and 3-hydroxyvalerate were the main components in the biopolymer. This project was collaboration between biotechnology students and chemistry students, as well an inter-institutional collaboration between VHL/NHL Leeuwarden and Stenden Pre, Emmen.

Erhan F., Bantaș R. (Agrarian State University from Moldova, Chișinău, Republic of Moldova)
DETERMINATION OF ENERGETIC EFFICINCZ AT PRODUCING OF AGRICULTURAL PRODUCTS
DETERMINAREA EFICIENȚII ENERGETICE LA PRODUCEREA PRODUSELOR AGRICOLE

At producing and primary processing of agricultural products is spent a volume of energetical resources of different forms (gasoline, diesel, oils, electric energy, etc). In dependency of the processing place of the agricultural product respectively of the primary processing way are spent different quantities of energetical resources (fuels and electric energy), which have a direct rate in forming of costs and prices and in realization dynamics of a certain product. As a result of those phenomenon the same agricultural product produced in different countries, with different processing technologies had different energetic intensities which leads to different costs and prices. From the above mentioned facts it is observed that energetical intensity of agricultural products had a direct influence on production costs and selling market and also on competition of agricultural products on different markets.

Erhan F., Bantaș R. (Agrarian State University from Moldova, Chișinău, Republic of Moldova)
ELLABORATION PRINCIPLES OF FIABILITY OPTIMIZATION ALGORITHMS OF DISTRIBUTION SYSTEMS IN ACCORDING WITH RANDOM FACTORS
PRINCIPIILE DE ELABORARE AL ALGORITMELOR DE OPTIMIZARE A FIABILITĂȚII SISTEMELOR DE DISTRIBUȚIE ȚINÎND CONT DE FACTORII ALEATORI

Fiability of distribution and supply systems with electric energy for consumers is multi-functional technical-economical problem. From these reasons in the ellaboration process of analytical calculus algorithms for the optimal fiability level of distribution and supply systems with electric energy of consumers must take in account all this factors. In the current paper is proposed and argumentated a mathematical model necessary for determination of optimal fiability level of distribution systems in according with the factors and indicators of the systems. It is ellaborated and described the principle of the algorithms for analytical calculus of fiability level, in according with consumers' category and development dynamic of systems and with the variation way in time of parameters which have a random character.