

**MINISTERUL EDUCAȚIEI NAȚIONALE  
MINISTERUL CERCETĂRII ȘI INOVĂRII**

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

**FACULTATEA DE HORTICULTURĂ**



**CONGRESUL ȘTIINȚIFIC CU PARTICIPARE  
INTERNAȚIONALĂ**



**PROGRAM**

**SECȚIUNEA  
HORTICULTURĂ ȘI INGINERIA MEDIULUI  
“HORTICULTURA – ȘTIINȚĂ, CALITATE, DIVERSITATE ȘI ARMONIE”**



**18-19 OCTOMBRIE 2018  
IAȘI**



**MINISTRY OF NATIONAL EDUCATION  
MINISTRY OF RESEARCH AND INNOVATION**

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

**FACULTY OF HORTICULTURE**



**INTERNATIONAL SCIENTIFIC CONGRESS**



**PROGRAMME**

**SECTION**  
**HORTICULTURE AND ENVIRONMENT ENGINEERING**  
*"HORTICULTURE - SCIENCE, QUALITY, DIVERSITY AND HARMONY"*



**18-19 OCTOBER 2018  
IAȘI, ROMANIA**



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# PROGRAMUL CONGRESULUI

## • JOI, 18 OCTOMBRIE 2018

08<sup>30</sup> – 9<sup>30</sup> - Primirea și înregistrarea participanților - Aula Magna "Haralamb Vasiliu"

9<sup>30</sup> - 9<sup>45</sup> - Deschiderea festivă a congresului - Aula Magna "Haralamb Vasiliu"

9<sup>45</sup> – 11<sup>45</sup> - Lucrări în plen - Aula Magna "Haralamb Vasiliu":

- **Michelina Ruocco, Liberata Gualtieri, Maurilia Maria Monti** (The Italian National Research Council (CNR) Institute for Sustainable Plant Protection (IPSP) Via Università 133 Portici (NA) Italy) - *Use of beneficial microorganisms and their metabolites in agriculture practices to help plants growing healthy*

11<sup>45</sup> – 12<sup>45</sup> Decernarea titlului Doctor Honoris Causa d-lui Prof. univ. Dr. Doru Pamfil

12<sup>45</sup> – 13<sup>45</sup> - Masa de prânz (laborator Viticultură, etajul II)

14<sup>00</sup> – 15<sup>00</sup> - Deschiderea simpozionului Facultății de Horticultură (amfiteatrul A6, etajul II)

15<sup>00</sup> – 16<sup>45</sup> - Prezentarea lucrărilor pe secțiuni

16<sup>45</sup>- 17<sup>00</sup> – Pauză de cafea

17<sup>00</sup> – 18<sup>30</sup> - Prezentarea lucrărilor pe secțiuni

19<sup>00</sup> - Masă festivă în onoarea invitaților (restaurantul „LA CASTEL”)

## • VINERI, 19 OCTOMBRIE 2018

8<sup>30</sup> – 10<sup>30</sup> - Prezentarea lucrărilor pe secțiuni

10<sup>30</sup> – 12<sup>00</sup> Workshop: *O nouă abordare a utilizării microorganismelor în horticultură* – Facultatea de Horticultură (laborator Legumicultură, etaj II)

10<sup>30</sup> – 12<sup>00</sup> Workshop: *Evoluția potențialului viticol al podgoriilor în contextul încălzirii climatice* – Facultatea de Horticultură (laborator Viticultură, etaj II)

12<sup>30</sup> - Concluzii. Închiderea lucrărilor congresului

# CONGRESS PROGRAMME

- THURSDAY, OCTOBER 18<sup>TH</sup>, 2018

08<sup>30</sup> – 9<sup>30</sup> - Registration of participants and guests - Aula Magna “Haralamb Vasiliu”

9<sup>30</sup> – 9<sup>45</sup> - Opening ceremony - Aula Magna “Haralamb Vasiliu”

9<sup>45</sup> – 11<sup>45</sup> – Plenary Session - Aula Magna “Haralamb Vasiliu”:

- **Michelina Ruocco, Liberata Gualtieri, Maurilia Maria Monti** (The Italian National Research Council (CNR) Institute for Sustainable Plant Protection (IPSP) Via Università 133 Portici (NA) Italy) - *Use of beneficial microorganisms and their metabolites in agriculture practices to help plants growing healthy*

11<sup>45</sup> – 12<sup>45</sup> Doctor Honoris Causa – PhD, Prof. Doru Pamfil

12<sup>45</sup> – 13<sup>45</sup> - Lunch (Viticulture laboratory, 2<sup>nd</sup> floor)

14<sup>00</sup> – 15<sup>00</sup> - Opening ceremony - Symposium of Faculty of Horticulture (A6 lecture room, 2<sup>nd</sup> floor)

15<sup>00</sup> – 16<sup>45</sup> - Paper sessions

16<sup>45</sup> – 17<sup>00</sup> – Coffee break

17<sup>00</sup> – 18<sup>30</sup> - Paper sessions

19<sup>00</sup> - Gala Dinner (“LA CASTEL” restaurant)

- FRIDAY, OCTOBER 19<sup>TH</sup>, 2018

8<sup>30</sup> – 10<sup>30</sup> – Paper sessions

10<sup>30</sup> – 12<sup>00</sup> Workshop: *A new approach to use microorganisms in horticulture* – Faculty of Horticulture (Vegetable growing laboratory, 2<sup>nd</sup> floor)

10<sup>30</sup> – 12<sup>00</sup> Workshop: *Evolution of the viticultural potential of vineyards in the context of climate warming* – Faculty of Horticulture (Viticulture laboratory, 2<sup>nd</sup> floor)

12<sup>30</sup> - Conclusions. Closing ceremony of the Congress

# **CONGRESS SECTIONS**

## **FACULTY OF AGRICULTURE**

**SOIL WATER AND ENVIRONMENTAL PROTECTION**

**AGRICULTURAL TECHNOLOGIES**

**ECONOMIC SCIENCE AND HUMANITIES**

**FOOD ENGINEERING**

## **FACULTY OF HORTICULTURE**

**FUNDAMENTAL RESEARCH IN AGRICULTURE AND HORTICULTURE**

**HORTICULTURAL TECHNOLOGIES**

**LANDSCAPE ARCHITECTURE**

**ENGINEERING AND ENVIRONMENTAL PROTECTION**

## **FACULTY OF ANIMAL HUSBANDRY**

**FUNDAMENTAL SCIENCES IN ANIMAL BREEDING**

**TECHNOLOGIES APPLIED IN ANIMAL BREEDING**

**CAPITALIZATION OF ANIMAL PRODUCTIONS**

**AQUACULTURE AND FISHERY**

**TOURISM AND PUBLIC ALIMENTATION**

## **FACULTY OF VETERINARY MEDICINE**

**FUNDAMENTAL RESEARCH IN VETERINARY MEDICINE**

**CLINICAL AND THERAPEUTIC SCIENCES**

**PUBLIC HEALTH**

# **SECȚIUNEA – HORTICULTURĂ ȘI INGINERIA MEDIULUI**

## **SUBSECȚIUNEA I – ȘTIINȚE FUNDAMENTALE ÎN AGRICULTURĂ ȘI HORTICULTURĂ**

### ***Laborator Arboricultură ornamentală – etaj II***

*Biochimie  
Chimie  
Fizică  
Biofizică  
Matematică  
Informatică  
Botanică  
Fiziologie vegetală  
Genetică  
Ameliorarea plantelor*

## **SUBSECȚIUNEA a II-a – TEHNOLOGII HORTICOLE**

### ***Amfiteatrul A<sub>6</sub> – etaj II***

*Legumicultură  
Pomicultură  
Viticultură  
Oenologie  
Tehnologia produselor horticole  
Floricultură  
Construcții horticole  
Fitoprotecția plantelor horticole  
Horticultură ecologică*

## **SUBSECȚIUNEA a III-a – PEISAGISTICĂ**

### ***Laborator Floricultură – etaj II***

*Arboricultură ornamentală  
Dezvoltare durabilă în peisagistică  
Evoluția istorică a peisajului  
Estetica, filozofia și psihologia peisajului  
Managementul mediului în peisagistică  
Peisagistica în restaurarea, reabilitarea și conversia urbană  
Compoziție și design peisagistic*

## **SUBSECȚIUNEA a IV-a – INGINERIE ȘI PROTECȚIA MEDIULUI**

### ***Laborator Legumicultură – etaj II***

*Climatologie și agrometeorologie  
Ecologie  
Poluarea apei și solului  
Inginerie eoliană și poluarea aerului  
Surse de radiații și securitate nucleară  
Amenajarea și gospodărirea resurselor de apă  
Regularizări de râuri și îndiguiuri  
Hidrologie și hidrogeologie  
Monitorizarea și diagnoza calității mediului  
Depozitarea și reciclarea deșeurilor  
Tehnologii și instalații pentru depoluare  
Studii de bilanț și impact de mediu  
Igiena mediului*

# **SECTION - HORTICULTURE AND ENVIRONMENT ENGINEERING**

## **1<sup>st</sup> SUBSECTION – FUNDAMENTAL RESEARCH IN AGRICULTURE AND HORTICULTURE**

***Ornamental Arboriculture Laboratory, second floor***

*Biochemistry  
Chemistry  
Physics  
Biophysics  
Mathematics  
Computer Science  
Botany  
Vegetal Physiology  
Genetics  
Plant Breeding*

## **2<sup>nd</sup> SUBSECTION – HORTICULTURE TECHNOLOGIES**

***6<sup>th</sup> Lecture room (A<sub>6</sub>), second floor***

*Vegetable Growing  
Fruit Growing  
Viticulture  
Oenology  
Postharvest Technology of Horticultural Products  
Floriculture  
Horticultural Constructions  
Horticultural Plants Protection  
Ecological Horticulture*

## **3<sup>rd</sup> SUBSECTION – LANDSCAPE ARCHITECTURE**

***Floriculture Laboratory, second floor***

*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*

## **4<sup>th</sup> SUBSECTION – ENGINEERING AND ENVIRONMENTAL PROTECTION**

***Vegetable Growing Laboratory, second floor***

*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 Diagnostics  
Storage and Waste Recycling  
Technologies and Equipment for Decontamination  
Balance Studies and Environmental Impact  
Environmental Hygiene*





**1<sup>st</sup> SECTION**

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

Ornamental Arboriculture Laboratory, second floor

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Șef lucr. dr. Emilian **BULGARIU**

Timp de prezentare: **5-7 minute**



ORAL PRESENTATIONS

**Trincă Lucia<sup>1</sup>, Mareci Sabol Harieta<sup>2</sup>, Mărculescu Afrodita<sup>3</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>University of Suceava, Romania; <sup>3</sup> University of Medicine and Pharmacy Iași, Romania)

FOODS OF THE BIBLE AS MAIN BACKGROUND OF THE MEDITERRANEAN DIET  
ALIMENTELE BIBLICE CA BAZĂ A DIETEI MEDITERANEENE

*The Mediterranean diet is considered a healthy diet, able to assure protection against cardio-vascular diseases and cancer. The Mediterranean diet has been significantly correlated with extended life expectancy. A diet based mainly on consuming whole grains (and derived products), vegetables, fruits (and derived products), dairy products and fish, as well as low and selective meat consumption may be able to provide the main nutrients (carbohydrates, dietary fibers, lipids, proteins, minerals, and vitamins) needed for a healthy body. This paper proposes an overview of the foods of the Bible as the main background of the Mediterranean diet. The biblical traditional diet, including the seven species (wheat, barley, grapes, figs, pomegranates, olives and date honey) and additional dairy products and fish is also part of the modern dietary recommendations.*

**Prisacaru Cornelia<sup>1</sup>, Budacă Ioana<sup>1</sup>, Prisacaru Anca-Irina<sup>2</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>FITERMAN PHARMA, Iași, Romania)

EVALUATION OF THE ANTITOXIC EFFECT OF *EQUISETUM ARVENSE* PHYTOPREPARATIONS  
TESTAREA EFECTULUI ANTITOXIC AU UNOR FITOPREPARATE DE *EQUISETUM ARVENSE*

*The approach of the present study continues the research regarding the therapeutic values of Equisetum arvense (field horsetail). Recent pharmacognostic studies emphasize the presence of high amounts of thiones, similar from the structural point of view with those from rosemary (Rosmarinus officinalis), in the leaves of Equisetum arvense. This implies, as a direct consequence, that the field horsetail owns antioxidant and antitoxic activities. In order to sustain this assertion, qualitative and quantitative tests revealing the sulfhydryl groups have been performed on different phytopreparations obtained from Equisetum arvense. The results highlighted more or less significant concentrations of thiones, values that could be correlated with the organoleptic aspect of the vegetal products and their source.*

**Bodale Ilie, Cazacu Ana**, (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

STUDY OF CAPILLARY HYSTERESIS IN MEDIUM TEXTURE SOIL USING PREISACH MODEL  
STUDIUL HISTEREZISULUI CAPILAR IN SOLURI CU TEXTURA MEDIE FOLOSIND MODELUL PREISACH

*The purpose of this paper is to study the physical properties of the soil using a phenomenological model which should be able to describe the capillary hysteresis of water from pores of the medium-textured soil. The proposed model is Preisach type and has been used successfully to describe the hysteresis of nonlinear phenomena in physics, biology or economics. This model has the advantage of being easily adapted. We had expanded this model to study the pressure exerted by water in the processes of drying and wetting of the soil. The developed and implemented model, unlike other models, takes into consideration the way in which interconnected pores are filled and emptied. Our study presents a new method of assessing the water circulation in soil pores with medium texture from greenhouses. The results*

are useful to make the irrigation systems used in gardening more efficient, from economical point of view.  
Acknowledgment: PN-III-TE-41/2018.

**Cazacu Ana, Spănu Mihaela, Oancea Servilia, Bodale Ilie** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

SPECTROPHOTOMETRIC STUDY OF THE HEAVY METAL EFFECTS IN ANIMAL BLOOD  
STUDIU SPECTROFOTOMETRIC AL EFECTELOR METALELOR GRELE ÎN SÂNGELE ANIMAL

*In order to obtain information on the alteration of blood structure in the presence of heavy metals, mercury and lead, the modification of the absorption maxima of oxyhemoglobin was analyzed. Blood samples were collected from three healthy animal species: cows, horses and dogs. For the mercury samples, 20 ml of 5% HgCl<sub>2</sub> solution and 0.5 ml of blood were used, and for the lead samples, a combination of 20 ml of 5% Pb(NO<sub>3</sub>)<sub>2</sub> solution and 0.5 ml of blood from each species. The obtained experimental results have shown that heavy metals affect certain biophysical characteristics of hemoglobin in the blood of the studied animals. The strongest effect has been obtained in the case of mercury, which is the most toxic heavy metal; for the horse blood sample at the wavelength of 410 nm, the absorption measurement gave an error, indicating that the sample was severely degraded. Acknowledgment: PN-III-TE-41/2018.*

**Bulgariu Emilian, Chiruță Ciprian, Călin Marius, Lipșa Florin Daniel, Gafencu Andrei Mihai, Ulea Eugen** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

A MATHEMATICAL MODEL OF BACTERIAL GROWTH USING SOIL BACTERIAL COMMUNITIES  
UN MODEL MATEMATIC AL CREȘTERII BACTERIILOR UTILIZÂND COMUNITĂȚILE BACTERIENE DIN SOL

*A bacterial growth model is presented starting from the Malthusian model of exponential growth. Considering the growth rate being a linear function, we can express it using the bacterial tolerance grade over different conditions. Resolving the obtained differential equation, we plot the growth of the bacterial population for the studied initial conditions. The numerical increase of soil bacterial population cultivated on common microbiological growth media (Potato dextrose agar - abbreviated PDA) is studied.*

**Prună Liviu, Slonovschi Andrei** („Gheorghe Asachi” Technical University of Iași, România)

AUTOMATIC GRAPHICAL SIMULATION OF HOW TO DETERMINE THE TRUE SIZE OF A STRAIGHT SEGMENT BY CHANGING A PROJECTION PLAN  
SIMULAREA GRAFICĂ AUTOMATĂ A MODULUI DE DETERMINARE A ADEVĂRATEI MĂRIMI A UNUI SEGMENT DE DREAPTĂ UTILIZÂND SCHIMBAREA UNUI PLAN DE PROIECȚIE

*In Descriptive Geometry, it is noticed that when it comes to Descriptive Geometry Methods, the first theme that raises students' understanding problems is to determine the true size of a straight segment using the methods of changing the plan projection. Starting from the problems raised by the students, the authors have created a three-dimensional graphic model to help them understand how to determine the true size of a straight segment using the vertical projection plan change method.*

**Sestras Paul<sup>1,4</sup>, Cetean H.<sup>2</sup>, Dan Catalina<sup>2</sup>, Nas S.<sup>3</sup>, Spalevicv.<sup>4</sup>, Boscaiu Monica<sup>5</sup>, Cimpeanu Sorin Mihai<sup>1</sup>**  
(<sup>1</sup>University of Agronomical Sciences and Veterinary Medicine of Bucharest, Romania; <sup>2</sup>University of Agricultural Sciences and Veterinary Medicine of Cluj Napoca, Romania; <sup>3</sup>Technical University of Cluj-Napoca, Romania; <sup>4</sup>University of Montenegro, Geography, Nikšić, Montenegro; <sup>5</sup>Universitat Politècnica de València, Spain, Mediterranean Agroforestry Institute, Valencia, Spain)

FLORISTIC COMPOSITION AND DIVERSITY INDICES OF WOODY SPECIES IN FĂGET FOREST, CLUJ-NAPOCA, NORTH WESTERN OF ROMANIA  
COMPOZIȚIA FLORISTICĂ ȘI INDICIILE DE DIVERSITATEA SPECIILOR LEMNOASE DIN PĂDUREA FĂGET, CLUJ-NAPOCA, NORD VESTUL ROMÂNIEI

*Periurban forests and urban green spaces provide an extremely useful ecological infrastructure for modern cities. The study of woody species diversity in Făget Forest, located near Cluj-Napoca city, in N-W of Romania, highlighted the consolidated diversity of trees species, but also floristic communities resulted as from the natural evolution and interactions with environmental and anthropic factors. Although the diversity of woody species in Făget Forest calculated by diversity indices appear limited or low (Shannon-Wiener < 1), the communities have been strengthened over time, consequently the conservation status of the habitat type in terms of structure and specific functions appear as stable. The preservation of Făget Forest diversity, as well as its economic, ecological, cultural, landscape, recreational and other forest functions can assure important benefits to the city and its inhabitants.*

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

THE EFFECT OF COMBINED APPLICATION OF *B. JAPONICUM* AND *P. PUTIDA* WITH MINERAL AND ORGANIC FERTILIZATION ON PROLINE CONTENTS IN SOYBEAN UNDER PHOSPHORUS INSUFFICIENCY AND MODERATE DROUGHT

**INFLUENȚA APLICĂRII COMBinate A RIZOBACTERIILOR *B. JAPONICUM* ȘI *P. PUTIDA* PE FONDAL DE FERTILIZARE MINERALĂ ȘI ORGANICĂ ASUPRA CONȚINUTULUI DE PROLINĂ LA SOIA ÎN CONDIȚII INSUFICIENTE DE FOSFOR SI SECETĂ MODERATĂ**

*The use of plant growth promoting rhizobacteria (PGPR) is considered a strategy to improve plant tolerance in hostile environments. However, its underlying mechanisms are not completely understood under phosphorus (P) insufficiency and water deficit conditions. In the present study, a pot experiment was conducted to assess the combined effects of Bradyrhizobium japonicum inoculation with Pseudomonas putida in conjunction with P and organic fertilization on proline contents of soybean (Glycine max L.) plants grown in P-deficient soil and subjected to moderate drought. The experimental results demonstrated that the application of both strains significantly changed proline contents in leaves and roots, especially under moderate drought and P insufficiency compared to the inoculation with the symbiotic B. japonicum strain alone. The rhizobacteria stains application without fertilization or with cattle manure increased proline accumulation in leaves under drought but did not affect significantly this parameter in well-watered plants. By contrast, integrated use of isolates decreased proline concentration in roots of soybean with mineral P and organic fertilization regardless of soil moisture level. In conclusion, the combined use of B. japonicum and P. putida is efficient approach to improve soybean growth and drought tolerance through altering proline contents, especially in soil with P insufficiency as well as under application of organic fertilizer.*

**Tomiță Daniela Ivona, Vasiliu Mihaela Păpușa, Sachelarie Liliana, Fuiuagă Codrin-Paul, Deleu Grigorii, Stadoleanu Carmen** („Apollonia“ University, Faculty of Dental Medicine, Iași, România)

**IMPROVING THE QUALITY OF NUTRITION IN PATIENTS WITH REBUILT MASTICATORY FUNCTION BY PROSTHESIS**

**ÎMBUNĂTĂȚIREA CALITĂȚII ALIMENTAȚIEI LA PACIENȚII CU FUNCȚIE MASTICATORIE REFĂCUTĂ PRIN PROTEZARE**

*Today, modern man's diet mainly consists of well-prepared foods that do not require a high masticatory effort, in which case the shortened arches are satisfactory. After prosthesis, eating is more difficult at first, but over time this shortcoming is corrected to a large extent. To begin with, patients will consume soft foods, cut into small pieces, and mastication is done bilaterally. Do not bite the food directly with the teeth, as the teeth of the prostheses can be fractured. At the same time, the consumption of viscous food is not recommended, especially in the case of total acrylic or partial acrylic prostheses because they stick to the prostheses, destabilize them from the field, causing mucosal lesions. For this study, we used questionnaires to highlight the type of diet, prosthesis and food preferences of 53 patients aged 45-85 years who benefited from dentures.*

**Halitchi Liliana-Gabriela<sup>1</sup>, Daraba Oana Maria<sup>1</sup>, Tomiță Daniela Ivona<sup>1</sup>, Merlușcă Paula<sup>1</sup>, Codruța Iliescu<sup>2</sup>**  
(<sup>1</sup>„Apollonia“ University, Faculty of Dental Medicine, Iași, România; <sup>2</sup>UMF „Gr. T. Popa, Iași, România)

**INTERRELATIONSHIP BETWEEN BRACES FRIENDLY BALANCED DIET AND VARIATIONS OF CITOTOXICITY IN ORTHODONTICS ARCHES**

**INTERRELAȚIILE DINTRE REGIMUL ALIMENTAR ECHILIBRAT ȘI VARIAȚIILE CITOTOXICITĂȚII ARCURILOR ORTODONTICE**

*Having a focus on nutrition and a healthy lifestyle, it is important to evaluate the relationship between fixed orthodontic treatment and diet. It is beneficial to provide an orthodontic braces friendly diet guide and to monitor the citotoxicity of orthodontic arches. Aim of the study: 1. guide for "orthodontic braces friendly" diet; 2. confirmation of the biocompatibility of NiTi alloys. The work protocol includes: cultivating the fibroblasts, introducing the orthodontic materials into the fibroblast cultures, counting the cells, calculating the density and cell viability and offer an orthodontic braces friendly diet guide. Evaluating cellular morphology and determining cell viability after exposure to orthodontic materials did not reveal toxic reactions, having the following values: Control sample = 98.15% Nitinol 3M = 95.2%. Determination of cell viability for NiTi 3M orthodontic wire shows that they induce low cytotoxicity.*

**Manole Svetlana** (State Agrarian University of Moldova, Republic of Moldova)

**IMPROVEMENT OF DAYLILEES (*HEMEROCALLIS* L.) IN THE REPUBLIC OF MOLDOVA  
AMELIORAREA CRINULUI GALBEN (*HEMEROCALLIS* L.) ÎN REPUBLICA MOLDOVA**

*The genus Hemerocallis L. has long been attributed to the Liliaceae family, then to the Hemerocallidaceae family. Since 2009, on the basis of phylogenetic analyzes, it has been attributed to the Xanthorrhizaceae family. The species of Hemerocallis are spread in the temperate zones of Oriental Asia, especially in China, in the peninsula of Korea, Japan, Siberia. The most northern species can be considered Hemerocallis lilioasphodelus or H. flava, which is found in the Obi river basin and in Western Siberia. The genus Hemerocallis, the species H. flava, H. fulva are characteristic for the flora of Europe. Many species of this family are grown as ornamental ones. The paper presents the results of the improvement of the species and varieties of the genus Hemerocallis L., the methods and stages of obtaining some forms and varieties of Hemerocallis hybrida Hort, the forms of Hemerocallis hybrida Hort., with decorative qualities superior to the parent plants.*



## POSTER PRESENTATIONS

### Chairmen:

Prof. dr. Lucia Carmen **TRINCĂ**  
Prof. dr. Carmen Doina **JITĂREANU**  
Prof. dr. Marcel Vasile **DANCI**

### Secretariat:

Şef lucr. dr. Ana **CAZACU**  
Şef lucr. dr. Emilian **BULGARIU**

**Patraş Antoanela** (University of Agricultural Sciences and Veterinary Medicine of Iaşi, Romania)  
QUALITY PARAMETERS OF APPLE FRUITS MARKETED IN IAŞI  
PARAMETRI DE CALITATE AI FRUCTELOR DE MĂR COMERCIALIZATE ÎN IAŞI

*Apples are the most consumed fruits in Romania, all over the year. In the present work were studied fruits of 7 apple cultivars (Golden Delicious, Idared, Jonagold, Florina, Jonathan, Starkrimson, Renet) commercialized in 3 open-markets from the city of Iaşi. The analysed quality parameters are: soluble solids content, acidity, total sugars, ascorbic acid content, sugar/acid ratio. Renet cultivar proved the highest soluble solids content, while Florina, the lowest. The cultivars with the most important acidity are: Idared (Sârca) and Jonathan, and with the smallest: Starkrimson and Golden Delicious.*

**Prisacaru Cornelia** (University of Agricultural Sciences and Veterinary Medicine of Iaşi, Romania)  
STUDIES REGARDING THE CONCENTRATION OF FREE THIOL GROUPS FROM DIFFERENT VARIETIES OF ROSEMARY OIL (*ROSMARINUS OFFICINALIS*)  
STUDII REFERITOARE LA CONCENTRAȚIA DE GRUPĂRI TIOLICE LIBERE DIN DIFERITE SORTIMENTE DE ULEI DE ROZMARIN (*Rosmarinus officinalis*)

*The study approaches a phytochemical method in order to establish the presence of free thiol groups in some rosemary phytopreparations (aqueous, alcoholic, ether, and oil extracts), as well as in rosemary essential oil. The identification and assay of -SH groups responsible for the antitoxic effect of Rosmarinus officinalis were performed by chromatographic methods (GC and HPLC) and were confirmed by spectrophotometry. The results indicate the presence of high concentrations of dithiolthiones (compounds with free thiol groups) in the oil and aqueous extracts of rosemary, as well as in the essential oil.*

**Trincă Lucia<sup>1</sup>, Gavăt Cristian-Cătălin<sup>2</sup>, Vasilescu Leonard Vasile<sup>2</sup>, Yokus Beran<sup>3</sup>, Mărculescu Afrodita Doina<sup>2</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iaşi, Romania; <sup>2</sup>University of Medicine and Pharmacy Iaşi, Romania; <sup>3</sup>Dicle University, Dicle, Turkey)  
EVALUATION OF SODIUM METAMIZOLE CONTENT BY SPECTROPHOTOMETRIC ANALYSIS IN PHARMACEUTICAL TABLETS  
EVALUAREA CONȚINUTULUI DE METAMIZOL SODIC DIN TABLETELE FARMACEUTICE PRIN ANALIZĂ SPECTROFOTOMETRICĂ

*The aim of this research was to exactly quantify pure sodium metamizole from the tablets of a registered pharmaceutical product. A spectrophotometric method in visible range has been developed and proposed to be validated and applied in order to determine the pure sodium metamizole content from pharmaceutical tablets. The method's validation protocol implied evaluation of the linearity of the proposed method, detection limit (LD) and quantitation limit (LQ), Sandell's sensitivity, interference test, stability of the prepared solutions, precision (repeatability and reproducibility) of the method and method's accuracy. The results were compared with the Romanian Pharmacopoeia X-th Edition Rules with respect to the maximum permissible deviations from the declared active substance content per tablet provided by pharmaceutical producing company of the registered product.*

**Trofin Alina, Ungureanu Elena, Trincă Lucia Carmen, Sandu Tatiana, Parascan Letiția** (University of Agricultural Sciences and Veterinary Medicine of Iaşi, Romania)  
THE MODIFICATION OF SOME CHEMICAL PARAMETERS FOR DIFFERENT BRANDS OF MILK DURING REFRIGERATION  
MODIFICAREA UNOR PARAMETRI CHIMICI PENTRU DIFERITE TIPURI DE LAPTE ÎN CONDIȚII DE PĂSTRARE LA RECE

*Milk is one of the main foods especially in the diet of small children but not only theirs. In addition to consumption as pasteurized or high-temperature treated (UHT) milk, it is a raw material for making cheeses, yoghurts, other milk products, and many products in which it is used. It is an accessible source of calcium but also of fat, protein, lactose, other mineral substances, vitamins and enzymes. The fresh*

product being perishable is treated thermally to prolong the shelf life. The present paper analyzes the variation of different chemical parameters (pH, acidity, lactose content) under storage conditions at 4°C, and also the dry matter and nitrates contents for different types of milk marketed or distributed for consumption.

**Ungureanu Elena<sup>1</sup>, Ariton Adina-Mirela<sup>2</sup>, Trofin Alina<sup>1</sup>, Jităreanu Carmen Doina<sup>1</sup>, Ungureanu O.C.<sup>3</sup>, Popa V.I.<sup>4</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>Station for Cattle Breeding, Dancu Iași, Romania; <sup>3</sup>"V.Goldiș" West University of Arad, Romania; <sup>4</sup>"Gh. Asachi" Technical University of Iași, Romania)

CHEMICAL TRANSFORMATIONS AND SPECTRAL CHARACTERIZATION TO PROTOBIND 3000 LIGNIN  
TRANSFORMĂRI CHIMICE ȘI CARACTERIZAREA SPECTRALĂ LA LIGNINA PROTOBIND 3000

*Lignin derivative (the commercial product - Protobind 3000) offered by the Granit Recherche Developement S.A. company, Lausanne-Schweitzerland was synthesized from annual plants. The present study's aim was to modify commercial lignins by the reaction of hydroxymethylation (produced in alkaline medium) and epoxydation (reaction with epichlorohydrin was performed in basic catalysis, aiming at increase the functionality) and to characterize the lignin derivatives chemical, spectral (<sup>1</sup>H NMR) and thermogravimetric analysis (TG). Studies have revealed some functional changes related to the difference in reactivity and reaction conditions.*

**Cazacu Ana, Oancea Servilia, Bodale Ilie** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

ANALYSIS OF PROTEINS CONTENT FROM BLOOD PLASMA OF HERBIVOROUS AND CARNIVOROUS ANIMALS  
ANALIZA CONȚINUTULUI DE PROTEINE DIN PLASMA SANGUINĂ A ANIMALELOR ERBIVORE ȘI CARNIVORE

*This paper focuses on determining the concentration of blood plasma proteins for different domestic animals to highlight the link between diet and proteins content. Blood plasma from two categories of animals, herbivores and carnivores (horse, cow, goat, sheep and dog) was used for this study, the protein content being compared to that found in human and turkey blood (omnivorous). Our results showed that the samples of blood taken from dogs have the lowest proteins content, although they consume food rich in proteins. The highest value of proteinemia is found in horse blood, even if it is an herbivorous animal that consumes food rich in fibbers and vitamins. The hypothesis that herbivores have a higher content of proteins in blood than carnivores is supported by the results obtained for samples of cow, goat and sheep blood. Acknowledgment: PN-III-TE-41/2018 grant.*

**Dincă Lucian, Vasile Diana, Dincă Maria** (National Institute for Research and Development in Forestry "Marin Drăcea", Brașov, Romania)

RUBUS SPECIES PRESENT IN ALEXANDRU BELDIE HERBARIUM  
SPECIILE DIN GENUL RUBUS PREZENTE ÎN HERBARUL ALEXANDRU BELDIE

*Rubus Genus, which encompasses 750 species spread out on almost all continents, has a significant importance, both from a botanical perspective, as well as an economical and medicinal one. The purpose of the present paper is to describe some of the most important species belonging to the Rubus Genus present in the Al. Beldie Herbarium from INCDS „Marin Drăcea”, Bucharest. As such, the paper analyzes the species harvesting year and place, the botanists that have collected them as well as the plates conservation state. As a total, 114 plates that belong to the Rubus Genus were analyzed, namely 65 species. The species with most samples present in the herbarium is Rubus caesius L., followed by R. idaeus L. and R. tomentosus Borkh. The Rubus species were collected from France, Poland, Germany, Austria and Romania (Bucegi Mountains, Brașov, Arad, Timișoara, Caransebeș, Vâlcea, Buzău, Ilfov, Maramureș). The Rubus samples present in the herbarium were collected between 1853 and 1999, the majority of them being gathered between 1887 and 1942 by renowned local or foreign botanists. The conservation state of the plates is generally good.*

**Boiu-Sicua Oana-Alina, Burlacu Aglaia, Israel-Roming Florentina, Voaideş Cătălina, Cornea Călina Petruța** (University of Agronomical Sciences and Veterinary Medicine Bucharest, Romania)

PLANT ASSOCIATED MICROORGANISMS WITH SILICA SOLUBILIZATION POTENTIAL  
MICROORGANISME BENEFICE PLANTELOR CU EFECT DE SOLUBILIZARE A SILICIULUI

*Silicon is the second abundant element on Earth. Commonly, it is found as silica and silicates, or in biology as mineral constituent of microorganisms, protozoa and plants. Although silicon it is not considered an essential nutrient for plants, it has been noticed that available silicon positively influences plants' growth, mechanical strength, and resistance to several biotic and abiotic unfavorable conditions, such as fungal*

phytopathogens, herbivores and adverse chemicals. Our study presents several microbial strains able to solubilize silicon from different biological and mineral substrates. Some of these microorganisms were isolated from plant material with high content of mineral silicon like horsetail, wheat straw, rosemary and nettle. Moreover, microbial supernatant obtained on horsetail broth increased hypocotyl and roots length of cowpea *Vigna unguiculata* (L.) Walp.

**Modiga Beatrice Alexandra, Jităreanu Carmenica Doina** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

STOMATIC CONDUCTANCE AND CHLOROPHYLL CONTENT INDEX AND LEAF AREA OF SOME BEANS LOCAL CULTIVARS FROM NORTH-EAST OF ROMANIA, UNDER SALT STRESS  
DETERMINAREA CONDUCTANȚEI STOMATALE ȘI A CONȚINUTULUI DE CLOROFILĂ A UNOR CULTIVARE DE FASOLE, DIN ZONA DE NE A ROMÂNIEI, SUB INFLUENȚA STRESULUI SALIN

Salinity represent a major obstacle in plant growth where water quality plays a major role. In many countries more than 30% of water for irrigation is loaded with salt, and it induces the reduction of growth and yield of sensitive varieties. So, research for plants adapted to high levels of salinity becomes an imperative for agricultural production. Beans is a salt-sensitive species. For this reason, the purpose of the face work was to determine the effect of excess NaCl on the dynamics of the chlorophyll content index and foliar stomatic conductivity in the case of 7 bean genotypes as an indicator of salt stress tolerance. The biological material was represented by seven bean genotypes, collected from saline soils in the Moldavian region, in 2018 and exposed to salt stress over a 30-day period. They were constantly wetted with saline at a concentration of 100 mM and 200 mM NaCl. The bifactorial experience was performed in a randomized three-repeat block experiment. The chlorophyll content of the leaves was determined using the CCM 200 PLUS apparatus. Stomatal conduction was determined using the SC-1-Terra-Preta foliar porometer. The foliar stomatic conductivity, after 30 days, after applying saline treatments was generally reduced to the bean genotypes studied, except for the Blăgești 4 local population from variant 200 mM NaCl. After 30 days of exposure to the same variant, because stomatitis movements are affected by the osmotic effect of saline stress, we can conclude that the according of the literature, we can affirm that after 30 days, of exposure to saline stress, were observed to the experimental variants symptoms specific to ionic stress.

**Potor Constantin Daniel, Hoza Dorel, Georgescu Mihaela Ioana** (University of Agronomical Sciences and Veterinary Medicine of Cluj Napoca, Romania)

FOUR LOCAL POPULATIONS OF *PRUNUS DOMESTICA* FROM BUZAU - PĂTÂRLAGELE CITY WERE ANALYZED TO EVALUATE THE RESISTANCE TO FROST AS WELL AS THE ORGANOGENESIS PROCESS  
CÂTEVA OBSERVAȚII ASUPRA REZISTENȚEI LA ÎNGHEȚ ȘI A PROCESULUI DE ORGANOGENEZĂ FLORALĂ LA UNELE POPULAȚII LOCALE DE *PRUNUS DOMESTICA* DIN PĂTÂRLAGELE JUDEȚUL BUZĂU

The two moments chosen to determine frost resistance were the end of February and the end of March. In the first determination, more than 50% of the analyzed buds showed damage caused by frost, while at the second determination most of the buds remaining on the branch were viable. The evaluation of the floral organogenesis process carried out at the end of February revealed differences in the stage of development of ginacea, while the rest of the floral organs were formed in all four populations.

**Rotaru Liliana, Colibaba Cintia Lucia, Aelenei Sergiu Irinel** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE AGROBIOLOGICAL AND TECHNOLOGICAL VALUE OF ANCIENT ROMANIAN GRAPE VARIETIES (*Vitis vinifera* L.) CULTIVATED IN IAȘI VINEYARD  
VALOAREA AGROBIOLOGICĂ ȘI TEHNOLOGICĂ A UNOR SOIURI VECHI ROMÂNEȘTI DE VIȚĂ DE VIE (*Vitis vinifera* L.) CULTIVATE ÎN PODGORIA IAȘI

Global warming, as an extreme climatic phenomenon, shows a strong influence on vine cultivation, leading to the reconsideration of the cultivated grape varieties. The extreme heat during grapes' maturation results in a unbalanced qualitative profile (too high sugar concentration and too low acidity concentration), losing on the way some of the wines specific for certain regions.

In this article, ancient Romanian grape varieties were studied, that have been neglected in recent years and that can be reconsidered for the current conditions. The following varieties were studied: Ardeleanca, Braghina, Cruciuliță, Cionic, cultivated in the ampelographic collection of USAMV Iași. These varieties in the past were part of the old varieties of the Romanian vineyards, being cultivated before the phylloxera invasion and bringing the note of originality specific to each vineyard. Many of them have a meritorious behavior, and can be highlighted in the new zoning works of Romanian vines.

**Lupașcu Galina, Mihnea Nadejda** (Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chișinău, Republic of Moldova)

GENE EFFECTS IMPLIED IN MANIFESTATION OF THE SOME QUANTITATIVE TRAITS AT THE TOMATO  
EFECTE GENICE IMPLICATE ÎN MANIFESTAREA UNOR CARACTERE CANTITATIVE LA TOMATE

In the article are presented the results of the research of the genetic effects involved in the manifestation of some quantitative characters to tomatoes. It has been established that the various actions (aditive - a,

dominant - d) and epistatic interactions (aa, ad, dd) of the genes vary in their degree and orientation (+/-), and depend on the combination, traits and participate to the inheritance of morphobiological and agronomic traits of tomatoes. Duplicate epistasis play an important role in forming the phenotype of these characters in most combinations. As a result of the clustering analysis of the degree of association of the characters mean in the F<sub>2</sub> population with the investigated gene effects, it was found that in all cases, the F<sub>2</sub> media displayed a high associative association with epistasis ad. The broad spectrum of gene effects involved in the formation of the phenotype of morphobiological and agronomic features highlights their genetic basis which considerably contributes to the targere of tomato breeding.

**Mihnea Nadejda, Lupaşcu Galina** (Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chişinău, Republic of Moldova)

MORPHOBIOLOGICAL AND AGRICULTURAL TRAITS OF THE TOMATO PROSPECTIVE LINES  
ÎNSUŞIRILE MORFOBIOLOGICE ŞI AGRONOMICE LA LINIILE DE PERSPECTIVĂ DE TOMATE

*The article presents the results of the appreciation of some tomato perspective lines created at the Institute of Genetics, Plant Physiology and Plant Protection, Republic of Moldova. Testing on the basis of productivity, resistance to alternariosis and morphobiological characteristics of the fruit, and subsequent clusterian analysis, showed that the lines separated into three clusters differ on the basis of the fruit weight, fruit length, fruit diameter, mesocarp thickness, pericarp thickness, seminal lojes. Lines with increased productivity – L 304, L 306, L 309 and L 310 have been identified that can be included in the breeding programs. Lines L 304, L 306, L 308, L 310 exhibited a reduced degree and frequency of attack of alternarias and may be recommended as a source of resistance to disease.*

**Burnichi Floarea, Nita Auruş, Pantazi Lenuţa, Vasile Florentina, Vlad Constantin, Mirea Emilian, Pârvu Maria Gabriela, Petre Constantin** (Research and Development Station for Vegetable Growing of Buzău, Romania)

CHARACTERIZATION AND CONSERVATION OF GERMPASM OF SELECTED SOLANUM LYCOPERSICUM ACCESIONS  
CARACTERIZAREA SI CONSERVAREA GERMOPLASMEI UNOR ACCESII SELECTATE DE SOLANUM LYCOPERSICUM

*The status of conservation of tomato crop germplasm has received less attention than that of the major staple crops such as cereals. Information on tomato germplasm can, however, be obtained from online national databases. Maintenance and updating of this information requires a high level of national collaboration. This can be exemplified by the activity of the Vegetable Genetic Resources Bank of Suceava and Vegetable Research and Development Station Buzau (VRDS Buzau), in the frame of national Sectorial Project ADER 3.1.4, on tomato crops. VRDS Buzau has studied and preserved genetic diversity of 50 tomato accesions, for present and future utilization. Thus genebank material is becoming more attractive to small/private producers. This system facilitates access to germplasm of tomato accesions, with possible implications on the use of this crop' diversity in the near future.*



***2<sup>nd</sup> SECTION***

***HORTICULTURE TEHNOLOGIES***

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

6<sup>th</sup> Lecture room, second floor

**Chairmen:**

Prof. dr. Lucia **DRAGHIA**  
Prof. dr. Gheorghe **GLĂMAN**  
Prof.dr. Doru **PAMFIL**  
Prof. dr. Neculai **MUNTEANU**  
Prof. dr.Carruso **GIANLUCA**  
Prof. dr. Dorel **HOZA**  
Prof. dr. Viorel **MITRE**

**Secretariat:**

Asist. dr. Maria **BRÎNZĂ**  
Asist. dr. Monica **HEREA**  
Asist. dr. Gabriel **TELIBAN**

Timpe de prezentare: **5-7 minute**



**ORAL PRESENTATIONS**

**Stoleru Vasile<sup>1</sup>, Inculet Carmen-Simona<sup>1</sup>, Caruso Gianluca<sup>2</sup>, Teliban Gabriel<sup>1</sup>, Stan Teodor<sup>1</sup>, Munteanu Neculai<sup>1</sup>, Cojocar Alexandru<sup>1</sup>, Stoleru Carmen-Maria<sup>3</sup>, Sellitto Vincenzo Michelle<sup>4</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine, Iasi, Romania; <sup>2</sup>Department of Agricultural Sciences, University of Naples "Federico II", Italy; <sup>3</sup>"V. Adamachi" College of Agricultural and Food Industry, Iasi, Romania; <sup>4</sup>Department of Microbiology, MsBiotech SPA., Roma, Italy)

**ORGANIC VS CHEMICAL FERTILIZATION ON TOMATO CROP PERFORMANCES**  
**FERTILIZAREA ORGANICĂ VS. CHIMICĂ ASUPRA PERFORMANȚELOR CULTURILOR DE TOMATE**

*The tomato crop on the large areas, worldwide, is determinate by most balanced vegetables in terms of nutrition. Studies and research on this specie have not fully established the correlation of production with the biochemical quality of the harvest, in terms of sustainability. The purpose of the research was to study the influence of the organic fertilization (O) and chemical (Ch) on the tomato crop, in protected area compared to a control (Ct). The highest values of biometric indicators (number of fruit per plant, plant height, fruit weight) were made in chemically version with Nutrispore® and the highest values of biochemical indicators (content lycopene, polyphenols and antioxidant capacity) were made in organically fertilized with chicken manure.*

**Vitănescu Maricel<sup>1</sup>, Vlase Laurian<sup>2</sup>, Mantu-Amăriucăi Dorina<sup>3</sup>, Burducea Marian<sup>3</sup>, Stoleru Vasile<sup>1</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine from Iasi, Romania; <sup>2</sup>"Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania; <sup>3</sup>"Al. I. Cuza" University, Iasi, Romania)

**POLYPHENOL CONTENTS OF CHENOPODIUM QUINOA CULTIVARS AND HARVESTING TIME**  
**CONȚINUTUL DE POLIFENOLI DIN CULTIVARELE DE CHENOPODIUM QUINOA ȘI MOMENTUL RECOLTĂRII**

*Quinoa (Chenopodium quinoa Willd) originates from the tropical area of South America, being a totally different climatic zone for Europe and our country, which requires thorough knowledge of the agro-climatic requirements of the species that can ensure the success of this crop. The seeds' nutritional quality is granted by the high content of protein, quality fatty acids and a high number of amino acids, which makes it a functional food product, ideal for the human body, without being known and the nutritional qualities of the leaves, in order to introduce in the leaf vegetable crops. To achieve this goal, during 2017 was organized a split plot design experience, in order to determine the total content of polyphenols of three cultivars: Puno, Vikinga and Titicaca.*

**Achiței Vlăduț, Gheorghioaia Mădălin, Cojocar Alexandru, Stoleru Vasile** (University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)

**PRELIMINARY RESULTS REGARDING THE DETERMINATION OF THE WATER SUPPLY OF EGGPLANTS**  
**REZULTATE PRELIMINARE PRIVIND DETERMINAREA GRADULUI DE APROVIZIONARE CU APĂ AL PĂTLĂGELELOR VINETE**

*The present paper places plants as a coordinating element in the irrigation ensemble, where they can provide data on moisture and can achieve numerically the limits to which their biological systems operate optimally. The genesis of this system is based on the intensity of the electrical current measured between the two electrodes, intensity which is in relation to indirect proportionality with the hydric deficit measured at the sap level. The plant's water supply was measured using two electrodes, represented by medicinal needles specifically treated to prevent oxidation during use. In order to highlight the currents of low intensity, a galvanometer was used. On the basis of this method were performed measurements demonstrating the decrease of the intensity of electrical conductivity inversely proportionate to the water content, the average in the group subjected to stress hydric (L2) on day 3 with the value of 6.22 Amp, gradually decreasing the As the period during which it was subjected to a hydric deficit increased, reaching 3.92 Amp on day 4, 2.54 Amp on day 5 and 1.67 Amp on Day 6, compared to the normal average of 6.35 Amp. On the last day, the stage in which the group subjected to a lack of water (L2) was hydrated, a return was found in terms of the intensity values at the average of 3.44 Amp, which strengthens the relationship between the variation of the two characteristics.*

**Gache (Lungu) Mirabela, Munteanu Neculai, Stoleru Vasile, Hangan (Istrate) Ana-Mara-Roxana** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

PRELIMINARY STUDIES ON THE SELECTION AND PREPARATION OF SUBSTANCES FOR CULTURE IN POT AND CONTAINERS  
STUDII PRELIMINARE PRIVIND ALEGEREA ȘI PREGĂTIREA SUBSTRATURILOR PENTRU CULTURA LA GHIVECE ȘI CONTAINERE

*The paper presents a study on the main pedological, agrochemical and biological indices of the different types of substrate used for growing vegetables in pots and containers in order to optimize the growth and development of plants. The researches were carried out in an experimental field set up at the Didactic Center of the University of Agricultural Sciences and Veterinary Medicine Iasi. Three types of substrate were used: S1 - commercially available substrate, S2 - substrate made from 35% garden soil, 35% compost, 20% peat, 10% pearl and perlite, S3- substrate made of earth 35% garden soil, 20% compost, 35% peat, 10% pearl and perlite. Determinations have been made on: texture, structure, porosity, field capacity, soil response, humus content and NPK. Substrate quality assessment was performed on the basis of the ecological specification sheet.*

**Maftai (Hriscu) Adriana, Stoleru Vasile, Munteanu Neculai** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

PARTICULAR RESULTS ON THE BIOLOGICAL MATERIAL FOR CULTIVATION IN THE MICROGREENS SYSTEM  
REZULTATE PERTIALE PRIVIND MATERIALUL BIOLOGIC PENTRU CULTIVAREA IN SISTEM MICROGREENS

*Microgreens represent a new category of vegetable products, different from the sprouts and the baby type products, with size varying from 3 to 10 cm, a shorter vegetation period and with an inedited appearance. The paper presents research on the possibility of production optimization for the microgreens, by evaluating the germination regime of the seeds for some leguminous plants suitable for this culture system. The germination study took place in the vegetable-growing laboratory of The University of Agricultural Sciences and Veterinary Medicine Iași. The SANYO MLR-35 1 H germinator model was used in this study. The leguminous species used where: green basil, red basil, red radishes, the moon radish, the early cabbage, the red cabbage and the green peas. The seeds from this species where germinated at different temperatures (from 15°C to 25 °C) making observations and determinations about the germination index IG. Based on this it was determined the germination velocity and the germination rate coefficient.*

**Teliban Gabriel Ciprian<sup>1</sup>, Munteanu Neculai<sup>1</sup>, Stoleru Vasile<sup>1</sup>, Popa Lorena Diana<sup>2</sup>, Stan Teodor<sup>1</sup>, Burducea Marian<sup>3</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine Iasi, Romania; <sup>2</sup>Agricultural Research and Development Station Secuieni-Neamt, Romania; <sup>3</sup>„Alexandru Ioan Cuza” University of Iasi, Romania)

THE INFLUENCE OF DIFFERENT FERTILIZERS ON THE PODS PRODUCTION OF COMMON BEAN THREE CULTIVRS  
INFLUENȚA APLICĂRII UNOR FERTILIZANȚI DIFERIȚI ASUPRA PRODUCȚIEI DE PĂSTĂI LA TREI CULTIVARE DE FASOLE PITICĂ

*The paper aim is to evaluate the production capacity of three varieties of dwarf bean - Ferrari, Rocquencourt and Maxidor (C) - under different fertilization conditions: organic-Orgevit-600 kg/ha, chemical-50 kg/ha, with microorganisms-50 kg/ha and the non-fertilized control variant. The experiment was established in the Experimental Field of Vegetable Growing, the University of Agricultural Sciences and Veterinary Medicine Iasi, in the 2016-2017 period. The crop was set up by direct sowing in the field, in three-rows bands, the distance between the bands being 60 cm and between the rows 45 cm. Plant spacing was set at 5 cm, resulting in a density of about 400 thousand plants/ha. The experimental results, under the abovementioned conditions, demonstrate the usefulness of the fertilization of the dwarf bean culture for the pods, the highest yield being obtained by applying chemical and microorganisms fertilization.*

**Peșteanu Ananie** (State Agrarian University of Moldova, Republic of Moldova)

THE EFFECT OF THE TREATMENT WITH NAD AND ANA BASED PRODUCT ON THE PRODUCTIVITY AND QUALITY OF LARGE FRUIT  
EFECTUL TRĂTĂRII CU PRODUSUL PE BAZĂ DE NAD ȘI ANA ASUPRA PRODUCTIVITĂȚII ȘI CALITĂȚII FRUCTELOR DE MĂR

*The study subject of the experience was Idared apple variety grafted on M9, trees were trained as slender spindles for distance 3.5 x 0.8 m. To study influence of growth regulator Auxiger (NAD – 1.5 g/L + ANA – 0.6 g/L) on average weight of fruits, fruit production and fruit size were experimented the following variants of treatment: 1. Control – without treatment; 2. Auxiger, 0.9 L/ha; 3. Auxiger, 1.8 L/ha. Growth regulator was sprayed one time, during the period of intensive fruit growing, when the fruits diameter was 22-25 mm (09.06.16). The research was conducted during the period of 2016 year. In the present research work, we demonstrated that Auxiger increase average weight of fruits, fruit production and fruit size and may be included in the technology system for cultivation of apple, applied one spray at 1.8 L/ha when the fruits diameter was 22-25 mm.*

**Ungureanu Ionuț-Vasile<sup>1</sup>, Istrate Mihai<sup>2</sup>, Iurea Elena<sup>1</sup>, Sîrbu Sorina** Error! Bookmark not defined. (Research and Development Station for Fruit Tree Growing, Iași, Romania; <sup>2</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

RESEARCHES CONCERNING THE BEHAVIOUR OF CHERRY VARIETIES WITH DIFFERENT RIPPENING PERIODS IN THE CONDITIONS OF THE NE OF ROMANIA  
CERCETĂRI PRIVIND COMPORTAREA UNOR SOIURI DE CIREȘ CU DIFERITE EPOCI DE COACERE ÎN CONDIȚIILE ZONEI DE NE A ROMÂNIEI

*The aim of this study is to improve the sweet cherry tree assortment for the NE of Romania by promoting the new cultivars created at RSFG Iasi, renewing the current sweet cherry tree assortment with new quality cultivars and especially extending the sweet cherry season, filling the existing gaps during the consumption period. At this time, the market is unbalanced in favor of cultivars in the first part of the fruit season. The tendency is towards rebalancing, by reducing the proportion of cultivars with medium season maturity and increasing the early and the late ones. In terms of productivity, the three-year average production (2016-2018) cultivars as follows Golia (19.7 kg / tree), Margonia (23.3 kg / tree) and Bucium (24.7 kg / tree) was remarkable. Regarding the average weight of the fruit, it recorded values between 4.8 g (Cetatuia) and 7.6 g (Bucium).*

## COFFEE BREAK / PAUZĂ DE CAFEĂ

### Chairmen:

Prof. dr. Valeriu V. COTEA  
Prof. dr. Liliana ROTARU  
Prof. dr. Radu SESTRĂȘ  
Conf. dr. Gheorghe NICOLAESCU

### Secretariat:

Asist. dr. Maria BRÎNZĂ  
Asist. dr. Monica HEREA  
Asist. dr. Gabriel TELIBAN

**Nicolaescu Gheorghe, Godoroja Mariana, Mogildea Olga, Nicolaescu Ana Maria, Nicolaescu Ana, Corobca Vladimir, Golovatic Viorel** (State Agrarian University of Moldova, Republic of Moldova)

THE ROLE OF LOCAL WINE VARIETIES ON THE DEVELOPMENT OF THE MOLDOVA WINE SECTOR  
ROLUL SOIURILOR AUTOHTONE DE STRUGURI PENTRU VIN ÎN DEZVOLTAREA SECTORULUI VITIVINICOL DIN REPUBLICA MOLDOVA

*The wine sector of the Republic of Moldova is a strategic sector, also the main resource in the national budget. At present, over 90 varieties of vines are accepted for cultivation, including 29 white wine varieties and 13 black wine varieties. At the same time, there are more than 160 clones of the basic wine varieties and over 20 varieties with the temporary admission status for testing under production conditions. Vineyard plantations with wine varieties predominate the varieties - Cabernet sauvignon, Merlot, Malbec, Pinot noir, Chardonnay, Sauvignon and others. The National Vine and Wine Office is making an enormous effort to promote Moldovan wine on the world wine market. But this can only be done with the local varieties specific to Moldovan climate conditions - Fetească neagră, Fetească regală, Fetească albă, Rare neagră etc. The purpose of this study is to analyze the varieties mentioned in various wine regions of Moldova.*

**Savin Gheorghe, Cornea Vladimir, Tofan Svetlana, Birsa Elena, Baca Ivan, Botnarenco Andrei** (Research and Practical Institute for Horticulture and Food Technologies, Chișinău, Republic of Moldova)

EVALUATION OF NEW GRAPEVINE VARIETIES AND PERSPECTIVE ELITES IN GENOFOND OF ISPHTA  
EVALUAREA UNOR SOIURI ȘI ELITE DE PERSPECTIVĂ DE VIȚĂ DE VIE ÎN CONDIȚIILE GENOFONDULUI ISPHTA

*In the paper are presented the agrobiological and ampelographic characteristics of the new varieties and elites, created and highlighted in the Republic of Moldova (National Institute of Vine and Wine, currently Scientific and Practical Institute for Horticulture and Food Technologies). Presented genotypes possess separately or in different combinations the characteristics necessary for a sustainable, competitive vitiviniculture: quality, including a different degree of seedlessness, productivity, increased or enhanced resistance to extreme fluctuations of temperature (in winter and in summer), to cryptogamic diseases, diverse use, long-term storage, transportability. The diversity of presented characters and properties is a valuable potential for completing existing assortment; serves as the basis for the development of organic production and as a strategic pre-breeding fund in future breeding programs.*

**Vacarciuc Liviu, Bogatîi E, Melnic Natalia, Minciuc Adriana** (State Agrarian University of Moldova, Republic of Moldova)

THE IMPACT OF ECO-AGROTEHNIC FACTORS ON THE FORMATION OF GRAPE QUALITY FOR ROSE WINE PRODUCTION  
IMPACTUL FACTORILOR ECO-AGROTEHNICI LA FORMAREA CALITĂȚII STRUGURILOR PENTRU PRODUCȚIA DE VINURI ROZE

*This article contain the last data in technology of pink wines preparation and their colour quality indicators. In addition, it is presented a complex of factors required for tipic colour formation on the primary stage of winemaking and extraction of antocyanes components obtained from red grapes. On the basis of new gentle technology were proposed for grape processing with low and high spare of phenolic components. In summary are formulated the technological requirements for clean-pink colour making and a number of important challenges in modern winemaking.*

**Buzdugan Vasile<sup>1,2</sup>, Niculaua Marius<sup>3</sup>, Luchian Camelia Elena<sup>1</sup>, Popîrdă Andreea<sup>1</sup>, Colibaba Lucia Cintia<sup>1</sup>, Scutarașu Cristina<sup>1</sup>, Cotea V. Valeriu<sup>1</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>“Al.I.Cuza” University from Iasi, Romania; <sup>3</sup>Research Center for Oenology of Romanian Academy - Iași Branch, Romania)

EVALUATION OF THE AROMA AND SENSORY CHARACTERISTICS OF PLUM DISTILLATES OBTAINED IN THE ARGES REGION  
DETERMINAREA CARACTERISTICILOR SENZORIALE ALE UNOR PROBE DE DISTILAT DE PRUNE OBȚINUTE ÎN REGIUNEA BAZINULUI POMICOL ARGEȘ

*Plum distillate is an alcoholic drink obtained by the fermentation and distillation of plums. Quality of plum distillate is determined by many factors, such as climate characteristics, soil, plum varieties and technological process. The aim of this study was to analyse the sensorial characteristics of plum distillate samples produced by authentic manufacturing process from Argeș region, Roumania (purchased from different producers). A total of 26 samples were analysed. A sensory analysis was realized by qualified professional testers, according to the method of positive scoring, based on sensorial experiences, which were marked with grades from 0 to 5, the average representing the intensity level of each marker being tracked. The analyzed characteristics may constitute a basis for the identification and authentication of the quality of these products.*

**Roșca Oleg** (Scientific and Practical Institute of Horticulture and Food Technologies, Chisinau, R. Moldova)

INFLUENCES TO DIFFERENT EXTENTS ON THE QUALITY OF THE FINISHED PRODUCT OF SPARKLING WHITE WINES  
INFLUENȚA DIFERITELOR MĂSURI ASUPRA CALITĂȚII PRODUSELOR DE TIP VIN ALB SPUMOS

*Currently winemaking sector highlighted the necessity of investigating and promotion of the grape varieties of new selection and classic european varieties to produce high quality sparkling wines. Therefore it was necessary to specify the optimal composition of blends based on raw white wines using classic european varieties and varieties of new selection. In this paper in capacity of blend components classical european varieties: Chardonnay, Riesling, Aligote, Sauvignon, Pinot blanc, Pinot gris and varieties of new selection: Muscat de Ialoveni, Floricica, Viorica, Hiberna were studied. It was determined, that the use of raw wines from classic european varieties and varieties of new selection as a blend component influences to different extents on the quality of the finished product.*

**Soldatenco E., Taran N., Morari B., Soldatenco O., Vasiucobici S., Roșca O.** (Scientific and Practical Institute of Horticulture and Food Technologies, R. Moldova)

THE INFLUENCE OF DIFFERENT COMPOSITION OF RED WINES BLENDS ON THE ORGANOLEPTIC INDICES AND ESTABLISHING THEIR PHYSIC-CHEMICAL PARAMETERS  
INFLUENȚA DIFERITELOR PROPORȚII DE AMESTECURI DE VINURI ROȘII ASUPRA INDICATORILOR SENZORIALI ȘI STABILIREA PARAMETRIILOR FIZICO-CHIMICI A ACESTORA

Red sparkling wines produced in Moldova occupy a special place on the wine market, but to improve the quality of the finished product it is necessary to improve the technological regimes for manufacturing base

wines for this category of wines. From these reasons, study was conducted on different raw red wines, from classical European varieties Cabernet Sauvignon, Merlot and Pinot Franc, comparing the influence of different composition of red wines blends on the organoleptic indices and establishing their physico-chemical parameters. As a result composition of blends from raw red wines and optimal content of phenolic substances including anthocyanins, for red sparkling wine production was established.

**Scutarașu Elena-Cristina<sup>1</sup>, Cotea Victor, Cotea V. Valeriu<sup>1</sup>, Niculaua Marius<sup>2</sup>, Luchian Camelia Elena<sup>1</sup>, Colibaba Lucia Cintia<sup>1</sup>, Nistor Alina Mihaela<sup>1</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>Research Center for Oenology of Romanian Academy - Iași Branch, Romania)

EVALUATION OF PHENOLIC COMPOUNDS BY AN ECOLOGICAL SPECTROMETRIC METHODS  
EVALUAREA COMPUSILOR FENOLICI PRIN METODE SPECTROMETRICE ECOLOGICE

*The study aimed to analyse phenolic compounds from wine samples using "ecological" spectrometric methods (low consumption of chemical reagents) comparing a traditional UV-VIS spectrophotometer compared to a microplate reader spectrometer. Different experimental samples were obtained with treatment with active carbon, gelatine and anionic resins of wines produced from Feteascăneagră grapes harvested at full maturity from Șuletea region, Vaslui County, with aprox. 290 g/L concentration in fermenting substances. A total of 43 samples were analysed. The microplate reader was shown to be an extremely efficient and economic tool for analysing wines because the linearity of the investigated methods was demonstrated to be comparative between devices. The time required in comparative analysis is considerably reduced in this case and the versatility of the method allows better statistical evaluation of parameters within the limit of 10% of the relevant significance.*

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

CONTRIBUTIONS TO THE KNOWLEDGE OF THE COLEOPTERAN ENTOMOFAUNA IN THE FRUIT TREE ORCHARDS OF APPLE  
CONTRIBUȚII LA CUNOAȘTEREA ENTOMOFAUNEI DE COLEOPTERE DIN PLANTAȚIILE POMICOLE DE MĂR

*The observations have been made in a fruit tree orchards owned by the Society S.C. Loturi Service SRL Delești, Vaslui country, Romania. The several varieties of apple are grown within this company: Starkrimson, Golden delicious, Idared, Wagner, etc. The Barber soil traps were used to collect the biological material, and they functioned continuously from May to September or even October in 2017. In the Barber traps, who found in of the plastic containers of about 10-12 centimeters in height and about 8-10 centimeters in diameter was placed a formalin solution of about 4% concentration. Six traps were used for each experimental variant. The experimental variants were set up, depending on the existing vegetal carpet. The samples were harvested at intervals of 7-14 days when we changed the fixing fluid – formalin, were filled in, or, if it was necessary it was replaced. The collected species were cleansed from all plant debris, other impurities and then separately selected coleopteran species, which by means of the determiners books were identified. The structure, dynamics and abundance of coleopteran species were then determined according to each experimental variant. The species of the coleopters, more frequently collected were: *Opatrum sabulosum* L., *Epicometis hirta* Poda, *Pseudophonus rufipes* De Geer., *Coccinella septempunctata* L., *Anthicus humilios* Germ.etc.*

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

RESEARCH ON THE COLEOPTERANS EPIGEUS FAUNA FROM SOME WHEAT CROPS  
CERCETĂRI PRIVIND FAUNA DE COLEOPTERE EPIGEE DIN UNELE CULTURI DE GRAU

*The study of Coleoptera (beetles) appears as a scientific and practical necessity, taking into account in particular their frequency on the terrestrial meridians, a large number of species (over 250,000), the largest of the Insecta class, grouping over one million species and many species to produce damage in world agriculture. The harvesting of the material is done using soil traps type Barber, from a wheat culture for consumption in Delești, Vaslui county. The observations were made in 2017, the collection of the materials was made from May to October. Harvesting is done at intervals ranging from 8 to 17 days, totaling 5 harvests. The most frequently collected species were: *Opatrum sabulosum* L., *Otiorrhynchus raucus* F., *Carabus violaceus* L., *Pseudophonus rufipes* F., *Harpalus aeneus* F. and *Amara crenata* Payk.*

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

OBSERVATIONS ON THE EPIGENOUS FAUNA OF WHEAT CROP IN THE CONDITIONS OF 2017  
OBSERVAȚII CU PRIVIRE LA FAUNA EPIGEE DIN CULTURILE DE GRAU ÎN CONDIȚIILE ANULUI 2017

The observations were made in 2017, in a wheat crop located in the eastern area of Romania, in the county of Vaslui. The material was harvested using the soil traps type Barber and entomological mesh, during which several harvests of the material were made at intervals of 8 to 15 days. From the collected biological material, were retained all the species belonging to the epigeal fauna, which were then determined by means of the determiners (Reitter, Panin, etc.). Following the records was established the specific structure from wheat crop, their dynamics and their abundance. The most frequently collected species were: Heteroptera, Hymenoptera, Diptera, Aracnidae, Orthoptera, and of course those belonging to the order of Coleoptera (*Pseudophonus rufipes* Mull., *Dermestes lanarius* Illig., *Harpalus aeneus* F., *Harpalus distinctus* Duft., *Ophonus azureus* F., *Opatrum sabulosum* L., *Otiorrhynchus raucus* F., *Carabus violaceus* L., *Pseudophonus rufipes*, *Harpalus aeneus* F. și *Amara crenata* Payk) etc.

**Tălmăciu Mihai<sup>1</sup>, Croitoru Nichita<sup>2</sup>, Panuta Sergiu<sup>2</sup>, Diaconu Alecu<sup>3</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>State Agrarian University of Moldova, Republic of Moldova; <sup>3</sup>Institut of Biological Research from Iasi, Romania)

THE PARASITOID COMPLEX OF THE ARCHIPS ROSANUS L. (LEPIDOPTERA: TORTRICIDAE) IN ORCHARDS

COMPLEXUL DE PARAZITOIZI AL SPECIEI ARCHIPS ROSANUS L. (LEPIDOPTERA: TORTRICIDAE) DIN LIVEZI

*Archips rosanus* (Linnaeus, 1758) is one of the foliophagous tortricids species (Lepidoptera: Tortricidae), whose larvae exhibit a large polyphagia, being reported on most of the fruit trees and shrubs, as well as on deciduous forestry trees. Among the natural enemies, the parasitoids of immature stages play an important role in the natural limitation of pest populations. By rearing of larvae and pupae collected on fruit tree species from various ecosystems, was obtained 32 primary parasitoids, belonging to the families Bethyliidae (1), Ichneumonidae (20), Braconidae (3), Chalcididae (1), Eulophidae (2) between Hymenoptera, Tachinidae (4) of Diptera, and Mermithidae (1) of nematodes, of which only *Itopectis maculator* F. from Ichneumonidae also behaves as a secondary parasitoid. Although it is the best studied parasitoid complex, of the 33 host-parasitoid relationships obtained, 13 are new for science and 19 are new for the fauna of Romania.

**Tălmăciu Nela<sup>1</sup>, Herea Monica<sup>1</sup>, Panuta Sergiu<sup>2</sup>, Tălmăciu Mihai<sup>1</sup>, Popovici Mariana** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>State Agrarian University of Moldova, Republic of Moldova)

DIVERSITY OF SMALL MAMMALS AND INTERSPECIFIC RELATIONSHIPS IN AN APPLE ORCHARD  
DIVERSITATEA MAMIFERELOR MICI ȘI RELAȚIILE INTERSPECIFICE STABILITE ÎN CADRUL UNEI LIVEZI DE MĂR

The study was realized from April 2017 to August 2018 in a conventional apple orchard from Delesti locality (Vaslui, Romania). The goals of this research was species richness and beta diversity. A total of 11 small mammal species were indentified in reserach time. Out of small mammals identified, the species *Musspicilegus* and *Apodemussylvaticus* are cohabitant species in all time investigated, while dominant species in our samples is *Microtus arvalis*. The results reveal that the structure of small mammals communities is correlate with condition of habitat and also, with intensity of agrotechnical procedures carried out during the vegetative season.

**Tudorache Valentin, Tălmăciu Mihai, Herea Monica, Andrici Cristian, Tălmăciu Nela** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

RESEARCHES REGARDING OF COLEOPTERAN FAUNA FROM SOME CROPS OF N-E MOLDAVIA  
CERCETĂRI CU PRIVIRE LA ENTOMOFAUNA DE COLEOPTERE EXISTENTĂ ÎN UNELE CULTURI AGRICOLE DIN N-E MOLDOVEI

The research was made out during the year 2016, in the experimental lots represented by the vegetable field through the cabbage culture, the corn culture and the apple orchard at Vasile Adamachi Iasi stationary. For the achievement of the objectives, there were placed 6 soil traps type Barber, with the help of which were collected the species belonging to different families of the Coleoptera order. Pitfalls it was represents by the plastic pots of 500 ml in which was used a salt solution 25% as the fixing fluid. The harvests were carried out throughout the agricultural year from May to September and among the identified coleopter species, with the highest number of specimens being the following: *Brachynus crepitans*, *Carabus lineatus*, *Coccinella septempunctata*, *Amara comunis*, *Carabus obovatus*, *Amara aenea* and *Carabus coriaceus*, and the largest number of specimens collected (70) was recorded in the apple orchards.

**Sestraș Adriana<sup>1</sup>, Militaru M.<sup>2</sup>, Titirica (Ancu) I.<sup>2</sup>, Dan Cătălina<sup>1</sup>, Andrean A.<sup>1</sup>, Mitre Viorel<sup>1</sup>, Sestraș Radu<sup>1</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Cluj Napoca, Romania; <sup>2</sup>Research Institute for Fruit Growing Pitesti, Romania)

YIELD AND RESPONSE TO THE MAIN DISEASES ATTACK OF PEAR CULTIVARS AND HERITABILITY OF THE TRAITS  
PRODUCTIVITATEA ȘI RĂSPUNSUL LA ATACUL PRINCIPALELOR BOLI ALE UNOR SOIURI DE PĂR  
ȘI HERITABILITATEA ACESTOR CARACTERISTICI

*In order to identify potential genitors for pear breeding, 17 varieties of European and Asian origin were tested for productivity and their response to pear scab (*Venturiapirina*) and septoria (*Septoriapyricola*) attack. During two consecutive years, the highest yields of pear trees were recorded for two Romanian varieties, Adria and Napoca. The best response to the pear scab and septoria diseases was recorded within Asian varieties, most of them being registered with a low degree of attack or without symptoms of attack. Some European varieties (i.e., Doyenné du Comice, Jubileu 50), or interspecific variety Kieffer Seedling, presented also a good response to diseases. The correlation between pear scab and septoria degree of attack statistically confirmed that the susceptible varieties to scab were also sensitive to septoria, and vice versa. The broad-sense heritability coefficients for yield and response to the diseases attack varied depending on the two algorithms used, but the lowest value was registered for the trees' response to the pear scab attack, this trait being more difficult to manage in pear breeding.*

**Pamfil Doru<sup>1</sup>, Pop Rodica<sup>1</sup>, Sisea Cristian<sup>1</sup>, Herța Monica<sup>2</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Romania, Institute of Advanced Horticulture Research of Transylvania, Laboratory of Biotechnology; <sup>2</sup>Institute of Plant Science, Research Laboratory for Plant Biotechnology, Cluj-Napoca, Romania)

NEW BIOTECH METHODS IN PLANT BREEDING  
NOI METODE BIOTEHNOLOGICE ÎN AMELIORAREA PLANTELOR

*In the last decade biotechnology offered for the plant breeding new advanced methods based on molecular biology. A comparison between classical and modern biotechnologies is presented, focussing on the development and future of the new methods of transgenesis, genome editing and synthetic genomics.*





## POSTER PRESENTATIONS

### Chairmen:

Prof. dr. Mihai **ISTRATE**  
Prof. dr. Mihai **TĂLMACIU**  
Prof. dr. Ion **SCURTU**  
Conf.dr. Adrian **ASĂNICĂ**  
Dr. Vincenzo Michelle **SELLITTO**  
C.S. I Dr. ing. Gelu **CORNEANU**  
C.S. I Dr. ing. Doina **DAMIAN**  
C.S. III Dr. ing. Alina **DONICI**

### Secretariat:

Asist. dr. Maria **BRÎNZĂ**  
Asist. dr. Monica **HEREA**  
Asist. dr. Gabriel **TELIBAN**

**Burnichi Floarea, Strugariu Carmen-Gabriela, David Monica, Petre Constantin, Teodorescu Eliza-Niculina**  
(Research and Development Station for Vegetable Growing of Buzău, Romania)

THE RELATIONSHIP BETWEEN SOME MORPHOLOGICAL TRAITS AND YIELD ON ORGANIC CLIMBING BEANS  
RELATIA DINTRE ANUMITE CARACTERISTICI MORFOLOGICE SI PRODUCTIE LA FASOLEA URCATOARE ECOLOGICA

*The "components of yield" approach has been used widely to explain variations in the yield of grain legumes. The study has been conducted at Vegetable Research and Development Station, under the normal testing conditions of 2018. The biological material was represented by 12 genotypes from the climbing beans (*Phaseolus vulgaris* L.) collection of the Physiology, Agro-chemistry and Organic Crops Laboratory. A significant genetic variability has been found between climbing bean genotypes, for all indicators which have been analyzed. Some elements which define the pod architecture, the thickness and width have had a significant positive influence on yield indexes for climbing bean genotypes. Two lines of the climbing beans collection (L49M and L6U) at VRDS Buzau (Vegetable Research and Development Station Buzau) have been identified with a very good performance in yield index on climatic conditions of 2018. These varieties could be used in the breeding program in agro-ecological system.*

**Călin Maria, Cristea Tina Oana, Ambăruș Silvica, Brezeanu Creola, Brezeanu Petre Marian', Sova Florin**  
(Research and Development Station for Vegetable Growing of Bacău, Romania)

THE STUDY OF KALE CULTIVARS BY SOWING AND SEEDLING IN AUTUMN CROP  
STUDIUL UNOR CULTIVARURI DE VARZĂ KALE PRIN SEMĂNAT DIRECT ȘI RĂSAD ÎN CULTURĂ DE TOAMNĂ

*The Nero di Toscana variety had very good suitability by sowing under drip irrigation conditions, followed by the varieties Dwarf Green Curled S, Larkezungen and Westlander Halbhoher. Under sprinkling irrigation conditions, the emergence of plants was reduced at Larkezungen variety at 50%, Westlander Halbhoher at 12.5%. The feature leaf/plant production varied as follows: Larkezungen - 542 g, Westlander Halbhoher - 347 g, Reflex F1 - 336 g, Black magic - 332 g, Dwarf Green Curled S - 322 g and Dwarf Green Curled - 312 g. Total yield (leaves + strains) was 825 g - Larkezungen, 434 g - Westlander Halbhoher, 422 g - Reflex F1, 380 g - Black magic, 372 g - Dwarf Green Curled S, - Fizz, 332 g - Nero di Toscana, 321 g - Pentland Brigg. Other varieties had a yield of less than 300 g / plant.*

**Cărbune Razvan-Dumitru<sup>1,2</sup>, Munteanu Neculai<sup>2</sup>, Stoleru Carmen-Maria<sup>3</sup>, Stan Teodor<sup>2</sup>, Stoleru Vasile<sup>2</sup>**  
(<sup>1</sup>FMC Agro Operational, Bucuresti, Romania, <sup>2</sup>University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania; <sup>3</sup>"V. Adamachi" College of Agriculture and Food Industry, Iasi, Romania)

PRELIMINARY RESULTS ON GERMINATION AND VELOCITY OF PEA SEEDS AT THE KELVEDON WONDER VARIETY  
REZULTATE PRELIMINARII PRIVIND GERMINATIA SI VELOCITATE SEMINTELOR DE MAZARE LA SOIUL KELVEDON WONDER

*The seed is an important factor of production that ensures the biological material necessary for the establishment of agricultural and horticultural crops. The seed of a cultivation will faithfully pass the characteristics determined by the genome if it has a higher cultural value, a primordial value determined by germination, purity and state of health. In the case of seed produced in the year 2016, the germination index varied from 84.0% determined to five days, up to 93.5% (on the ninth day). Germination speed is maximum at first determination (21.0%) and decreases to 8.5% when seed germination has reached the*

highest value during the 12 days. The velocity coefficient of germination has descended values, the lowest value of 8% registering on day 12, which can be genetically influenced, but also by storage conditions.

**Corduneanu Oana-Raluca, Țenu Ioan, Roșca Radu, Cârlescu Petru, Băetu Marius** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

RESEARCHES REGARDING THE INFLUENCE OF FERTILIZATION AND IRRIGATION METHOD OF TOMATOES OVER THE PRODUCTION  
CERCETĂRI PRIVIND INFLUENȚA METODEI DE FERTILIZARE ȘI IRIGARE A CULTURII DE TOMATE ASUPRA PRODUCȚIEI

*All forms of agriculture are based on the long-term fertility of a soil, strength and regeneration capacity. The time required to form one centimeter of soil is 1000 years. Forming, maintaining and preserving soil fertility is the greatest challenge for today's agriculture. The protection of soil structure, in addition to much-used methods, is achieved by proper water absorption and storage and leakage prevention. The European Union loses 970 million tons of soil per year due to water erosion. Drip irrigation has been scientifically proven to have more than 90% efficiency compared to conventional irrigation methods, the main benefits of water coming from the fact that water is absorbed by the soil, creating an immediate availability for plants, thus avoiding leakage or evaporation. Being a localized method, water is supplied only to those areas of the field that require irrigation (plant roots). This paper aims to address some aspects regarding the influence of the fertilization and irrigation method on the production level of tomato crop. The experiments were carried out in 2017 at Ion Ionescu University of Agricultural Sciences and Veterinary Medicine from Jassy, Department of Agricultural Mechanization and Vegetable Sector of Horticole Farm No. 3 "Vasile Adamachi" of the resort Didactic Research Station in Jassy. In order to achieve this purpose an installation for drip irrigation and fertilization plant was designed and built within the Agricultural Mechanization Department. The installation was composed from a tank fertilizer, an automatic watering system with programming capabilities and a water distribution system. The experience was set up in a semi-circular greenhouse tunnel of 135 m<sup>2</sup>, the influencing factors were the fertilization regime (with four graduations: fertilization with the irrigation water, fertilization with classical fertilizers, spread on the soil surface, fertilization with microorganisms and non-fertilized), and the watering method: drip irrigation and watering through gutters. The average number of fruits per plant in the crop year 2017 recorded values ranging from 12.29 fruit in the non-fertilized variant to 15.83 fruit per plant for the variant where drip fertilization was applied. The mass of tomato fruits varied, depending on the fertilization and irrigation method, from 246.71 g in the control variant to 270.66 g in the fertilized variant. The tomato production level showed a difference of 52.43 t / ha compared with the control variant and was considered to be "positively very significant". It was conclude that, for tomato crop, the experimental variant in which fertilization was applied was clearly superior to the other variants in terms of production level per hectare.*

**Cristea Tina Oana, Ambăruș Silvica, Călin Maria, Brezeanu Creola, Brezeanu Petre Marian', Prisecaru Maria** (Research and Development Station for Vegatable Growing of Bacău, Romania)

GENOTYPIC COMPETENCY IN EMBRYOGENESIS AT BRASSICA OLERACEA MICROSPORES CULTIVATED IN VITRO  
STUDII PRIVIND COMPETENȚA GENOTIPICĂ ÎN EMBRIOGENEZA MICROSPORILOR DE BRASSICA OLERACEA CULTIVAȚI ÎN VITRO

*In Brassica species the obtaining of doubled haploid plants is a key tool for the production of commercial F1 hybrids. Among the many methods employed for this purpose, the culture of isolated microspores offers the opportunity to generate double haploid embryos starting from single haploid cells, thus assuring the genetic purity of haploid plants obtained. The effect of donor genotype on the success of isolated microspores cultures was investigated by many authors in different cultivated species, the results demonstrate that it plays a key role. Genetic factors not only influence the viability of microspores and frequency of normal embryos but also the rate of plant regeneration. In this paper, a complete screening of microspores viability as well as embryo development under the influence of genotype is presented.*

**Farcaș Laura, Chiper Lidia, Radu Aurelia** (Research and Development Station for Vegatable Growing of Iernut, Romania)

THE STUDY OF THE CLIMBING POD BEANS REGARDING THE INFLUENCE OF THE CULTIVAR AND PLANT DENSITY PER HECTARE ON SEED PRODUCTION PER HECTARE UNDER THE ENVIRONMENTAL CONDITIONS OF RDSVG IERNUT  
STUDIUL INFLUENȚEI CULTIVARULUI ȘI A DENSITĂȚII PLANTELOR/HA ASUPRA PRODUCȚIEI DE SEMINȚE/HA LA FASOLEA DE PĂSTĂI URCĂTOARE, ÎN CONDIȚIILE DE MEDIU ALE S.C.D.L. IERNUT

*Have been studied four cultivars: the Mădăreșeni variety, L-Alina, L-Grasa of Iernut (Ghibolească) and L-Viola-2. The plant density per hectare was distinguished by the number of plants per hectare. Was maintained the distance between rows and was varied the number of plants on the planting hole. A great importance has the seed production on the planting hole depending by the number of plants on the planting hole and also the quality indices (EG, FG).*

**Gheorghiuoia Madalin, Achîței Vladuț, Teliban Gabriel, Stoleru Vasile** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

PRELIMINARY RESULTS ON ELECTRO-STIMULATION OF THE PHYSIOLOGICAL RHYTHM BY USING THE CONTINUOUS CURRENT AT THE SWEET PEPPER  
REZULTATE PRELIMINARII PRIVIND ELECTRO-STIMULAREA RITMULUI FIZIOLOGIC PRIN UTILIZAREA CURENTULUI CONTINUU LA ARDEIUL GRAS

*The goal of this research was to study the usefulness of the continuous current in a sweet pepper crop, the process that aims to accelerate the rhythm of flowering, fructification and ripening, obtaining more early harvests in conditions of food safety that does not affect consumers' health. Thus, by connecting the plant to a continuous current that will generate a negatively charged magnetic field, it stimulates the absorption from the soil of the essential mineral elements in terms of good development of plant growth and development. The method consists in creating a flow of electrons circulating from the plant's base to the top. This field that will be loaded in turn with negative electrical load, has the property to attract positively charged electrical loads. Essential metallic ions for the development of plant organisms are:  $K^+$ ,  $Na^+$ ,  $Mg^{2+}$ ,  $Ca^{2+}$ , positive electric load ions. The most favourable results were achieved in the case of a continuous current of 1.5 V, the positive pole being located in the apical area, and the negative one being inserted at the base of the plant's stem. By using this procedure, a number of nine fruits were formed after a period of 22 days after the emergence of the first flowers.*

**Zăgrean Alexandru-Valentin** (Vegetable and Flower Research and Development Institute Vidra, Romania)

YIELDING CAPACITY OF SOME *PLEUROTUS ERYNGII* MUSHROOM STRAINS  
CAPACITATEA DE PRODUCȚIE A UNOR TULPINI DE CIUPERCI DIN SPECIA *PLEUROTUS ERYNGII*

*Pleurotus eryngii mushrooms are widely produced for their excellent nutritional and medicinal qualities. This experiment was conducted to investigate the yielding capacity of three P.eryngii strains (Pery-G, Pery-K and Pery-26) cultivated on three variants of lignocellulosic substrate, four replicates/variant. The trial was performed in the mushroom house and the spawned bags (2 kg substrate) were randomized on racks with two levels. Pery-G strain showed the biggest production in the V2 variant (75% straws + 20% sawdust + 5% wheat bran and corn flour 1/1) with 544 g/bag (27,20%) and in the V1 (95% straws + 5% wheat bran and corn flour), with 534 g/bag (26,70%). Pery-26 strain yielded the best result of the experiment in the V2 with 548 g/bag (27,40%). All three experimental strains yielded the smallest harvests in the V3 variant (50% straws + 30% sawdust + 15% corn cobs + 5% wheat bran and corn flour 1/1).*

**Iurea Elena, Sîrbu Sorina, Corneanu Margareta, Ungureanu Ionuț Vasile** (Research and Development Station for Fruit Tree Growing, Iași, Romania)

ASSESSMENT OF BITTER CHERRY CULTIVARS OBTAINED IN S.C.D.P. IAȘI  
EVALUAREA UNOR SOIURI DE CIREȘ AMAR OBȚINUTE LA S.C.D.P. IAȘI

*The aim of the paper is to present the valuable features of bitter cherry cultivars obtained at SCDP Iasi, that improve the cultivars assortment with different maturation ages of the fruits sequenced all over the cherries' maturation season. Under the aspect of fruit's weight (g) and equatorial diameter (mm), the cultivars Amaris (5,1 g and 21,1 mm) and Amar Galata (4,1 g and 18,0 mm) got remarked statistically during the five years. They recorded very significant differences and distinct positive significant differences in comparison with the witness cultivar Silva (3,0 g and 15,8 mm). For the stone's size, the cultivars recorded a weight between 0,25-0,33 g, recording very negatively significant differences (Amar Maxut with 0,25 g) and negatively distinct significant differences (Amaris with 0,26 g) in comparison with the witness cultivar Silva (0,33 g). Regarding the fruits' resistance to cracking, Amar Maxut (0,3%), Amaris (0,3%) and Amar Galata (3,3%) present a resistance superior to the witness cultivar Silva (4,1%).*

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

EVALUATION OF NEW SWEET CHERRY CULTIVARS ADAPTED TO THE ROMANIAN NORTH-EAST CONDITIONS  
EVALUAREA UNOR SOIURI NOI DE CIREȘ, ADAPTATE CONDIȚIILOR DE CULTURĂ DIN NORD-ESTUL ROMÂNIEI

*The North East region, Iasi county, is the most important sweet cherry (*Prunus avium* L.) production region in Romania. However, in the last two decades, fresh cherry production consisted primarily of few cultivars as 'Stella', 'Bing', 'Boambe de Cotnari'. In recent years, there has been increased interest in planting new cultivars by North Eastern growers. New cultivars from around the world currently are being tested in high density orchards. Some selections are being evaluated for harvest timing, fruit size, productivity, firmness, resistance to rain-induced cracking and flavor. The most promising cultivars/selections include 'Kordia', 'Karina', 'Regina', 'Ferrovia' and 'Sweet Heart'.*

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

THE INFLUENCE OF THE PROBABLE CLIMATE CHANGE ON THE VEGETATION PHENOPHASES ON THE MERLOT VARIETY IN THE DEALU BUJORULUI VINEYARD  
INFLUENȚA SCHIMBARILOR CLIMATICE PROBABILE ASUPRA FENOFAZELOR DE VEGETATIE LA SOIUL MERLOT ÎN PODGORIA DEALU BUJORULUI

*The development of vegetation and fructification phenophases in vine is determined by the cumulative action of daily average temperatures exceeding the value of 10°C, a value that is considered a biological threshold for vine. In the climatic conditions of the last few years a random evolution of the amount of active and useful temperature levels necessary to trigger the phenological stages was observed. The research was carried out during 2008-2017 on the Merlot variety in the experimental field of the Research and Development Station for Viticultural and Winemaking Bujoru. The main objective of the paper is to establish the active and useful thermal balance necessary for the development of the vegetation phenophases and the determination of the trend of their evolution. There is a slight tendency to increase the active temperature for budburst and ripening phenophases and a decreasing pronounced trend for the flowering and harvesting phenophases.*

**Filimon Vasile Răzvan<sup>1</sup>, Filimon Roxana<sup>1</sup>, Damian Doina<sup>1</sup>, Nechita Ancuța<sup>1</sup>, Zaldea Gabi<sup>1</sup>, Alexandru Catalin<sup>1</sup>, Băetu Marius<sup>2</sup>, Rotaru Liliana<sup>2</sup>** (<sup>1</sup>Research - Development Station for Viticulture and Winemaking Iasi, Romania; University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

EVALUATION OF BERRY RESISTANCE TO DETACHMENT AND COMPRESSION OF SOME NEW VITIS VINIFERA L. CULTIVARS FOR TABLE GRAPES  
EVALUAREA REZISTENȚEI LA DESPRINDERE ȘI COMPRESIUNE A BACELOR UNOR SOIURI NOI VITIS VINIFERA L. PENTRU STRUGURI DE MASĂ

*Since quality requirements for table grapes are closely related to their mechanical characteristics, the aim of this work was the assessment of berry resistance to detachment from the pedicel and its resistance to compression at five new Vitis vinifera L. cultivars for table grapes: Gelu, Milcov, Napoca, Splendid and Transilvania. The determinations made on the mature berries consisted in the analysis of the normal pressing force and the deformation under its influence, as well as the force required for the detachment of berries from the pedicels, using a CETR UMT-2 tribometer. Grape berries with higher weight and volume and larger diameter (Transilvania cv.) incurred a higher mechanical deformation, while long berries (Gelu cv.) showed higher resistance to detachment from the pedicel probably due to a more pronounced development of vascular bundles, indicating a higher resistance of grapes to handling, packing, transport and storage.*

**Filimon Roxana<sup>1</sup>, Filimon Vasile Răzvan<sup>1</sup>, Nechita Ancuța<sup>1</sup>, Zaldea Gabi<sup>1</sup>, Damian Doina<sup>1</sup>, Rotaru Liliana<sup>2</sup>** (<sup>1</sup>Research - Development Station for Viticulture and Winemaking Iasi, Romania; University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

STUDIES ON THE PHENOTYPIC SIMILARITY OF AUTOCHTHONOUS GRAPEVINE CULTIVARS BY MEANS OF STATISTICAL-MATHEMATICAL METHODS  
STUDII PRIVIND GRADUL DE ASEMĂNARE FENOTIPICĂ DINTRE UNELE SOIURI AUTOHTONE DE VIȚĂ DE VIE PRIN UTILIZAREA METODELOR STATISTICO-MATEMATICE

*Use of statistical mathematical methods in the characterization of cultivars and determination of their degree of similarity provides important information concerning cultivars appurtenance to different sortogroups, the degree of relatedness between cultivars and their differentiation. The purpose of this study was to determine the degree of phenotypic similarity between 11 autochthonous grapevine cultivars based on the physico-mechanical, biochemical and physiological characteristics of grapes and leaves, using Cluster analysis, which admits the existence of polythetic groups and allows verification of genotype belonging to a varietal faction. Group with the lowest chaining index, indicating a high phenotypic similarity, was Coarnă neagră ~ Coarnă neagră selecționată, followed by Purpuriu ~ Cetățuia and Someșan ~ Milcov groups, fact justified by their common origin within the group. A lower degree of similarity was noted between Purpuriu and Radames cultivars, with Villard blanc as common genitor, and between Transilvania and Splendid cultivars (common genitor Black rose).*

**Nechita Ancuța, Zaldea Gabi, Alexandru C., Filimon Răzvan, Filimon Roxana, Damian Doina** (Research-Development Station for Viticulture and Winemaking Iași, Romania)

STUDIES ON THE INFLUENCE OF THE LOAD CHARGED ON THE TECHNOLOGICAL POTENTIAL OF RED CULTIVATED VINEYARDS IN THE WINE CENTER OF IAȘI COPOU  
STUDII PRIVIND INFLUENȚA ÎNCĂRCĂTURII DE ROD ATRIBUITĂ LA TĂIERE ASUPRA POTENȚIALULUI TEHNOLOGIC AL SOIURILOR ROȘII DE VIȚĂ DE VIE CULTIVATE ÎN CENTRUL VITICOL COPOU IAȘI

*The quantity and quality of the grape production depends on the biological potential of the varieties, the favorability of climatic conditions and the eye loads left to be cut. Achieving quality production with healthy grapes, high sugar concentrations and high phenolic content is a priority for viticulturists. In order to determine the influence of the fruit load attributed to cutting on the technological potential of the red varieties cultivated in the Copou Iași vineyard, the varieties Arcaș and Cabernet Sauvignon were studied. Three loads were tested: 20 eyes / bud (T1), 36 eyes / bud (T2) and 28 eyes / bud (M). The T1 variant was highlighted with reduced eye load, which positively influenced the size of the grapes, the accumulations of sugars and the phenolic compound content.*

**Pușcalău Mărioara, Bosoi Ionica, Mișu Ghică** (Research and Development Station for Viticulture and Oenology, Odobești, Romania)

REMUS - NEW VARIETY OF VINE FOR ROSE AND RED WINES WITH HIGH BIOLOGICAL RESISTANCE

REMUS - SOI NOU PENTRU OBTINEREA VINURILOR ROSE ȘI ROȘII CU REZISTENȚĂ BIOLOGICĂ RIDICATĂ

*The scientific research in the field of vine improvement, with a permanent role in the diversification the assortments of vine, is oriented both to the creation of new qualitative and productive genotypes, but also to the obtaining of genotypes with increased resistance to diseases and tolerance to stress factors. In order to respond to this goal, at R.D.S.V.O. Odobești, through the hybridization directed between the intraspecific hybrid (Băbească neagră x Fetească neagră) and the interspecific hybrid Couderc 14 (Vitis lincecumii x Aramon) has been obtained and homologated in 2016 the assortment called Remus. The new creation is characterized by small to medium sized grapes (167 g), small berry (1.9 g), with crisp core and dark red-purple coloured skin, the pulp is firm, semi-soft, very slightly colored. The average grape production is 4.0 kg/vin, respectively 15.5 tons/ha. It presents high biological resistance to major cryptogamic diseases. The grapes reach maturity in the epoch V. Are obtained the rose or red wines for current consumption or high quality, with an average alcoholic potential (11.5 – 12.0% alcohol by volume), relatively low acidity (5.8 - 6.8 g/l tartaric acid), and mean values of the non-reducing extract (17.9 - 19.5 g/l).*

**Rotaru Liliana, Colibaba Lucia Cintia, Cimpoi V.I.** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

BEHAVIOUR OF VARIOUS ROOTSTOCKS ON DIFFERENT TRELLISING SYSTEMS IN IAȘI VINEYARD

COMPORTAREA UNOR SOIURI DE VIȚE PORTALTOI CULTIVATE PE DIVERSE MIJLOACE DE SUSȚINERE ÎN PODGORIA IAȘI

*The appearance of the phylloxera on the European continent has in time led to a radical change in the system of vine propagation and cultivation, namely the transition to grafted vine-growing and the use of phylloxera-resistant American species as rootstocks. Cultivated in general to obtain cuttings for the rooting and grafting of grape varieties, rootstock varieties are an important factor in wine production. Therefore, the establishment of specific technological links for rootstock cultures should be the focus of specialists in viticulture. In the present study, during the year 2017 three varieties of rootstocks were studied, namely Berlandieri Riparia Kober 5 BB, Berlandieri Riparia Selection Oppenheim 4 and Chasselas Berlandieri 41 B, all cultivated in the ampelographic collection of USAMV Iași. Each of these varieties was trellised on the following systems: a 4 legged pyramid, a monoplane trellis with diagonal vine training and a T-shaped horizontal trellis. Following the studies, it was found that although the length of the canes was higher at pyramid training, the total length of the matured wood and implicitly, the production of cuttings was registered in the monoplane trellis with diagonal vine training. The weakest results were registered in the lead in T-shaped horizontal trellis.*

**Colibaba Lucia Cintia<sup>1</sup>, Cotea V. Valeriu<sup>1</sup>, Luchian Camelia<sup>1</sup>, Niculaua Marius<sup>2</sup>, Tudose-Sandu-Ville Stefan<sup>1</sup>, Călin Ioana<sup>1</sup>, Tincă Iulian<sup>1</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>Research Center for Oenology of Romanian Academy - Iași Branch, Romania)

STUDIES REGARDING THE PRODUCTION OF ROMANIAN BITTER  
CERCETĂRI PRIVIND PRODUCEREA BĂTURILOR TIP BITTER

*The present study has as main objective the evaluation of the methods of obtaining a bitter type curative beverage to evaluate the possibility of superior utilization of the medicinal plants. Aromatic and condimentary plants have been used. Among the plants used: Angelica archangelica, artichoke (Cynara scolymus), basil (Ocimum basilicum), Thymus serpyllum, Achillea millefolium, Juniperus communis, Hyssopus officinalis, Salvia officinalis, Origanum vulgare, Glycyrrhiza glabra, Mentha piperita, Melissa officinalis and Fir resin. The variants used were V1 - sweetening sugar, V2 - sweetening with liquorice V3 - unsweetened and V4 - alcohol of 50 ° instead of 40 ° C. The analyzes were performed according to scientific literature. Alcoholic strength, pH, phenolic compounds and sensory analysis were evaluated. The study shows that it is appropriate to prepare an herbal beverage. The medicinal plants used imprinted the beverage with hints of wild flowers, coniferous trees and other aromatic plants. The liquorice sweetened variant was the most appreciated by the tasters.*

**Gabur Georgiana-Diana<sup>1</sup>, Teodosiu Carmen<sup>1</sup>, Cotea V.Valeriu<sup>2</sup>, Peinado A. Rafael<sup>3</sup>, Lopez De Lerma Nieves<sup>3</sup>** (<sup>1</sup>"Gheorghe Asachi" Technical University of Iasi, Romania; <sup>2</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>3</sup>University of Cordoba, Spain)

AROMA PROFILE BASED ON ODOR ACTIVITY VALUES AND AROMATIC SERIES ANALYSIS IN RED WINES SUBJECTED TO DIFFERENT AGEING TYPES BY AMERICAN AND FRENCH OAK CHIPS  
PROFILUL AROMATIC BAZAT PE VALORILE ACTIVITĂȚII ODORANTE ȘI PE SERIILOR AROMATICE ÎN VINURILE ROȘII SUPUSE DIFERITELOR TIPURI DE MATURARE CU CHIPS-URI DIN STEJAR AMERICAN ȘI FRANCEZ

*The use of oak wood during the process of wine ageing is an ancient and common practice in most of the world's wine producing regions. The contribution of a chemical compound to the aroma of a wine was evaluated by determining the odour activity value (OAV). The last one, OAV, was calculated as the ratio between the concentration of an individual compound and the perception threshold reported in the literature. The analytical aroma profile was established by using the OAVs of each odorant compounds exhibiting similar odor descriptor grouped in an aroma series. Major aroma contributors in the Fetească neagră wine aged with American and French oak chips were the fruity, chemistry, fatty and floral series followed by the woody series. Red wines analyzed at 1.5 and 3 months present similar behavior but aged wines with 5 g/L of French oak chips distinguished from the rest when using PCA.*

**Murariu Otilia Cristina, Irimia Liviu Mihai, Robu Teodor, Murariu Florin** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE INFLUENCE OF STORAGE CONDITION ON SOME BIOACTIVE COMPOUNDS OF BERRIES AND THOSE HUMAN HEALTH PROMOTING  
INFLUENȚA CONDIȚIILOR DE PĂSTRARE ASUPRA UNOR COMPUȘI BIOACTIVI DIN FRUCTELE DE PĂDURE ȘI IMPLICAREA LOR ÎN SĂNĂTATEA UMANĂ

*The main criteria underlying this research consist in assessing the influence of the principal storage technologies on the content of some bioactive compounds contained by berry fruits. To balance fluctuations in product supply and market demand, fresh berry fruits often require short- or long-term storage in order to extend the supply of the berry fruits beyond the end of the harvest season. Understanding the interaction between the fruits and the environment is crucial for obtaining the most suitable conditions for extending shelf life. Portions of 250 g of strawberries, cranberries, gooseberries, blackberries or raspberries contain considerably more than the minimum daily requirement of vitamin C, while most of the other fruit can provide more than half the daily requirement. In order to freeze the berries fruits, generally no pretreatments are applied and therefore no changes in nutritive values occur during storage if proper packaging is used. During thawing, however, losses may occur. The fruits were monitored in three fixed time points of refrigerated storage conditions at 20C, and also after different freezing condition (-180C in laboratory freezing condition and from supermarket freezing condition). The biological material studied was represented by 4 types of berries, as follows: Vaccinium myrtillius, Ribes rubrum, Rubus fruticosus and Rubus idaeus which were assessed in terms of quality in fresh condition (T0 – moment), and after 3, respectively 7 days of refrigerate storage condition as well as after 6 month of freezing (in bulk and packaged in polyethylene bags). The soluble dry matter substances content was noticed to decrease in refrigerated storage condition between T1 and T2 time points ( $p \leq 0.001$ ). As concerning the differences in vitamin C content between fruits storage in bulk and packaged with polyethylene film were highlight significantly higher values ( $p \leq 0.001$ ) for all analyzed species that were packaged also in freezing storage conditions. When compared to the other fruits tested, the red gooseberries (43.5 mg/ 100 g), followed by raspberries (35,6 mg/ 100 g) were evidenced by their high vitamin C content. By keeping the fruits refrigerated for 7 days, although the sensory characteristics have undergone major changes, a significant decrease in vitamin C content is noted, however its final values at Tf moment are still remarkable: 27.8 mg/ 100 g for currants and 24.3 mg/ 100 g for raspberries.*

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

OBSERVATIONS ON THE USEFUL AND HARMFUL ENTOMOPHAGUS EXISTING IN THE APPLE TREE ORCHARDS  
OBSERVAȚII ASUPRA ENTOMOFAUNEI UTILE ȘI DĂUNĂTOARE EXISTENTE ÎN PLANTAȚIILE POMICOLE DE MĂR

*In this paper there are presented the results of observations made on the useful and harmful entomofauna existing in some apple tree orchards. The collection of the material was done using the soil trap type Barber method, permanently located from May to September in 2017 in an intensive apple orchard belonging to the S.C. Loturi Service SRL from Deleșt, Vaslui country. The samples were collected periodically at intervals of 10-14 days. The several variants were used, depending on the composition of the existing or over-planted vegetal carpet with different grass species. At each sample collection, all collected material was stored gauze and labeled, with each sample specifying: date of harvest, trap number and variant. The collected material belongs to several pendants, Arthropoda, Nematoda, clasa, Hexapoda, Crustacea, Arachnida etc., order, Coleoptera, Hymenoptera, Collembolla, Diptera, Orthoptera*

etc. Among the collected species we mention: *Opatrum sabulosum* L., *Epicometis hirta* Poda, *Gryllus* spp L., *Otiorrhynchus* spp. Germar., *Pterostichus* spp Bonelli, *Pseudophonus rufipes* De Geer.

**Perju Ionel, Boboc Cristina Ionela, Ungureanu Ionuț Vasile, Tălmăciu Nela, Sîrbu Sorina, Iurea Elena** (Research and Development Station for Fruit Tree Growing, Iași, Romania; <sup>2</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE BIOLOGICAL CYCLE OF THE CODLING MOTH - *CYDIA POMONELLA* L., AT WALNUT CULTIVARS UNDER THE CONDITIONS OF THE IAȘI FRUIT TREE ECOSYSTEM  
CICLUL BIOLOGIC AL VIERMELUI MERELOR - *CYDIA POMONELLA* L., LA SOIURI DE NUC ÎN CONDIȚIILE ECOSITEMULUI POMICOL IAȘI

*The purpose of this paper is to follow *Cydia pomonella*'s biological cycle with the help of pheromone traps in order to warn the treatments and to know the evolution of the pest in the NE area of Romania in the case walnut tree growing. Another objective pursued is to effectively combat this pest with plant protection substances. The observations were made in 2017, having as research material 14 walnut genotypes, in the 7<sup>th</sup> year since planting, being grafted on *Juglans regia* as rootstock. In case of variant 1 phytosanitary treatments with fungicides and insecticides were carried out and in the second variant (V2) no phytosanitary treatments were carried out, pest control being carried out by biotechnical means, using *AtraPom* synthetic sex pheromones traps. During this period the climatic factors, which influence the occurrence of the pest, were analyzed. Based on the observations made, the flight curve of the species was drawn in the studied area. Following the monitoring of the *C. pomonella*, we can warn the treatments according to the number of adults captured, as follows: for the first generation in the period 16-20.05.2017 and for the second generation in the period between June 25<sup>th</sup> to July 1<sup>st</sup>.*

**Șovărel Gabriela, Costache Marcel** (Vegetable and Flower Research and Development Institute Vidra, Romania)

ASPECTS REGARDING THE CONTROL OF PATHOGENS ON BELL PEPPER IN THE FIELD  
ASPECTE PRIVIND CONTROLUL AGENȚILOR PATOGENI LA CULTURA DE ARDEI GRAS DIN CÂMP

*The main objective of this experience was to develop a program of treatments for the control of pepper pests in the field. The experience was conducted in 2017 at ICDF Vidra, 5 variants, placed in randomized blocks, using the variety of bell peppers Buzau 10. In the crop of pepper in the field, the highest yields were recorded in variant I, which was applied to the following succession of products: T1. Copper Max 50 WP 0.25%; T2. Bravo 500 SC 0.2%; T3. Champ 77 WG 0.25%; T4. Orius 25 EW 0.05%; T5. Copper Max 50 WP 0.25%; T6. Ortiva Top 0.1% with 29.9 t / ha (19.6% increased yield compared with untreated control) and variant III T1. Copper Max 50 WP 0.25%; T2. Polyram DF 0.2%; T3. Champ 77 WG 0.25%; T4. Orius 25 EW 0.05%; T5. Copper Max 50 WP 0.25%; T6. Ortiva Top 0.1% with 29.7 t / ha (18.8% increased yield compared to the untreated control).*

**Tăbăranu Gabriel, Enache Viorica, Donici Alina, Bîrliga Nicolaie** (Research and Development Station for Vine and Winemaking Bujoru, Romania)

RESEARCH ON BIODIVERSITY CONSERVATION AND MANAGEMENT IN THE VITICULTURAL AGROECOSYSTEM IN THE DEALUL BUJORULUI VINEYARD  
CERCETARI PRIVIND CONSERVAREA SI GESTIONAREA BIODIVERSITATII IN AGROECOSISTEMUL VITICOL DIN PODGORIA DEALUL BUJORULUI

*The paper presents the research carried out at the Bujoru Viticulture and Wine Research and Development Station between 2016 and 2017. Research has focused on conservation and enhancement of functional and planned biodiversity through the implementation of all bio-resources of the greenhouse system and multifunctional protection areas, which are conducive to reducing the pathological risks and reducing external inputs (diesel, pesticides). Assessment of the state of conservation of biodiversity in the viticultural ecosystem of pogoria Dealul Bujorului. Biodiversity is a specific feature of our planet that ensures the optimal functioning of ecosystems, the existence and development of the biosphere in general. Lately, the issue of protecting biodiversity at ecosystems, species and populations has become increasingly vital to reducing the human impact on the biosphere. The viticultural ecosystem is defined as the functional unit of biosphere created and controlled by man in order to obtain high yields of grapes, of high quality and in more economical and socially advantageous conditions.*

**Tălmăciu Mihai<sup>1</sup>, Croitoru Nichita<sup>2</sup>, Panuta Sergiu<sup>2</sup>, Diaconu Alecu<sup>3</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>State Agrarian University of Moldova, Republic of Moldova; <sup>3</sup>Institut of Biological Research from Iasi, Romania)

ITOPLECTIS MACULATOR FABR. (HYMENOPTERA: ICHNEUMONIDAE) AND ITS HOSTS AMONG FOLIOPHAGOUS TORTRICIDS (LEPIDOPTERA: TORTRICIDAE) OF FRUIT TREES  
ITOPLECTIS MACULATOR FABR. (HYMENOPTERA: ICHNEUMONIDAE) SI GAZDELE SALE DINTRE TORTRICIDELE FOLIOFAGE (LEPIDOPTERA: TORTRICIDAE) ALE POMILOR FRUCTIFERI

*Itoplectis maculator* (Fabricius, 1775) (Hymenoptera: Ichneumonidae) is a primary and secondary endoparasitoid, pupal and / or larval, and solitary, with a large polyphagia. As a primary parasitoid, it is known from several species of the orders Lepidoptera (Tortricidae, Yponomeutidae, Geometridae, Noctuidae, and other), Coleoptera and Hymenoptera-Symphyta, and as a secondary parasitoid from species of Ichneumonidae and Braconidae (Hymenoptera). From the collected material, represented by larvae and pupae of foliophagous tortricids (Lepidoptera, Tortricidae) associated with apple and plum tree species, was obtained 6 species as primary parasitoid, and as secondary parasitoid, 3 species among Braconidae, and 2 among Ichneumonidae (Hymenoptera). Host-parasitoid relationships with *Ancyliis selenana* GN., *Hedya pruniana* HB., *Apophua cicatricosa* RATZB. și *Macrocentrus pallipes* NEES are new to science, and with *Archips rosanus* L., *Phytodietus polyzonias* FÖRST. *Macrocentrus linearis* NEES și *Meteorus ictericus* NEES, are new to Romania.

**Tălmăciu Nela<sup>1</sup>, Herea Monica<sup>1</sup>, Croitoru Nichita<sup>2</sup>, Tălmăciu Mihai<sup>1</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>State Agrarian University of Moldova, Republic of Moldova )

OBSERVATIONS ON CYDIA POMONELLA (APPLE WORM) DYNAMICS IN THR APPLE ORCHARDS AND WARNING ABOUT CHEMICAL TREATMENTS

OBSERVAȚII ASUPRA DINAMICII SPECIEI CYDIA POMONELLA (VIERMELE MERELOR), ÎN PLANTAȚIILE POMICOLE DE MĂR ȘI AVERTIZAREA TRATAMENTELOR CHIMICE DE COMBATERE

*Dynamics of adult the Cydia (Laspeyresia pomonella) flight was followed in the apple orchards owned by SC Service SRL Delești-Vaslui. For this purpose, it was used the pheromone traps such as Atra POM were purchased from the Chemistry Institute in Cluj-Napoca country. The traps were installed in the plantation from the first decade of May to September, with the pheromone being replaced within at 6 weeks. The readings were recorded at 3-5 day intervals, inventing the catches at each reading and captured butterflies were removed from the trap. Depending on the dynamics of the butterfly flight, it was established for each generation: - the beginning of the flight; - maximum flight; - the end of the flight. Finally, according to these data, the time of application of the chemical treatments for each generation was determined and according to the number of catches and the timeliness of their application.*



**3<sup>rd</sup> 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. Doina Mira **DASCĂLU**  
Conf. dr. Elena Liliana **CHELARIU**

**Secretariat:**

Asist. dr. arh. Mirela **COJOCARIU**  
Asist. dr. Codrina **GRECU**

Timp de prezentare: **5-7 minute**



**ORAL PRESENTATIONS**

**Dascălu Doina Mira, Cojocariu Mirela, Grecu Codrina, Pașcu Roxana** (University of Agricultural Sciences and Veterinary Medicine Iași, Romania)

RELATIONSHIP BETWEEN URBANISM AND LANDSCAPING  
RELAȚIA DINTRE URBANISM ȘI PEISAGISTICĂ

*Why in this early new millennium age landscape architecture has become an extremely effective tool of urban science? Because in the context of accelerated pollution and degradation of the Earth, the regeneration of the environment is possible mainly by using the morphological elements of landscaping. By interfering the urban and landscaping instruments of action, degraded, abandoned and polluted spaces are transformed, rehabilitated and regenerated. Whether it's about the conversion of abandoned areas into relaxation spaces, or about utility polluted areas transformed into multifunctional territory in order to stop erosion or floods and clean polluted waters, the ecological attribute is correlated with the sustainable and the aesthetic ones. Functional solutions arising from real needs of the environment and people, according to their characteristics, contribute to quality of life and, not least, to restore the self-esteem of residents.*

**Pralea Jeni, Teodor-Stanciu Silviu, Bălțeanu Alexandru Cristian** (National University of Art „George Enescu” Iași, Romania)

STRATEGIES OF PROTECTING THE ENVIRONMENT THROUGH ECO-DESIGN  
STRATEGII DE PROTEJARE A MEDIULUI ÎNCONJURĂTOR PRIN ECO-DESIGN

*The current paper comes with innovating solutions for recycling home waste which eventually pollutes the environment. The involvement of the designer in the education of the individual concerning respect towards the environment becomes a priority, taking into account the fact that 90% of the packaging is not biodegradable. The design of some commodities for home users is proposed beginning with eco-design principles, in order to optimize the recycling process of home waste, plastic and metal, result of home activities. Inspired from biomimesys, the devices can offer physical and psychological comfort to the user and contribute as well to the sustainable development of the strategies of protecting the environment. The paper presents various concepts made by students of Design section in Iași and a case study of one of them, all predicting an ethical profile of the adequate attitude of protecting the environment.*

**Prună Liviu, Slonovschi Andrei** ("Gh. Asachi" Technical University of Iași, Romania)

WORKFLOWS USED IN DESIGN OF THE DECORATIVE ELEMENTS FROM A GARDEN  
FLUXURI DE LUCRU UTILIZATE ÎN PROIECTAREA ELEMENTELOR DECORATIVE DINTR-O GRĂDINĂ

*When the computer program Inventor is used in order to design decorative and non-decorative elements from a garden, some workflows can be used and, is very useful to be known which workflow is properly in the given case. Starting from this, the authors made a comparative study, explained bellow, between these*

workflows, analyzing, step by step, each of them. Following this study, they arrived to some conclusions and recommendations, presented in the end of this paper, which are useful to follow in the case that is necessary to be chosen one workflow or other.

**Greco Condrina<sup>1</sup>, Cojocariu Mirela<sup>1</sup>, Purcaru Andrei<sup>2</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iași, Romania; <sup>2</sup>"Gh. Asachi" Technical University of Iași, Romania)

LANDSCAPE PLANNING OF URBAN GREEN SPACES - PSYCHOLOGICAL AND SOCIAL IMPACT ON THE INHABITANTS OF IASI  
AMENAJAREA PEISAGERĂ A SPAȚIILOR VERZI URBANE – IMPACTUL PSIHOLOGIC ȘI SOCIAL ASUPRA LOCUITORILOR

*It is known from history that the rapid development of culture, civilization, technology and the industry of a population in certain areas on the globe has been influenced by a favorable environment, either geographically and climatetically, or from the perspective of the absence of internal or external conflicts, or through the presence on their territories of mineral or flora and fauna resources, or even their own human resource. Extrapolating the idea above, this paper seeks, at the smaller scale of a city of today, how the environmentally arranged landscape can beneficial influence the general development of the respective urban area, but especially of its inhabitants, from both point physically-psychological-sanogenic, but also social and cultural, with examples from the city of Iasi.*

**Chelariu Elena Liliana, Ciulei Claudia** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

THE MAIN GARDENS OF WARSAW – PAST AND PRESENT  
PRINCIPALELE GRĂDINI ALE VARȘOVIEI – TRECUT ȘI PREZENT

*On territory of Poland could be found gardens and parks, small or large, formal or informal, private or public, one of them being a real historical encyclopaedia, reviving in present the image of past eras. Arrangement of some of them strongly depended by the influence of other nations. Polish nowadays gardens, have an abundant rich history, which starts with centuries ago and during eras the compositional styles suffered a series of transformations. Warsaw is one of the oldest cities in Poland, and the predominant architectural style is the baroque one, which could also be founded in gardens' design. Gardens are included inside as well as outside the city. In the current paper is presented an analysis of the oldest and emblematic gardens from Warsaw, identified the elements and features which are characteristic for them, design elements as well as their style. Also, is presented their evolution till present time, highlighting the main similarities and differences. The studied gardens were: Saxon Garden, Lazienki Palace Gardens, Wilanow Palace Gardens.*

**Chelariu Elena Liliana, Cojocariu Mirela, Draghia Lucia, Brînză Maria, Avarvarei Bogdan-Vlad, Bernardis Roberto, Amișculsei Petronica** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

'SISSI'<sup>®</sup> - COLOUR AND PERFUME INTO THE ROSES COLLECTION AT UASVM IAȘI, ROMANIA  
'SISSI'<sup>®</sup> - CULOARE SI PARFUM IN COLECTIA DE TRANDAFIRI DE LA USAMV IAȘI, ROMANIA

*In the current paper are presented the results regarding behaviour of 'Sissi'<sup>®</sup> roses in cropping conditions of roses collection from UASVM Iași, Romania. During vegetation period were monitoring the following features: bush form, bush vigour, aspect of leafage, resistance at pathogen agents attack, rod and floral peduncle, flowering intensity, rosebud shape, shape of opened flowers, flower's durability, colour of petals at opening, colour of petals at flowering, falling mode of petals, flowers' perfume, other aspects (adaptability at cropping conditions). At the end of research was observed that 'Sissi'<sup>®</sup> roses had a very good adaptation at cropping conditions from the NE area of Romania, decorating from spring till late in autumn with flowers which had a delicate and tender perfume.*

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

THE INFLUENCE OF CONSERVATION SUBSTANCES ON THE LIFE TIME OF CUT FLOWERS OF *ERYNGIUM PLANUM* AND *ECHINOPS RITRO*  
INFLUENȚA UNOR SUBSTANȚE DE CONSERVARE ASUPRA DURATEI DE VIAȚĂ A FLORILOR TĂIATE DE *ERYNGIUM PLANUM* ȘI *ECHINOPS RITRO*

*The species of the Eryngium and Echinops genres, by their ornamental characters and their ability to adapt to the most diverse ecological conditions, can provide valuable opportunities for enriching the floral range of plants for landscaping or cut flowers. The main objective of the paper is to highlight the decorative characters of these plants, as well as the efficient use of cut flowers used in the fresh state. The harvesting of the floral stems has been carried out from plants whose seeds have been irradiated with doses of 50, 100 and 250 Gy, as well as from non-irradiated plants (control). The solutions using to preserving cut flowers are: silver nitrate (0.002%), potassium benzoate (0.03%), boric acid (0.01%), Vital fleur (commercially preserved substance) and distilled water.*



## POSTER PRESENTATIONS

### Chairmen:

Prof. dr. Doina Mira **DASCĂLU**  
Conf. dr. Elena Liliana **CHELARIU**  
Şef lucr. dr. Diana **VĂSCĂ-ZAMFIR**

### Secretariat:

Asist. dr. arh. Mirela **COJOCARIU**  
Asist. dr. Roxana **PAŞCU**

**Bernardis Roberto<sup>1</sup>, Chelariu Elena Liliana<sup>1</sup>, Dascălu M<sup>1</sup>., Paşcu Roxana<sup>1</sup>, Zlati Cristina<sup>1</sup>, Poşta Daniela<sup>2</sup>**  
(<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Iaşi, Romania; <sup>2</sup>Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara, Romania)

OBSERVATIONS REGARDING MULTIPLICATION ON VEGETATIVE WAY OF *BUXUS SEMPERVIRENS* L. SPECIES IN IAȘI COUNTY CONDITIONS  
OBSERVAȚII PRIVIND ÎNMULȚIREA PE CALE VEGETATIVĂ A SPECIEI *BUXUS SEMPERVIRENS* L. ÎN CONDIȚIILE JUDEȚULUI IAȘI

*Within the multitude of dendrological species, the ones belonging to Buxus genus have a great importance in landscape design of green spaces, especially in conditions from Romania which are generally favourable and very favourable for these species. The aim of the paper is to highlight the multiplication potential on vegetative way of the most known species, respectively *Buxus sempervirens* L., which could be founded in Iași county. During vegetation period were carried out observations regarding action of rooting bio-stimulators and growing gain of roots' seedlings through determinations regarding rate of rooted seedlings, mean length of roots issued on seedlings and mean number of roots per seedling.*

**Cojocariu Mirela, Chelariu Elena Liliana** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

UTILIZATION OF 'GLORIOUS' ROSES IN URBAN LANDSCAPE DESIGNS  
UTILIZAREA TRANDAFIRILOR 'GLORIOUS' ÎN DIFERITE AMENAJĂRI PEISAGISTICE URBANE

*Rose, at which the first flowers bloom at the beginning of summer, with its various types of shapes, flavours and nuances, could be, in many situations, an inspired alternative for the décor of different landscape design types. The history of roses is long and contents a lot of symbols. Due to breeders' work, nowadays, we are enjoying an enormous variety of marvellous kinds. One of those is 'Glorious' kind which impresses us with beauty of flowers, with a long flowering season and with a very good resistance to pests and diseases. In the current paper we aimed to study the utilization of 'Glorious' roses in several types of urban landscape designs. Due to the shape, perfume and colour of flowers 'Glorious' roses could be utilized for different types of arrangements in urban areas.*

**Hangan (Istrate) Ana-Maria-Roxana, Stoleru Vasile, Gache (Lungu) Mirabela** (University of Agricultural Sciences and Veterinary Medicine of Iași, Romania)

PRELIMINARY STUDIES REGARDING THE USE OF VEGETABLE SPECIES IN THE CONCEPT OF URBAN GARDENS  
STUDII PRELIMINARE PRIVIND UTILIZAREA SPECIILOR LEGUMICOLE ÎN CONCEPTUL GRĂDINILOR URBANE

*This paper presents a literature preview regarding the use of vegetable species in the concept of urban gardens. The designing of the utilitarian gardens dates back from the antiquity when they were particularly important as a source of food. With the emergence of the concept of "edible landscaping", which promotes the use of edible plant species along with ornamental plant species in landscaping, the utilitarian garden has acquired aesthetic valences as an integral part of the green space set up on private property in the urban area and not only. Starting from the desire of people to have a place to produce some of the necessary vegetables and aromatic plants in the small space around the houses and to enjoy a recreation space, will be studied different systems of use of vegetable plants in order to develop concrete measures for the development of decorative vegetable gardens in the private environment in urban and periurban areas, taking into account the possibilities of association of the leguminous plants in raised beds.*

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

THE BEHAVIOR IN NURSERY OF SOME FRUIT TREE SPECIES WITH HIGH ORNAMENTAL VALUE  
COMPORTAREA ÎN PEPINIERĂ A UNOR SPECII POMICOLE CU VALOARE ORNAMENTALĂ RIDICATĂ

*Different ornamental characters, habitus, color, texture, given the adaptability of the various species to the site-specific environmental conditions, are the starting point for the choice of species for landscaping. Thus, it appears the opportunity to use a planting material well suited to the conditions of our country that create a sustainable ornamental effect. In the present paper we've studied the compatibility in grafting of ornamental fruit species grafted on different rootstocks and the behavior of the material in the nursery. Two grafting methods were tested: chip budding and grafting in 'T' with sleeping buds. For each of the five species studied, two types of rootstocks were used. For Prunus serrulata Kanzan Lindl. mahaleb rootstocks and wild cherry were used. Prunus cerasifera Pisardii Ehrh. was grafted on mirobolan and 'Roșior văratic'. And the species Malus baccata Borkh., Malus golden hornet Rehder. and Malus purpurea Rehd. were grafted on Malus sylvestris Mill and vegetative type MM 106.*

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

POSSIBILITIES OF USE AS IMMORTELLES OF *ERYNGIUM PLANUM* AND *ECHINOPS RITRO*  
POSSIBILITĂȚI DE VALORIFICARE CA IMORTELE *ERYNGIUM PLANUM* ȘI *ECHINOPS RITRO*

*The plants of Eryngium and Echinops genus have distinctive ornamental qualities, appreciated in the field of landscape design and especially art flower. In this paper are presented results and observations regarding the conservation of cut flowers of Eryngium planum and Echinops ritro, cultivated in Iasi, for the purpose of used as dried flowers. The drying of the inflorescences was achieved by the classical method and using a desiccant (silicate). The results obtained showed that both methods can be applied in order to dry the Eryngium and Echinops flowers.*



**4<sup>th</sup> 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

### Vegetable Growing Lab., Second floor

#### Chairmen:

Prof. univ. dr. Mihail **LUCA**  
Prof. univ. dr. Daniela **POPA**  
Prof. univ. dr. Vasile **STOLERU**

#### Secretariat:

Şef lucr. dr. Raluca Maria **HLIHOR**  
Şef lucr. dr. Lucia Cintia **COLIBABA**

Timp de prezentare: **5-7 minute**



### ORAL PRESENTATIONS

**Avram Mihaela<sup>1</sup>, Luca Mihail<sup>1</sup>, Marcoe Nicolae<sup>1</sup>, Luca Alexandru Lucian<sup>2</sup>** (1<sup>st</sup> Gh. Asachi<sup>st</sup> Technical University of Iasi, Romania; 2<sup>nd</sup> Polias-Instal<sup>st</sup> Company, Iasi, Romania)

POLLUTION OF THE RIPARIAN ENVIRONMENT BY THE TAZLAUL SĂRAT UPSTREAM RIVER  
POLUAREA MEDIULUI RIVERAN PE CURSUL SUPERIOR AL RÂULUI TAZLĂUL SĂRAT

*The paper presents an analysis of the pollution phenomenon in the Tazlăul Sărat River basin. The studies and researches were carried out on the upper course of the river, in the area of Zemeş locality, where there are a series of wells for oil extraction. The floods have morphologically altered the minor river bed, which has influenced the stability of the banks and river basins. Crude oil pipelines are located in the river bank. Field research has analyzed the river sector between "Toderaş" and "Canton of Maxim", which administratively belongs to the commune of Zemeş, Bacău County. The flood of June 2016 had an excessive impact on the stability of oil pipelines, a situation that caused the scrapping and suspension of the pipeline.*

**Chirica Ştefania, Luca Mihail, Lates Iustina** ("Gh. Asachi<sup>st</sup> Technical University of Iaşi, Romania)

CONSIDERATIONS ON THE GROUND POLLUTANT EFFECT ON DRINKING WATER CONVEYANCE  
PIPES  
CONSIDERAŢII PRIVIND EFECTUL POLUANT AL TERENULUI ASUPRA CONDUCTELOR DE  
TRANSPORT ALE APEI POTABILE

*The water supply system pipe networks are made of tubes and pipes joined by sockets or welds, on which a series of fittings are placed. The construction unit interacts with the degradation factors present on site. The research has shown that the main external mechanisms of pipe degradation result from the physico-chemical properties of the site's ground and external loads. External processes, which occur on the ground, lead to the degradation of the pipe network through the appearance of micro-pores, pores, fissures or cracks. Under specific operating conditions, water emission areas can become entering pathways for pollutants from the external environment inside the pipeline, causing the contamination of the drinking water conveyed. Considering the hydro-climatic phenomena in recent years, which have put pressure on viable drinking water resources, it is necessary to identify the external sources of degradation of the pipe networks.*



**Luca Alexandru Lucian<sup>1</sup>, Luca Mihail<sup>2</sup>, Chirica Ștefania<sup>2</sup>, Toma Daniel<sup>1</sup>** (<sup>1</sup>Polias-Instal" Company, Iasi, Romania; <sup>2</sup>Gh. Asachi" Technical University of Iasi, Romania)

CONSIDERATIONS ON THE VALUATION RAIN - WATERS TO WATERINGS OF THE "GREEN AREAS" OF CITY  
CONSIDERAȚII PRIVIND VALORIFICAREA APELOR PLUVIALE LA UDAREA "ZONEI VERZI" A ORAȘELOR

*Rain-waters have a problem of exploitation in any sewer system. European rules require the development of sewage systems for urban wastewater in Romania. Storm water must be collected and discharged separately from domestic and industrial wastewater. Some of the rainwater can be harnessed in the collection area by using them to supplement the volumes of water required to extinguish the fire. Rain-waters can be used to wash streets and platforms in localities. But an effective recovery of rainwater takes place in irrigation systems of green spaces. The sewer system consists of collectors, main collectors and storage tanks. The irrigation system of green spaces consists of water tanks, pumping stations and pipeline networks for the transport and distribution of water. The watering methods adopted are aspersion, micro-spraying, dripping and underground watering. The case study completed confirms the desirability of using pluvial waste water when watering green spaces.*

**Luca Alexandru Lucian<sup>1</sup>, Luca Mihail<sup>2</sup>, Chirica Ștefania<sup>2</sup>, Scripcariu Cristian-Florin<sup>1</sup>** (<sup>1</sup>Polias-Instal" Company, Iasi, Romania; <sup>2</sup>Gh. Asachi" Technical University of Iasi, Romania)

ANALYSIS OF POLLUTION PHENOMENON URBAN DETERMINED BY THE CANALIZATION NETWORKS  
ANALIZA FENOMENULUI DE POLUARE DETERMINAT DE REȚELELE DE CANALIZARE URBANE

*Sewage networks pose a risk of pollution to the environment due to the toxic nature of the waste water being transported. European rules provide for the separation of sewage systems from sewage from rainwater. Sewage collectors cause air pollution, groundwater, groundwater, groundwater and underground constructions, etc. Degradation of the constructive structure of the collector allows the emission of waste water and the underground infiltration of pollutants. These actions cause the tubes to burst, crack and crack the collector's wall and dome, perforate the accidental or intentional collector, etc. A serious pollution problem is the contamination of underground water sources. The case study drafted at a main sewer collector in Iasi highlights the multiple forms of environmental pollution. The pollution phenomenon affects all forms of environment in a serious form, and the impact is on a time determined by the application of the rehabilitation works.*

**Luca Mihail<sup>1</sup>, Luca Alexandru Lucian<sup>2</sup>** (<sup>1</sup>Gh. Asachi" Technical University of Iasi, Romania; <sup>2</sup>Polias-Instal" Company, Iasi, Romania)

STUDIES AND RESEARCH ON POLLUTION OF THE INDUSTRY ENERGY ON THE GREEN AREA OF THE CITY  
STUDII ȘI CERCETĂRI PRIVIND POLUAREA INDUSTRIEI ENERGETICE ASUPRA ZONEI VERZI A LOCALITĂȚILOR

*The urban environment is heavily influenced by the pollution generated by thermo-power plants. Their work program and the fuels used generate intense pollution of urban green spaces. In the case of thermoelectric power plants on gaseous and liquid fuels (methane + fuel), the emissions of the gases (CO, NO, NO<sub>2</sub>, SO<sub>2</sub>), which by hydration produce acids, occur in the atmosphere. Acid rains work on green areas continuously over the dominant wind direction. The case study conducted in the Iasi area indicated the pollution area, the concentrations of the pollutants and the lengths of the noxious transport in the considered area. The study of the dispersion of noxes in the atmosphere is done by modeling the functional phenomena of the polluting sources.*

**Luca Mihail<sup>1</sup>, Luca Alexandru Lucian<sup>2</sup>, Marcoie Nicolae<sup>1</sup>, Avram Mihaela<sup>3</sup>** (<sup>1</sup>Gh. Asachi" Technical University of Iași, Romania; <sup>2</sup>Polias-Instal" Company, Iasi, Romania; <sup>3</sup>A.B.A – Siret Bacău, Romania)

STUDIES AND RESEARCH ON ENVIRONMENTAL POLLUTION TO INDUSTRIAL WASTE DEPOSITS  
STUDII ȘI CERCETĂRI PRIVIND POLUAREA MEDIULUI DE CĂTRE DEPOZITELE DE DEȘEURI INDUSTRIALE

*The Moldovan area has a large number of industrial waste deposits containing mine waste, slag, ash, technological waste etc. The presence of the deposit causes the air, soil, subsoil, surface and underground waters, flora and fauna and the mental state of the people to be polluted. The case study made at a landfill site highlights the multiple forms of induced pollution and their serious consequences on the environment. The deposit consists of a mixture of slag, foundry residues, industrial liquids, etc., which are extremely aggressive in air, soil, surface and underground waters. Physical and chemical indicators analyzed for soil in the area adjacent to the landfill were pH, Cd (cadmium), Mn (manganese), P (lead), SO<sub>4</sub> (sulphate), etc. The pollution phenomenon affects all forms of environment in a serious form and the impact is indefinite.*

**Dincă Lucian<sup>1</sup>, Enescu Cristian Mihai<sup>2</sup>, Tatiana Blaga<sup>1</sup>** (National Institute for Research and Development in Forestry "Marin Drăcea", Brașov, Romania; <sup>2</sup>University of Agronomical Sciences and Veterinary Medicine of Bucharest, Romania)

USING THE ANALYTIC HIERARCHY PROCESS TO SELECT THE MOST IMPORTANT NON-WOOD FOREST PRODUCTS FOR IASI COUNTY  
UTILIZAREA PROCESULUI DE IERARHIZARE ANALITICĂ ÎN SELECTAREA CELOR MAI IMPORTANTE PRODUSE FORESTIERE NELEMNOASE DIN JUDEȚUL IAȘI

*In Romania, the non-wood forest products are mainly represented by the fauna of hunting interest, forest fruits, truffles and edible mushrooms and medicinal plants. The aim of this research was to study the most important non-wood forest products from Iași County. The analyze model used in similar studies done in the case of other counties across Romania was taken into account. The Analytic Hierarchy Process (AHP) was used to assess the performance of selected alternatives by means of pairwise comparisons. The analyses were carried out using the Expert Choice Desktop software package. Honey and pheasant were the most promising non-wood forest products, while the less promising was the European elderberry. According to the results of this study, we conclude that Iași County has a great potential for harvesting and marketing of NWFPS.*

**Popovici Laurențiu, Mihăilă Elena, Costăchescu Cornel, Constandache Cristinel** (National Institute for Research and Development in Forestry "Marin Drăcea", Romania; )

CAN AGROFORESTRY SYSTEMS BE ORDINARY PRACTICES IN ROMANIA?  
SISTEMELE AGROSILVICE POT FI PRACTICI OBIȘNUITE ÎN ROMÂNIA?

*Agroforestry system seems to be necessary in Romania because the climate has undergone important changes and some of ecosystems are degraded; agroforestry systems ensuring the long-term enhancement of environmental quality. There are some types of agro-forestry that can be applied in Romania, some have been applied to certain extent, others can be implemented for the first time. In the first category enters forestry shelterbelts for crops protection, pastures with trees, forestry shelterbelts for the protection of watercourses, the seconds includes other types of agroforestry systems among which it is presented a case study "agroforestry hunting system" which have been developed by smallholders farmers.*

**Daraban Gabriel<sup>1</sup>, Bădeanu Marinela<sup>2</sup>, Rusu Lăcrămioara<sup>3</sup>, Suteu Daniela<sup>1</sup>** (<sup>1</sup>"Gh. Asachi" Technical University of Iasi, Romania; <sup>2</sup>University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania; <sup>3</sup>Vasile Alecsandri" University of Bacau, Romania)

BIOPESTICIDES A NEW CHALLENGE IN ASSURING FOOD QUALITY AND SUSTAINABLE AGRICULTURE  
BIOPESTICIDELE - O NOUA PROVOCARE PENTRU ASIGURAREA CALITATII ALIMENTELOR SI PENTRU O AGRICULTURA SUSTENABILA

*The pesticides represent one of the most toxic compounds that affect the human health, these compounds having mutagenic and carcinogenic effects. One of the way by these compounds can get into the human body are the food. The use of biopesticides in the plants growth is part of "sustainable agriculture". Various biologically active compounds from plant sources have been shown to exhibit high efficacy, multiple mechanism of action, low toxicity to mammals, which has led to increased the interest in using them as biopesticides in a stabilized form and easy to handle. The aim of this paper is the study of some vegetal extracts with potential repellent effect, from the spontaneous flora of Moldavia/Bucovina in combating the pests.*

**Pei Gheorghe<sup>1</sup>, Brudea Valentin<sup>2</sup>** (<sup>1</sup>Transilvania University of Brașov, Romania; <sup>2</sup>"Ștefan cel Mare" University of Suceava, Romania)

PARASITOID WASPS AND THEIR INFLUENCE ON FOREST PEST POPULATIONS  
VIESPI PARAZITOIDE ȘI INFLUENȚA LOR ASUPRA POPULAȚIILOR DE DĂUNĂTORI FORESTIERI

*Parasitoid wasps are very important in reducing populations of little spruce sawfly (*Pristiphora abietina* Christ.), yearly percent of affected cocoons being between 23 and 35.2%. In laboratory conditions, 23% from the monitored cocoons was affected by parasitoid wasps, the largest share being owned by ichneumonids (19%). Was identified 2 new species of ichneumonids for Romania fauna (*Mesoleius ruficollis* Holmgren and *Ctenochira flavicauda* Roman). It is necessary to be made researches in this domain, to know better the parasitoid complex and the significant importance in pest control and the protective measures which must be adopted by the forest management.*

**Bacău Cristina, Merce Iuliana, Tabără Valeriu, Csoz Ioan** (University of Agricultural Sciences and Veterinary Medicine of Banat "Regele Mihai I al Romaniei" from Timisoara, Romania)

STUDY ON EFFICIENT USE OF BIOMASS AT NATIONAL LEVEL  
STUDIUL PRIVIND UTILIZAREA EFICIENTĂ A BIOMASEI LA NIVEL NAȚIONAL

*For the last years, more emphasis has been placed on the use of renewable resources for green energy production, and our country has a huge potential for capturing wind energy, solar energy and producing energy from biomass. At present, Romania does not have specific biomass policies or targets, although Romania has a high potential for biomass, mainly from agricultural (60%) and forestry (20%). Biomass is the most important source of renewable energy, which will play an important role in the global and European energy markets. The role of using biomass energy resources is all the more important as Europe's energy development and independence strategies target 20% renewable sources by 2020. At present, biomass utilization accounts for about 5% of total energy consumption at European level, and in countries like Finland, Sweden and Austria biomass provides 15-20%.*



## POSTER PRESENTATIONS

### Chairmen:

Prof. univ. dr. Mihail **LUCA**  
Prof. univ. dr. Daniela **POPA**  
Prof. univ. dr. Vasile **STOLERU**

### Secretariat:

Şef lucr. dr. Raluca Maria **HLIHOR**  
Şef lucr. dr. Lucia Cintia **COLIBABA**

**Bodale Ilie, Oancea Servilia, Cazacu Ana**, (University of Agricultural Sciences and Veterinary Medicine of Iaşi, Romania)

VALORIFICATION OF THE ECONOMIC POTENTIAL OF RARAU MASSIF BASED ON CLIMATE CONDITIONS  
VALORIFICAREA POTENTIALULUI ECONOMIC AL MASIVULUI RARĂU PE BAZA CONDIȚIILOR CLIMATICE

*The Rarau Massif is a mountain area exploited for tourism purposes since 1928, but recent climate change requires a re-analysis of the new weather conditions to propose a new economical capitalizing plan. In this paper we analyzed the main meteorological elements (temperature, precipitation, speed and frequency of wind) recorded by the Rarau meteorological station to highlight the economic potential of the area. In the Rarau massif, the air temperature during the summer months has increased, which is favourable for mountain tourism. This hypothesis is also supported by the decrease of the amount of rainfall during the summer. Our analysis shows that the heating of the air is due to the warm wind, predominantly in the east - west direction with relatively slow speeds (2 m/s). Instead, the temperatures have decreased in January - February which supports the construction of one of the longest winter sports slope in Romania. Acknowledgment: PN-III-TE-41/2018 grant.*

**Marin Anca Andreea Lixandru Benoni, Petrovici Milca, Sinitean Adrian, Vlad Florina Mariana, Ferencz Maria Alexandra, Morariu Florica** (University of Agricultural Sciences and Veterinary Medicine of Banat "Regele Mihai I al Romaniei" from Timisoara, Romania)

RESEARCHES REGARDING THE CHANGES OCCURRING IN THE STRUCTURE OF BENCTONIAN MACROINVERTEBRATES COMMUNITIES IN THE BEGA RIVER IN RELATION TO THE DEGREE OF POLLUTION CAUSED BY THE URBAN COMMUNITY AT THE LEVEL OF THE CITY OF TIMISOARA AND THE SURROUNDING AREA  
CERCETĂRI PRIVIND MODIFICĂRILE CE APAR ÎN STRUCTURA COMUNITĂȚILOR MACRONEVERTEBRATELOR BENCTONICE DIN RÂUL BEGA IN RAPORT CU GRADUL DE POLUARE PROVOCAT DE COMUNITATEA URBANĂ DE LA NIVELUL MUNICIPIULUI TIMIȘOARA ȘI ÎMPREJURIMI

*The benthic macro invertebrates are considered in this centure to be one of the most important biological parameters for the quality of surface waters and they have the following characteristics: they live in constant contact with the sediments where pollutants are accumulated, have a fairly long-lasting lifecycle. The aim of this study is to research the changes occurring in the structure of benctonian macroinvertebrates communities in the Bega river in relation to the degree of pollution caused by the urban community at the level of the city of Timisoara and the surrounding area. In June 2016, 20 quantitative samples of benthic sample were collected at different benthic zone in the Bega River water. Based on these values, we can say that the upstream segment waters falls into the category of superior quality compared to the waters of the central segment, especially in the downstream segment.*

**Luchian Camelia, Scutarășu Cristina, Popa Georgiana, Colibaba Lucia Cintia** (University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)

EVALUATION OF HEAVY METAL CONTENT FROM MOLDOVA AREA LAKES  
EVALUAREA CONȚINUTULUI DE METALE GRELE IN LACURI DIN ZONA MOLDOVEI

*Heavy metals in the water and, generally, in the environment may come from agricultural or industrial activities, from the use of fossil fuels, transport activities, and other human activities. The effects of heavy metal pollution on surface waters, and also on lakes, have been a disaster on ecosystems, with a long retention due to their poor mobility. In terms of health, these metals have different effects, depending on the degree of exposure and the type of pollutant. The purpose of this paper was to assess the quality of the water in five lakes in the Moldavian area: Ciric II Lake and the AnastasieFătu Botanical Garden Lake from Iași, Stâncă-Costești Lake and Guranda Lake from Botosani County, Fălțiceni Lake in Suceava County. The study revealed the impact of various human activities on the quality of water. Although the water was not found to be critically polluted regarding heavy metal load, the situation still remains a matter of concern.*

**Boboc Valentin, Biali Gabriela, Sârbu Gabriel Constantin** ("Gh. Asachi" Technical University of Iasi, Romania)  
ASPECTS REGARDING THE LAY-OUT OF THE FLOOD STRIPS AND THE ELABORATION OF HAZARD MAPS FOLLOWING THE SUBSIDENCE OF HYDROTECHNICAL WORKS  
ASPECTE PRIVIND TRĂSAREA BENZILOR DE INUNDABILITATE ȘI ÎNTOCMIREA HĂRȚILOR DR HAZARD ÎN URMA CEDĂRII LUCRĂRILOR HIDROTEHNICE

*The purpose of this paper is to emphasize the importance of damage that can occur due to man's negligence or most of the time due to accidents caused eg by breaking a dam. These accidents are called hydrological hazards. Hydrological hazards are natural phenomena, which imply the existence of water, which have a direct negative influence on people's lives, on society and on the environment as a whole. Knowing these phenomena allows for appropriate measures to limit the effects - loss of life, material damage and environmental damage - and reconstruction of the affected regions. The downstream propagation of the flood created by the breaking wave has a pronounced three-dimensional character. Changes to the major river bed along the flow cause accelerations with horizontal and vertical components on the flow axis. The water may flow laterally extending into releases or to the tributaries of the tributaries. Two-dimensional modeling is the recommended solution for current situations, meandering whites and localities in the vicinity of the analyzed water stream. The results of the flood study can be better used if integrated into a GIS model. By over lay technique, all data of interest can be stored, with specific representations of levels, speeds, times, and other elements of the evolution of the phenomenon*

**Bostan Cristian, Copăcean Loredana, Horablaga Adina, Bănățean Dunea I., Pascu M.S., Cojocariu Luminița** (University of Agricultural Sciences and Veterinary Medicine of Banat "Regele Mihai I al României" from Timisoara, Romania)

NATURAL PROTECTED AREAS FROM THE PANONIC BIOGEOGRAPHIC REGION, ROMANIA  
ARIILE NATURALE PROTEJATE DIN REGIUNEA BIOGEOGRAFICĂ PANONICĂ, ROMÂNIA

*Although it only covers 3% of the territory of the European Union, the Pannonian bioregion is home to a high biodiversity with some endemic species. In Romania, the Pannonian bioregion covers 6% of the national territory, and lies on a strip in the Western part of the country. The main purpose of our study is to evaluate the number, surface and distribution of protected natural areas at the level of Pannonian bioregulation in Romania. According to the data processed by specific GIS methods, before the designation of Natura 2000 sites, the area covered by protected areas was 1.59% (22371.86 ha) in the Pannonian bioregion, and now the area covered by protected areas has increased up to 13, 92% (217409.01 ha). Of the 79 protected bioreales, 2 have management structures, 26 are managed by the custodians and 51 do not have management or custody facilities, and 25 are under an approved management plan.*

**Colibaba Lucia Cintia, Rotaru Liliana Pintilescu Ionuț, Cimpoi Vlad, Aelenei Sergiu** (University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)

STUDIES ON THE AGROBIOLOGICAL AND TECHNOLOGICAL VALUE OF GRAPE VARIETIES FOR AROMATIC WINES CULTIVATED IN THE IASI VINEYARD  
STUDII ASUPRA VALORII AGROBIOLOGICE ȘI TEHNOLOGICE A SOIURILOR DE STRUGURI PENTRU VINURI AROMATE CULTIVATE ÎN PODGORIA IAȘI

*The purpose of this paper is to study the climatic conditions of 2017 and to correlate them with the quality of the grape varieties for aromatic wines (Busuioaca de Bohotin, Tămăioasa românească and Muscat Ottonel), from the Ampelographic Collection of the Faculty of Horticulture Iasi. The study of aromatic varieties under the conditions of the Iasi vineyard, Copou center is extremely important in the climatic conditions we are witnessing. The climatic conditions specific to 2017 and their influence on production (grape mass, sugars, acidity, mass of 100 berries, etc.) were analyzed. The line of production specific to Iasi vineyard, namely the production of aromatic wines, should be maintained also under the current climatic conditions.*

**Popa Daniela, Ciupureanu (Novac) Mihaela Gabriela** (Faculty of Horticulture, University of Craiova, Romania)  
ASSESSMENT OF THE MAIN QUALITY INDICATORS OF GRAFTED AND NON-GRAFTED WATERMELONS CULTIVATED ON THE SANDY SOILS FROM THE SOUTHERN ROMANIA  
EVALUAREA PRINCIPALILOR INDICI CALITATIVI AI FRUCTELOR DE PEPENE VERDE ALTOIT SI NEALTOIT CULTIVAT PE NISIPURILE DIN SUDUL OLTENIEI

*Starting from the premise that grafting is one of the most common biotechnologies applied in vegetable cultivation in Europe and Asia, where crop rotation is no longer an option and arable areas are already intensely used, this paper quantifies the grafting of watermelons from a qualitative point of view, under the conditions of the Dăbuleni sandy soils, with a poor supply of soil, with meteorological drought phenomena and agricultural drought risk, in the climatic conditions of 2017 year. The researches were carried out at CCDCPN Dăbuleni-Romania, in field conditions, on two cultivars of watermelon: autochthonous one - Oltenia, planted in grafted and non-grafted culture, and Romanza F1-derived hybrid, planted both grafted and non-grafted. The results obtained with regard to carotene content, total content of polyphenols, lycopene content, vitamin C content, titratable acidity, humidity, soluble dry matter content, pH, oxidative*

*capacity and conductivity recommend the cultivation of grafted watermelons in that area, as an ecological adaptation niche, increasing the resistance of plants to abiotic, thermo-hydric stress factors, improving resistance to low temperatures, heat, drought.*

**Bacău Cristina<sup>1</sup>, Gidea Mihai<sup>2</sup>, Mihalascu Costel<sup>2</sup>** (<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine of Banat "Regele Mihai I al Romaniei" from Timisoara, Romania; <sup>2</sup>University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania)

RESEARCH ON ENERGY EFFICIENCY AND AGRICULTURAL ECOSYSTEM UNDER THE INFLUENCE OF AGRO-TECHNICAL MEASURES IN MAIZE WHEAT  
CERCETĂRI PRIVIND EFICIENȚA ENERGETICĂ A ECOSISTEMULUI AGRICOL SUB INFLUENȚA MĂSURILOR AGROTEHNICE LA CULTURA DE PORUMB

*Against the background of global warming, increasing pollution and limiting the use of fossil fuels, demand for biomass has increased. To test the energy efficiency of the ecosystem was done in the M.Domneasca Farm in a bifactorial experience A=nitrogen(N) fertilization and B=the irrigation. The increase in N in the same Pagrofund has led to the increase of both the main production, the production of grains, thus maintaining the land use for agricultural production, as well as the secondary production that has a potential for use as biofuel. Increasing the irrigation level has led to a significant increase in the production of grain but also in the increasing the production of biomass. Analyzing energy efficiency and the ecosystem under the influence of technological measures, there is a significant increase in the amount of energy produced compared to the non-fertilized or non-irrigated control, the increase in proportion to the applied N dose and the watering norm.*

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

COPPER EFFECT ON THE SEEDLING GROWTH AND DEVELOPMENT FOR THE *ALYSSUM MURALE* SPECIES  
EFECTUL CUPRULUI ASUPRA CREȘTERII ȘI DEZVOLTĂRII RĂSADURILOR LA SPECIA *ALYSSUM MURALE*

*The aim of the undertaken research was to study the influence of copper on the seedling growth and development for the *Alyssum murale* species. The experiment was organized in 2 kg soil containers, in 4 variants of 4 repetitions, each repetition having 100 seeds. In order to study the influence of copper on the growth and development of the seedlings, the following doses were used: variant V<sub>1</sub>-20ppm, variant V<sub>2</sub> - 100ppm, variant V<sub>3</sub>- 200ppm, variant V<sub>4</sub> - 500ppm. The toxicity of copper was determined through biometric determinations: stem height number of leaves, internode length, mean length of the main stem, number and mean length of secondary roots and the photosynthetic pigments content by using the spectrophotometric method. The increase in copper concentration has induced a reduction of the mean plant height, the differences obtained being negative, very significant in variants V<sub>2</sub>, V<sub>3</sub> and V<sub>4</sub>. The increase in the copper content in the substrate, in variants V<sub>3</sub> and V<sub>4</sub>, has determined the decrease in the chlorophyll a content.*

**Nacu Gabriela, Nemes Lăcrămioara, Mocanu Anca Mihaela, Bulgariu Laura** ("Gh. Asachi" Technical University of Iasi, Romania)

REMOVAL EFFICIENCY OF Zn(II) IONS FROM AQUEOUS EFFLUENTS ON DIFFERENT TYPES OF WASTE BIOMASS  
EFICIENȚA INDEPARTĂRII IONILOR DE Zn(II) DIN MEDII APOASE PRIN BIOSORBȚIE PE DIFERITE TIPURI DE DEȘURI DE BIOMASĂ

*In this study was analyzed the ability of three types of waste biomass for removal of Zn(II) from aqueous solution. The three types of biosorbents that have been used in experiments are: sawdust, mustard waste and soia waste. These materials, which are waste from various branches of industry, can be used to remove metal ions from aqueous solutions, thus helping to reduce environmental pollution. The results for the influence of initial Zn(II) ions concentration and contact time on the removal efficiency from aqueous media were modelled using two isotherm models (Langmuir and Freundlich) and two kinetics models (first order model and second order model). The evaluation of biosorptive potential of these three types of waste biomasses in the removal processes of Zn(II) ions from aqueous solution was performed using the parameters obtained from the modeling.*

**Lucaci Alina Roxana, Bădescu Iulia Simona, Bulgariu Laura** ("Gh. Asachi" Technical University of Iasi, Romania)

OPTIMIZATION OF BIOSORPTION PARAMETERS FOR Cu(II) IONS REMOVAL BY RED AND GREEN MARINE ALGAE BIOMASS  
OPTIMIZAREA PARAMETRILOR DE BIOSORBȚIE PENTRU REȚINEREA IONILOR DE Cu(II) PE BIOMASĂ DE ALGE MARINE ROȘII ȘI VERZI

*Marine algae are an important biomass resource because of the many properties they have in solving various environmental problems such as the ability to decontaminate wastewater, soil decontamination, soil fertilization, etc. Heavy metal pollution is a problem for the environment. The development of industrial activities has led to increased emissions of heavy metals into the environment, with negative consequences for soils, plants, rivers and waters. Therefore, it is necessary to find appropriate methods that should be environmentally friendly in removing metal ions in a more efficient and inexpensive way. In this paper we optimized the biosorption parameters (influence of pH, influence of initial concentration, contact time) on the retention of Cu (II) ions on algae biomass, using algae *Callithamnion corymbosum* and *Ulva lactuca* algae from aqueous solutions.*

**Ortan Alina, Voaides Catalina, Turtoi Mira** (University of Agronomical Sciences and Veterinary Medicine of Bucharest, Romania)

**BIODETERIORATION OF PAPER ARTEFACTS INDUCED BY MICROORGANISMS - A SHORT REVIEW  
BIODEGRADAREA ARTEFACTELOR PE SUPTOR PAPETAR INDUSA DE MICROORGANISME – UN SCURT REVIEW**

*The cultural heritage is permanently threatened by the action of environmental factors, which cause a number of physico-chemical and biological degradations, in all types of artifacts. An important part of the cultural heritage is represented by books and other types of paper-based documents that have an increased risk of degradation, especially fungal and bacterial. Besides total destruction of the artifact, if measures are not taken to prevent and stop biodegradation, microbial attack can have a negative impact on the environment by production of spores, toxins or allergens. The present paper is a brief review of the main microbial species that can induce both biodegradation of artifacts and the release of biological particles into the environment. This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS/CCCDI – UEFISCDI, project number PN-III-P1-1.2-PCCDI-2017-0413, contract 50PCCDI/2018, PC2, within PNCDI III.*

**Biali Gabriela, Cojocaru Paula, Boboc Valentin** ("Gh. Asachi" Technical University of Iasi, Romania)

**MODELING EROSION DEGRADATION ON SLOPES USING GIS  
MODELAREA DEGRADARILOR EROZIONALE PE VERSANTI FOLOSIND GIS**

*This study presents the GIS techniques referring to the modeling of the process of degradation by erosion of the territory in the hydrological basin of Romania. On a surface of 3963 ha, the relief is strongly fragmented, presenting a relief energy of around 330 m with average slopes over 15%. The slopes are affected by the erosion and by the active sliding. The choice for this hydrographic basin is motivated also by the fact that there was the possibility of the validation of the results obtained by the simulation, comparing them with the measurements of the alluvial deposits in the lakes accumulation situated at the exit of the receiving basin. In our project, the geo-characteristic data are represented as layers. This facilitated the analysis of the spatial variables and the distribution of the objects on the surfaces studied and the overall analysis of the information obtained, that supposes the simultaneous approach of more layers could be realized using the "overlay" technique. Along the application we used a module of software ArcGIS specialized for the operations with digital maps and of the large databases. The mathematical model used to determine the damage of the soil is based on the RUSLE (Revised Universal Soil Loss Equation) equation under the usual form from Romania. The results are presented in the form of digital thematic maps.*

**Ghiga Simona Cecilia<sup>1</sup>, Simion Isabela Maria<sup>1,2</sup>, Raluca Maria Hlihor<sup>1,2</sup>, Gavrilescu Maria<sup>1,3</sup>** (<sup>1</sup>"Gh. Asachi" Technical University of Iasi, Romania; <sup>2</sup>University of Agricultural Sciences and Veterinary Medicine, Iasi, Romania; <sup>3</sup>Academy of Romanian Scientists, Bucharest, Romania)

**PERSPECTIVES ON E-WASTE ENVIRONMENTAL IMPACTS BASED ON LIFE CYCLE ASSESSMENT  
PERSPECTIVE REFERITOARE LA IMPACTUL ASUPRA MEDIULUI GENERAT DE DEȘEURILE ELECTRICE ȘI ELECTRONICE PRIN PRISMA EVALUĂRII CICLULUI DE VIAȚĂ**

*The large quantities of waste electrical and electronic equipment (WEEE) is one of the fastest growing waste streams nowadays. In this context, we used Life Cycle Assessment (LCA) to estimate the environmental impacts of electronic waste (e-waste). This study summarizes the results obtained focusing on a scenario which includes collection, handling and transport of e-waste to the recycler. LCA methodology was applied according to the international standards ISO 14040 provisions, by considering all LCA steps: goal and scope definition, inventory analysis, impact assessment and interpretation. The environmental impacts were analyzed in the impact assessment phase using GaBi software. The scenario included the analysis of environmental impacts generated by eight products (e.g. refrigerator, washing machine, personal computer, vacuum cleaner, TV CRT, body groom and kitchen appliances). The results showed that this scenario is environmentally friendly due to low environmental burdens generated from human toxicity, terrestrial ecotoxicity, freshwater ecotoxicity, and marine ecotoxicity categories.*

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A COMPARISON ON THE TOXICITY OF Cr(III) AND Cr(VI) IN PLANTS  
STUDIUL COMPARATIV ASUPRA TOXICITĂȚII Cr(III) ȘI Cr(VI) ÎN PLANTE

*Due to heavy metals persistence in the environment, soils are affected by fertility decreasing and worsening nutrition conditions for plants. Chromium, in its form as Cr(VI), is a well-known toxic contaminant to the environment. On the other side, chromium is present in all plant tissues as an essential element, which means that both its deficiency and excess can cause negative consequences to plants. Chromium toxicity in plants depends on its valence state. According to literature, Cr(VI) as being highly mobile is toxic, while Cr(III) as less mobile is less toxic. In this context, our work is focused on a comparative study of Cr(VI) and Cr(III) toxicity on the growth and germination of green lettuce seeds (*Lactuca sativa* L. var. *capitata*). We evaluated the germination rate, toxicity index and tolerance index of green salad seedlings under laboratory conditions, for 7 days to Cr(VI) and Cr(III). We observed that green lettuce seedlings have an increased resistance to Cr (III) and Cr (VI) solutions, being able to germinate up to 50 mg/L (60%) and 60 mg/L (75%) respectively. Comparing chromium solutions we noticed an increased tolerance index green salad seedlings to Cr(VI), of 91% for 60 mg/L. Our study showed that Cr(III) ion is more toxic to the germination of lettuce seeds, comparative with Cr(VI) ion, but further researches are necessary to show the mechanism behind the process.*





# NOTES





