

**UNIVERSITATEA PENTRU ȘTIINȚELE VIEȚII
„ION IONESCU DE LA BRAD” DIN IAȘI**

FACULTATEA DE HORTICULTURĂ



CONGRESUL ȘTIINȚIFIC INTERNAȚIONAL



PROGRAM

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

**21-22 OCTOMBRIE 2021
IAȘI**

“ION IONESCU DE LA BRAD” IAȘI UNIVERSITY OF LIFE SCIENCES

FACULTY OF HORTICULTURE



INTERNATIONAL SCIENTIFIC CONGRESS



PROGRAMME

SECTION
HORTICULTURE AND ENVIRONMENT ENGINEERING
“HORTICULTURE - SCIENCE, QUALITY, DIVERSITY AND HARMONY”

21-22 OCTOBER 2021
IAȘI, ROMANIA

PROGRAMUL CONGRESULUI

- **JOI, 21 OCTOMBRIE 2021**

9³⁰ – 10⁰⁰ - Deschiderea festivă a congresului – (on line via ZOOM)

10⁰⁰ – 12³⁰ - Lucrări în plen (on line via ZOOM)

- 10³⁰ – 11⁰⁰ : *Simulating The impact of Climate Change in Various European Vineyards*"

PhD, Senior researcher, CYRIL TISSOT (French National Centre for Scientific Research)

14³⁰ – 16⁴⁵ - Prezentarea lucrărilor pe secțiuni (on line via ZOOM)

16⁴⁵ - 17⁰⁰ – Pauză de cafea

17⁰⁰ – 18⁰⁰ - Prezentarea lucrărilor pe secțiuni (on line via ZOOM)

- **VINERI, 22 OCTOMBRIE 2021**

9⁰⁰ – 11⁰⁰ - Prezentarea lucrărilor pe secțiuni (on line via ZOOM)

- Workshop (on line via ZOOM)

11⁰⁰ -11³⁰ Concluzii. Închiderea lucrărilor congresului (on line ZOOM)

CONGRESS PROGRAMME

- THURSDAY, OCTOBER 21ST, 2021

9³⁰ – 10⁰⁰ – Congress opening - (on line via ZOOM)

10⁰⁰ – 12³⁰ – Plenary Session - (on line via ZOOM)

- 10³⁰ – 11⁰⁰ : *Simulating The impact of Climate Change in Various European Vineyards*"

PhD, Senior researcher, CYRIL TISSOT (French National Centre for Scientific Research)

14³⁰ – 16⁴⁵ - Paper sessions (on line via ZOOM)

16⁴⁵ – 17⁰⁰ – Coffee break

17⁰⁰ – 18⁰⁰ - Paper sessions (on line via ZOOM)

- FRIDAY, OCTOBER 22ND, 2021

9⁰⁰ – 11⁰⁰ – Paper sessions (on line via ZOOM)

- Workshop (on line via ZOOM)

11⁰⁰ – 11³⁰ - Conclusions. Closing ceremony of the Congress

SECȚIUNEA – HORTICULTURĂ ȘI INGINERIA MEDIULUI

SUBSECȚIUNEA I – ȘTIINȚE FUNDAMENTALE ÎN AGRICULTURĂ ȘI HORTICULTURĂ

On line via ZOOM

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

SUBSECȚIUNEA a II-a – TEHNOLOGII HORTICOLE

On line via ZOOM

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

SUBSECȚIUNEA a III-a – PEISAGISTICĂ

On line via ZOOM

*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

On line via ZOOM

*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 îndiguiri
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

1st SUBSECTION – FUNDAMENTAL RESEARCH IN AGRICULTURE AND HORTICULTURE

On line ZOOM

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

2nd SUBSECTION – HORTICULTURE TECHNOLOGIES

On line ZOOM

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

3rd SUBSECTION – LANDSCAPE ARCHITECTURE

On line ZOOM

*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*

4th SUBSECTION – ENGINEERING AND ENVIRONMENTAL PROTECTION

On line ZOOM

*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*

1st SECTION

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

BIOCHEMISTRY, CHEMISTRY, PHYSICS, BIOPHYSICS, MATHEMATICS, COMPUTER
SCIENCE, BOTANY, VEGETAL PHYSIOLOGY, GENETICS, PLANT BREEDING

On-line, via ZOOM

Chairpersons:

PhD, Prof. Lucia Carmen **TRINCĂ**
PhD, Assoc. Prof. Antoanela **PATRAȘ**
PhD, Lecturer Ciprian **CHIRUȚĂ**
PhD, Lecturer Alina **TROFIN**

Secretariat:

PhD, Lecturer Emilian **BULGARIU**
PhD, Assist. Prof. Paula Andreea **COZMA**

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



PLENARY SESSION
THURSDAY, OCTOBER 21st, 2021

14.30-14.40

Trincă Lucia Carmen¹, Cozma Paula Andreea¹, Scutărășu Cristina¹, Ariton Mirela², Ungureanu Elena¹, Trofin Alina¹

(¹Iasi University of Life Sciences, Romania; ²Research and Development Center for Cattle Breeding Dancu, Iasi, Romania)

STUDY OF THE SENSORY AND PHYSICO-CHEMICAL PARAMETERS OF APPLE CHIPS
STUDIUL PARAMETRIILOR SENZORIALI ȘI FIZICO-CHIMICI AI CHIPS-URILOR DIN MERE

Drying is a method that involves advantages, but also disadvantages. The main advantages are the direct consequence of decreasing the free water amount and consist in reducing the number of microorganisms, inactivating the enzymes that catalyze the degradative processes, increasing the shelf life and saving the storage space. The disadvantages concern sensory and physico-chemical changes such as color change, texture change, consistency, degradation of nutrients with metabolic importance for the human body. The article monitors the transformations undergone by three varieties of apples (Golden Delicious, Gala and Pinova) following normal thermal drying and various additional sweetening and coloring treatments, aiming to analyze the composition and main sensory and physico-chemical parameters of raw materials and final products. Apple chips are value-added products that can be stored for a long time, have an energy value (243 kcal / 100g product) almost five times higher than fresh apples (50 kcal / 100g product). The values of the sensory and physico-chemical parameters for the raw material apples and for the apple chips were within the framework of the standard norms, with variations depending on the variety and the applied treatment.

14.40-14.50

Patras Antoanela¹, Enache Iuliana-Maria^{1,2}, Ciurla Liliana¹, Ghendov-Mosanu Aliona³, Sturza Rodica³ (¹ Iasi University of Life Sciences, Romania; ²“Dunarea de Jos” University, Galați, Romania; ³Technical University of Moldova, Chișinău, Republic of Moldova)

THE POTENTIAL OF HORTICULTURAL WASTES IN THE CONTEXT OF THE CIRCULAR BIOECONOMY
POTENȚIALUL DEȘEURILOR HORTICOLE ÎN CONTEXTUL BIOECONOMIEI CIRCULARE

The horticultural products are well-known for their health-promoting potential. But, what about the waste resulting from their cultivation or consuming? It was proved that fruit and vegetable wastes are also excellent sources of natural dyes, antioxidants, and other beneficial compounds. Similarly as the horticultural products, their wastes contain phenolic compounds, carotenoids, vitamins, dietary fibers and other sugars, organic acids, minerals, and other components. Many of these are bioactive

compounds possessing health-promoting properties, due to their antioxidant, antibacterial, antitumor, antiviral, antimutagenic, and cardioprotective activities. As consequence, they may be recovered and use in functional foods, pharmaceutical products, cosmetics. Other applications of the horticultural wastes are in environmental depollution and in compost preparation, in line with the "zero waste" principle of the circular bioeconomy.

14.50-15.00

Cozma Andreea Paula¹, Măciucă Iulia Elena², Zendri Flavia², Rîmbu Cristina¹, Moroşan Şerban¹, Trincă Lucia Carmen¹, Timofte Dorina² (¹Iaşi University of Life Sciences, Romania; ²Department of Veterinary Anatomy, Physiology and Pathology, Institute of Infection, Veterinary and Ecological Sciences, University of Liverpool, Neston, United Kingdom)

PREVALENCE AND CHARACTERIZATION OF EXTENDED B-LACTAMASES AND PLASMID MEDIATED QUINOLONES RESISTANCE IN ENTEROBACTERIACEAE ISOLATED FROM PETS

PREVALENȚA ŞI CARACTERIZAREA TULPINILOR DE ENTEROBACTERIACEAE PRODUCĂTOARE DE EZNIMÉ B-LACTAMAZE CU SPECTRU EXTINS ŞI A REZISTENȚEI MEDIATE PLASMIDIC LA CHINOLONE IZOLATE DE LA ANIMALE DE COMPANIE

This study aims to determine the prevalence of beta-lactamase enzymes (TEM, SHV, OXA), extended spectrum beta-lactamases (ESBL), and genes encoding plasmid-mediated resistance to quinolones (PMQR) (qnr A, qnr B, qnr S) in Enterobacteriaceae (Escherichia coli and Klebsiella pneumoniae) isolated from pets. One hundred and twenty four faeces samples were collected sterilely from healthy dogs and cultivated on Brilliance ESBL medium (Oxoid, UK). ESBL screening was performed by the combined disc test (MAST Group, UK). The identification of E. coli strains was performed by molecular identification of uidA / uspA genes, and for K. pneumoniae strains the identification was performed based on biochemical tests (TSI, MIU, API). Antimicrobial susceptibility testing was performed by the disk diffusion method on Mueller-Hinton medium using beta-lactam and non-beta-lactam antibiotics. Identification of genes encoding beta-lactamase enzymes and genes encoding plasmid-mediated resistance to quinolones was performed by PCR according to the protocols previously described. Following ESBL screening, 31/124 (25%) extended spectrum cephalosporin (ESC)-resistant Enterobacteriaceae strains were obtained and 21/31 (67.74%) of this were confirmed as being ESBL. Twenty seven (87.1%) strains were confirmed as being E.coli and four (12.9%) strains, Klebsiella pneumoniae. All strains showed resistance to ampicillin, 77.41% to amoxicillin/ clavulanic acid, 61.29% to sulfamethoxazole/ trimethoprim, 58.06% to tetracycline, and 45.16% to chloramphenicol, gentamicin, and enrofloxacin respectively. The bla_{CTX-M-1} gene group was predominant (10/17; 58.82%), followed by the bla_{CTX-M-9} group (7/17; 41.18%). The bla_{TEM}, bla_{SHV} and bla_{OXA} genes groups were identified in 17/31 (54.83%), 9/31 (29.03%), respectively 1/31 (3.22%) of the analyzed strains, in some isolates, being present only bla_{TEM} genes (6 /31;19.35%), bla_{SHV} genes (4/31; 12.9%), combinations such as bla_{TEM} and bla_{SHV} (4/31; 12.9%) and only one strain (1/31; 3.22%) with bla_{TEM}, bla_{SHV}, bla_{OXA} genes. The prevalence of PMQR genes was 22.58% (7/31) and consisted only of qnrS (6/31; 19.35%) and qnrA (1/3 3.22%) genes. The results indicate a high prevalence of ESBLs and PMQR genes in Enterobacteriaceae strains isolated from the faeces of healthy dogs, which means that pets could be a risk in spreading the ESBL strains to other animals or to owners.

15.00-15.10

Pădureanu Silvica (Iaşi University of Life Sciences, Romania)

PALYNOLOGICAL CHARACTERIZATION AND GERMINATION OF TULIPA GESNERIANA L. POLLEN
CARACTERIZAREA PALINOLOGICĂ ŞI GERMINABILITATEA POLENULUI DE TULIPA GESNERIANA L.

In this paper are highlighted the main palynological characteristics of a popular genotype in the culture of ornamental plants, namely Tulipa gesneriana. Palynological investigations focused on: shape, color of pollen granules, exine ornamentation, size of pollen granules, number of germinative pores/pollen granule. The study is completed by establishing the germination capacity of pollen grains, for which tests of germination capacity were performed on carbohydrate-enriched artificial mediums in different concentrations. Carbohydrates added to the nutrient mediums were represented by sucrose and glucose, depending on which two categories of nutrient media were formed: sucrose mediums and glucose mediums. Tulipa gesneriana pollen has been found to have a predilection for sucrose-containing nutrients compared to glucose. The highest level of germination (90%) was achieved on the medium with a concentration of 5% sucrose. The results of this study are important for the taxonomy of this genotype and in breeding programs.

15.10-15.20

Pădureanu Silvica (Iași University of Life Sciences, Romania)

PECULIARITIES OF GROWTH OF POLLEN TUBE OF *TULIPA GESNERIANA* L.
PARTICULARITĂȚILE CREȘTERII TUBULUI POLINIC DE *TULIPA GESNERIANA* L.

Building and growing the pollen tube are essential aspects of pollen biology. Pollen tube is a strategy for fertilizing siphonogamous plants by delivering immobile male gametes to the oosphere and central cell of embryonic sac, so that male gametes do not come into contact with external environment. The optimal length of the pollen tube is correlated with length of pistil that must pass through to achieve fertilization. The present study highlights the building and growth of tulip pollen tube in different environmental conditions. Environmental conditions differed in type and concentration of carbohydrates in the nutrient mediums. Two categories of mediums were created: with sucrose and with glucose. Tulip pollen was monitored for 120 hours. It has been shown that 5% sucrose in medium is more efficient than glucose, ensuring growth of the longest pollen tubes reaching 10000 μm . Research has further demonstrated viability of pollen tubes for 120 hours.

15.20-15.30

Călin Marius¹, Chiruță Ciprian¹ (¹Iași University of Life Sciences, Romania)

USING RELATIVE GRADING FOR REMOTE ONLINE EXAMINATIONS DURING COVID-19 PANDEMIC
UTILIZAREA NOTĂRII RELATIVE ÎN CADRUL EXAMENELOR ONLINE LA DISTANȚĂ SUSȚINUTE ÎN
TIMPUL PANDEMIEI COVID-19

During the university years 2019-2020 and 2020-2021, COVID-19 imposed restrictions on all the teaching activity, including online, remotely conducted exams. One sensitive problem was to ensure that the awarded grades show as fairly as possible that each student's outcome is reflected correctly by comparison against those of his or her peers. The paper shows how relative grading was utilized to assess results at Information Technology exams and compares the awarded grades against those before the COVID-19 pandemic.

15.30-15.40

Sonea Andromeda Cristina (Iași University of Life Sciences, Romania)

THE LATTICE STRUCTURES ASSOCIATED TO COMPLETE HYPERGROUPS
STRUCTURI LATICEALE ASOCIATE HIPERGRUPURILOR COMPLETE

According with representation theorem for complete hypergroups, we can determine a relationship between the lattice of subgroups associated with a group and the lattice of subhypergroups associated with complete hypergroups. Also, we present some examples to illustrate this connection.

15.40-15.50

Cazacu Ana¹, Pereș Cătălina¹, Teliban Gabriel Ciprian¹, Stoleru Vasile¹, Bodale Ilie¹ (¹Iași University of Life Sciences, Romania)

EVALUATION OF THE EFFECTS OF GOLD NANOPARTICLES IN CHITOSAN ON HYACINTH PLANTS
EVALUAREA EFECTELOR NANOPARTICULELOR DE AUR ÎN CHITOSAN ASUPRA PLANTELOR DE
ZAMBILE

In the research on the influence of nanoparticles on plants, it is important to identify both the optimal concentrations of nanoparticles and the growing stage in which the plant is sensitive to a certain type of treatment. The study on the influence of nanoparticles on hyacinth bulbs was carried out in an experiment in which 4 treatment variants were used simultaneously, each variant having 3 repetitions. Two solutions with different concentrations of gold nanoparticles in chitosan (25 and 50 $\mu\text{g/mL}$) were used as treatment, and the samples in which either a chitosan solution or water was administered were considered as controls. To each hyacinth bulb, 2 ml of a certain solution was applied. Thus, the aim was to improve the sprouting of hyacinth bulbs and of biometric indicators such as hyacinth height, number of leaves and percentage of flowering. It has been observed that the nanoparticle treatments act differently depending on the growing stage of the plant. From the analysis of the results we can state that the treatment with gold nanoparticles in a concentration of 50 $\mu\text{g/mL}$ is good for stimulating the plant growth, but it is not effective in their development, the most suitable solution as a treatment being that of gold nanoparticles in a concentration of 25 $\mu\text{g/mL}$.

15.50-16.00

Cazacu Ana¹, Ceică Bogdan², Bodale Ilie¹ (¹Iași University of Life Sciences, Romania; ²"Al. I. Cuza" University of Iași, Iași, Romania)

THE EFFECT OF CLIMATE CHANGE ON THERMAL BIOCLIMATE INDICES IN THE IASI REGION

EFECTUL SCHIMBĂRILOR CLIMATICE ASUPRA INDICILOR BIOCLIMATICI TERMICI ÎN REGIUNEA IAȘI

The influence of environmental factors on plant growth and development is a well-known fact, and in agrometeorology, bioclimatic indices are used to quantify this influence. In recent years, plant growth technologies have been manipulating these factors to ensure the optimal conditions needed to improve agricultural production. In greenhouses, these factors can be controlled to ensure optimal growing conditions, but in the field, plants will be influenced by their variation. In order to understand how bioclimatic indices change as a result of climate change, we propose the evaluation of the most important thermal index in horticulture, namely the growing degree days index. The analysis of the air growing degree days is important to be able to calculate the state of vegetation in which the plant is, but also to estimate the period when it passes from one growing stage to another. Global warming has as a consequence the increase of the heat accumulated by the plant in a season, which is calculated as the number of temperature degrees accumulated during the vegetation period (from April 1st to September 30th). In the present study, we evaluated how this indicator has changed in Iași in the last 6 decades. The results show a significant increase in the number of temperature degrees which requires an agroclimatological study on future plant varieties that will be grown in the coming years.

16.00-16.10

Pintilie Paula – Lucelia^{1,2}, Tălmăciu Mihai¹, Troțuș Elena², Amarghioale Roxana – Georgiana², Isticioaia Simona – Florina², Buburuz Alexandra-Andreea², Leonte Alexandra², Eșanu Sabina-Andreea² (¹Iași University of Life Sciences, Romania; ²Agricultural Development - Research Station Secuieni – Neamț, Romania)

RESEARCH ON THE ATTACK PRODUCED BY OSTRINIA NUBILALIS HBN. LARVAE AT DIFFERENT GENOTYPES OF MAIZE IN THE CONDITIONS OF CENTRAL MOLDOVA

CERCETĂRI PRIVIND ATACUL PRODUS DE LARVELE SPECIEI OSTRINIA NUBILALIS HBN. LA DIFERITE GENOTIPURI DE PORUMB ÎN CONDIȚIILE DIN CENTRUL MOLDOVEI

During the maize vegetation period, Ostrinia nubilalis larvae causes production losses by producing attack on the stem, cob or inflorescence. To reduce losses, are chosen maize hybrids that are tolerant to larval attack. But the attack depends on the climatic conditions at the time of eggs laying and the appearance of larvae, the phenophase in which the crop is infested and the numerical pressure of the population in that region. This paper presents the results obtained from the observations and determinations made on the attack produced by the larvae of Ostrinia nubilalis Hbn. to several romanian and foreign maize genotypes, in the conditions of Central Moldova. The average frequency of attack produced by the Ostrinia nubilalis Hbn. larvae was 29.76%, the minimum value of the attack being 17.50% and the maximum reached to 47.67%. Among the genotypes studied, Deliciul verii recorded very significant values of all monitoring parameters, the frequency of attack was 47.67%, the most numerous holes (2.63) and galleries (2.14) were identified, and the larvae created galleries with an average length of 22.46 cm. An average, 0.73 holes / plant were register, the larvae created 0.65 galleries / plant with a length of 8.38 cm and were identified 0.38 larvae / plant.

16.10-16.20

Cauș Maria¹, Dascaluic Alexandru¹, Borozan Pantelimon² (¹Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chișinău, Republic of Moldova ; ²Public Institution „Porumbeni” Institute of Phytotechnics, Republic of Moldova)

EARLY GROWTH CONTROL OF HYBRID CORN PLANTS BY SEED TREATMENT WITH NUTRIENTS SOLUTION

CONTROLUL TIMPURIU AL CREȘTERII PLANTELOR HIBRIZILOR DE PORUMB PRIN TRATAREA SEMINTELOR CU SOLUȚIE DE NUTRIENȚI

Experiments were performed under laboratory controlled conditions at 25^oC in the dark, air humidity of 60-70% with four maize (Zea mays L.) hybrids, including Porumbeni 180 (Por. 180), Bemo 203, Porumbeni 374 MRf (Por. 374), Porumbeni 427(Por. 427) to test the influence of seed treatment with water (control) or ½ Hoagland nutrients solution (½NS) on germination parameters. Seeds treated with ½ NS showed the tendency to decrease the final percentage of germination for studied hybrids. At the same time, seed treated with ½NS promoted the growth of 5-day-old seedlings, increasing the height of epicotyls, radicle length, and accumulation of fresh biomass of plantlets.

16.20-16.30

Cauș Maria¹, Dascaluic Alexandru¹, Borozan Pantelimon² (¹ Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chișinău, Republic of Moldova ; ² Public Institution „Porumbeni” Institute of Phytotechnics, Republic of Moldova)

SEED RESERVE MOBILIZATION DURING GERMINATION AND SEEDLING GROWTH OF DIFFERENT MAIZE HYBRIDS UNDER NUTRIENTS APPLICATION

MOBILIZAREA REZERVEI DIN SEMINȚE ÎN TIMPUL GERMINĂRII ȘI CREȘTERII PLANTULELOR DIFERITE HIBRIDI DE PORUMB ÎN DEPENDENȚĂ DE APLICAREA ELEMENTELOR NUTRITIVE

The seeds of four maize hybrids (Zea mays L.), including Porumbeni 180 (Por. 180), Bemo 203, Porumbeni 374 (Por. 374) and Porumbeni 427 (Por. 427) were used to investigate the effect of seed treatment with water (control) or ½ Hoagland nutrients media (½ NM) on the mobilization of seed reserves for germination and early growth of seedlings. Utilization of ½ NM provided an increase in the rate of endosperm mass included in the biomass of seedlings, while that consumed in respiration, on the contrary decreased, in comparison with the control. The seed metabolic efficiency (SME) has been shown to depend on both the type of corn hybrid and the nutrient media used for seed treatment and germination. The SME level of maize hybrids that germinated on ½ NM was significantly higher for Bemo 203 and other hybrids studied, being 2.4 and 2 times higher, respectively, than that of control seeds.

16.30-16.40

Neculai-Văleanu Andra-Sabina^{1,2}, Distele Nadège Simo^{1,2,3}, Ariton Adina-Mirela², Mădescu Bianca-Maria^{2,3}, Pierre Kamtchouing¹, Henri Bayemi⁴ (² Research and Development Station for Cattle Breeding Dancu, Iasi, Romania)

INVESTIGATIONS REGARDING THE ANTIOXIDANT ACTIVITY OF GREEN SYNTHESIZED SILVER NANOPARTICLES USING DIFFERENT ECO-FRIENDLY REDUCING AGENTS

INVESTIGAȚII PRIVIND ACTIVITATEA ANTIOXIDANTĂ A NANOPARTICULELOR DE ARGINT OBTINUTE PRIN SINTEZĂ VERDE FOLOSIND DIFERIȚI AGENȚI DE REDUCERE PRIETENOȘI CU MEDIUL

The aim of this study was to assess the antioxidant properties of green synthesized silver nanoparticles using eco-friendly reducing agents such as Parsley (Petroselinum crispum), Rosmary (Rosmarinus officinalis) and cinnamon (Cinnamomum zeylanicum) extracts. The plant extracts prepared by ultrasound-assisted technique were used as reduction agents for the silver ions. The synthesis of silver nanoparticles was confirmed by spectrophotometric analysis, at a resolution of 1 nm and wavelength range of 300-600 nm. The size AgNPs was calculated using correlation equations, based on the expressed Surface Plasmon Resonance (SPR) peak. The hydrogen peroxide scavenging activity was determined in order to assess the antioxidant activity of the green synthesized nanoparticles. The size of the nanoparticles ranged between 10-46 nm, silver nanoparticles synthesized from cinnamon exhibiting the highest scavenging activity. The result confirmed that environmentally benign reducing agents may be used for the production of AgNPs which can be exploited for their antioxidant activity in different domains.

16.40-16.50

Enache Iuliana-Maria¹, Vizireanu Camelia¹, Patraș Antoanela² (¹ „Dunărea de Jos” University of Galați, Romania; ²Iași University of Life Sciences, Romania)

CORNUS MAS – BOTANICAL, ETYMOLOGICAL AND MORPHOLOGICAL ASPECTS

CORNUS MAS – ASPECTE BOTANICE, ETIMOLOGICE SI MORFOLOGICE

Cornelian cherry fruits (Cornus mas L.) are rich sources of polyphenolic compounds such as: anthocyanins (cyanidin-3-glucoside, cyanidin-3-rutinosid), catechins (catechin, epicatehin), flavonoids (quercetin, kampferol) or phenolic acids and tannins (gallic acid, salicylic acid). Cornus mas has a high content of macroelements and microelements (potassium, calcium, nitrogen, phosphorus, sulfur, magnesium, iron, zinc, copper). These fruits are used in food industry - fresh or processed (marmalade, juice, tea, etc.), but also for treating many disease such as: anemia, cancer, diabetes, cardiovascular, gastrointestinal or kidney diseases, etc.

COFFEE BREAK 16.50-17.00



POSTER SESSION
THURSDAY, OCTOBER 21st, 2021

PhD, Prof. Lucia Carmen **TRINCĂ**
PhD, Assoc. Prof. Antoanela **PATRAȘ**
PhD, Lecturer Ciprian **CHIRUȚĂ**
PhD, Lecturer Alina **TROFIN**

PhD, Lecturer Emilian **BULGARIU**
PhD, Assist. Prof. Paula Andreea **COZMA**

17.00-17.05

Ciurla (Lucescu) Liliana¹, Ghinet Alina², Belei Dalila², Bicu Elena² (¹Iași University of Life Sciences, Romania; ²"Alexandru Ioan Cuza" University Iasi, Romania)

SYNTHESIS AND CHARACTERIZATION OF NEW INDAZOYL-PYRIDINIUM SALTS WITH ANTIFUNGAL POTENTIAL

SINTEZA ȘI CARACTERIZAREA UNOR NOI SARURI DE INDAZOIL-PIRIDINIUM CU POTENȚIAL ANTIFUNGIC

Fungi constitute the largest number of plant pathogens and are responsible for a range of serious plant diseases. Most vegetable diseases are caused by fungi. Fungi that spoil food or infect crops can have major socioeconomic impact, threatening the food security. The strategies needed to manage these fungi are evolving, given the growing incidence of fungicide resistance. In the literature, the pyridinium salts and indazole derivatives are described as possessing antifungal properties. The purpose of our synthesis is to combine the two chemical entities in new chemical structures, in order to create synergies of effects and potentiate the antifungal effect of the resulting compounds.

17.10-17.15

Enache Iuliana-Maria¹, Patraș Antoanela², Vizireanu Camelia¹ (¹„Dunărea de Jos” University of Galați, Romania; ²Iași University of Life Sciences, Romania)

PHYTOCHEMICAL CHARACTERIZATION AND ANTIOXIDANT ACTIVITY OF CORNELIAN CHERRY FRUITS

CARACTERIZAREA FITOCHIMICĂ ȘI ACTIVITATEA ANTIOXIDANTĂ A FRUCTELOR DE CORN

Cornelian cherry are forest fruits, a rich source of biologically active compounds such as polyphenols, (flavonoids and anthocyanins), carotenoids, carbohydrates, vitamins, fatty acids, organic acids. The anthocyanins from cornelian cherry fruits are represented by cyanidin, delphinidin, pelargonidin and peonydin. In order to protect the anthocyanins degradation from the external disturbing factors, it is necessary to protect them by microencapsulation. The bioactive compounds from cornelian cherry fruits were extracted by using hydroalcoholic extract (70% ethanol). In this research were quantified: the polyphenolic content, flavonoid content, anthocyanins content, antioxidant activity and the encapsulation efficiency of the anthocyanins.

17.15-17.20

Roșu Crăița-Maria¹, Ivănescu Bianca², Doroftei Florica³, Stoleru Elena³, Brebu Mihai³ (¹Institute of Biological Research, Iasi – branch of NIRDBS; ²University of Medicine and Pharmacy “Grigore T Popa”, Faculty of Pharmacy, Romania; ³Institute of Macromolecular Chemistry “Petru Poni”Iași, Romania)

CHEMICAL COMPOSITION AND ANTIFUNGAL ACTIVITY OF FIVE ARTEMISIA SPP. ESSENTIAL OILS (EO_s) ON SOME PHYTOPATHOGENIC FUNGI

COMPOZIȚIA CHIMICĂ ȘI ACTIVITATEA ANTIFUNGICĂ A CINCI ULEIURI ESENȚIALE DIN ARTEMISIA SPP. ASUPRA UNOR FUNGI FITOPATOGENI

As the widespread use of chemical pesticides has led to environmental problems and risks to human health, alternative methods are needed to combat plant diseases. In this context, five plant essential oils (EO_s) from aerial parts of different Artemisia taxa (Artemisia argyi, A. lavandulaefolia, A. lancea, A. annua and A. absinthium) were obtained, chemically characterized and quantified by GC-MS (/FID). Their antifungal activity was investigated against six phytopathogenic fungi (Alternaria alternata, Alternaria solani, Fusarium oxysporum f. sp. Lycopersici (FOL), Fusarium oxysporumf.sp. radcis-lycopersici (FORL), Penicillium expansum and Aspergillus niger), in vitro. The essential oils were found to inhibit the mycelia growth of tested fungi depending

on their composition and mode of actions (contact/volatile phase), in a dose dependent manner. Essential oil of *A. argyi* was found to be the most active (100% inhibition of *A. solani* and FORL at 1.0 µl/ml), followed by *A.lavandulaefolia* (100% inhibition of *A. solani*, FORL and *P. expansum* at 2.0 µl/ml), *A.lancea* (100 – 95.71% inhibition of *A. alternata*, *A.solani* and *A. niger* at 2.0 µl/ml) and *A. annua* (100 – 82% inhibition of *P. expansum* and *A. solani* at 2.0 µl/ml) (contact phase effect). The *A. absinthium* essential oil was less effective against all fungal strains. By comparison, in the volatile phase, essential oils were more effective in inhibiting fungal growth at all tested concentrations. Also, scanning electron microscopy (SEM) of essential oil-treated mycelium revealed morphological alterations of fungal cells, mainly as collapsed and shriveled hyphae. This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS/CCCDI – UEFISCDI, project no. PN-III-P2-2.1-PED-2019-0091, within PNCDI III, Contract no. 394/2020.

17.20-17.25

Trofin Alina¹, Ungureanu Elena¹, Trincă Lucia Carmen¹, Eperjessy Diana Beatrice², Sandu Tatiana¹ (¹ Iași University of Life Sciences, Romania; ²“Saint Mary” Children’s Clinical Emergency Hospital Iași, Romania)

ANALYSIS OF METAL IONS AS SOLUBLE SALTS IN DIFFERENT DAIRY PRODUCTS

ANALIZA UNOR IONI METALICI DIN SĂRURI SOLUBILE ÎN DIFERITE PRODUSE LACTATE

Milk and dairy products are unique combinations of micronutrients with multiple recognized health benefits. The trace elements present in dairy products have an important role in living organisms, among the most important being Fe, Mn and Co. Through this work we performed the analysis of the content in soluble salts of some metals in several dairy products on the market regarding the content of nitrites, phosphates, chlorides and ions of iron, manganese and cobalt. Following the analyzes, a higher iron content was observed in the products Lapte de consum Vreau din România with 3,5% fat (18.36 mg/Kg) and Actimel Danone de căpșuni with 1,5% fat (15.44 mg/Kg), higher values for manganese ions in products Danonino brânzică de zmeură with 2,5% fat (84.56 mg/Kg) and Danonino brânzică de banane with 2,5% fat (96.57 mg/Kg) and higher values for the cobalt content of drinking yogurt products (Iaurt de băut Vreau din România with 2% fat - 0.06097 mg/Kg, Iaurt natural de băut Zuzu with 2% fat - 0.0663 mg/Kg, Iaurt de băut Pulos with 2% fat - 0.07697 mg/Kg).

17.25-17.30

Trincă Lucia Carmen¹, Cozma Paula Andreea¹, Scutărășu Cristina¹, Ariton Mirela², Ungureanu Elena¹, Trofin Alina¹ (¹Iași University of Life Sciences, Romania; ²Research and Development Center for Cattle Breeding Dancu, Iași, Romania)

STUDY OF SENSORY AND PHYSICO-CHEMICAL PARAMETERS OF DRIED PLUMS

STUDIUL PARAMETRIILOR SENZORIALI ȘI FIZICO-CHIMICI AI SCRIFELELOR DIN PRUNE

Drying is a traditional method of preserving plums. This method is based on reducing the water content and implicitly on modulating the activity of water so that the osmotic pressure becomes high enough to cause the plasmolysis of microbial cells, which will inhibit the growth of microorganisms. The results of the sensory analyzes showed that by dehydration the plums significantly changed their texture, color, taste, smell, shape, volume while by applying glycerinization treatments the commercial aspect was improved, at the level of sensory properties, acquiring a sweeter taste and a glossy texture. The results of the physico - chemical analyzes revealed normal values of the physico - chemical parameters according to the regulated standard norms.

17.30-17.35

Ungureanu Elena¹, Jităreanu Carmenica Doina¹, Trofin Alina¹, Ungureanu O.C.², Ariton Adina-Mirela³, Trincă Lucia Carmen¹, Popa V.I.⁴ (¹ Iași University of Life Sciences, Romania; ²“V. Goldiș” West University of Arad, Romania; ³Research and Development Center for Cattle Breeding Dancu, Iasi, Romania; ⁴“Gh. Asachi” Technical University of Iași, Romania)

ASPECTS CONCERNING THE INFLUENCE OF SOME POLYMERIC COMPOSITE STRUCTURES SUSCEPTIBLE AT BIODEGRADATION ON THE PROCESS OF PLANT DEVELOPMENT

*This paper presents some results referring to the influence of some composite structures based on lignin (L), wood powder (PL), and low density polyethylene (LDPE) (Arpechim Pitesti), incorporated into the soil, on the process of growth and development plant. The experiment took place in laboratory conditions at 23-25°C. As biological material one used tomato seeds (*Lycopersium esculentum*, variety San Marzano) offered by USV Iasi. The evolution of plants was monitored for 35 day and during this period one realized some analyses as: the capacity of germination, the quantity of green and dry biomass, which offer indices upon the possible stimulative effect of the products used. For biodegraded composite materials, the surface aspects were analyzed visually and with the help of SEM microscopy. According to this research one has established that composite products used are susceptible to biodegradation and positively influence the growth and development of plants, except for polyethylene, so they can contribute to soil bioremediation.*

17.35-17.40

Conțescu Elena-Laura¹, Ciucă Matilda¹, Turcu Alina-Gabriela¹, Cristina Daniel¹ (¹ National Agricultural Research-Development Institute, Fundulea, Romania)

GENETIC ANALYSIS OF SOME TOMATO (*SOLANUM LYCOPERSICUM L*) GENOTYPES BY TBP AND SCOT MARKER SYSTEMS

ANALIZA GENETICĂ A UNOR GENOTIPURI DE TOMATE (*SOLANUM LYCOPERSICUM L*) UTILIZÂND SISTEMELE DE MARKERI TBP ȘI SCOT

The cultivated tomato, Solanum lycopersicum L., is one of the most economically important vegetables grown and consumed for its fruit all over the world. Most of the commercial cultivars of tomato have been developed through phenotypic selection and can be easily confused because have similar morphological traits. Therefore, it is necessary to create fast, sensitive, and reliable methods for the tomato commercial cultivars authentication. Intended for that, in this study, were evaluated nine tomato cultivars (Kristinica, Florina, Andrada, Buzău-1600, Buzău-47, Argeș-11, Argeș-20, Ștefănești-24 and Ștefănești-22) at molecular level with two markers systems: TBP (tubulin-based polymorphism) that relies on the presence of intron-specific DNA polymorphisms of the plant β -tubulin gene family and six start codon-targeted (SCoT) markers. TBP analyzes, for beta tubulin gene, was performed for the both introns. The results showed identical electrophoretic profiles, consequently, no polymorphism was observed at the genotypes analyzed. Molecular assay with SCoT markers (SCoT2, SCoT13, SCoT16, SCoT20, SCoT24 and SCoT28) revealed a low level of polymorphism, although, SCoT markers generated between 7 bands (SCoT28) and 12 bands (SCoT24), polymorphic bands were obtained only with SCoT13 and SCoT28. A distinct PCR product of 600 bp was identified at cultivar Ștefănești -24 with SCoT 13 and with the marker -SCoT28 a distinct product of 1100 bp was observed at the genotypes: Andrada, Buzău- 1600 and Buzău- 47. These results open perspectives for tomato commercial cultivars authentication.

17.40-17.45

Ene Mihaela¹, Alexandru Mioara¹, Zorila Florina Lucica¹ (¹IFIN-HH, Magurele, Romania)

OPTIMIZATION OF CULTURE MEDIUM COMPOSITION FOR MYCELIAL BIOMASS OF *TRICHODERMA ATROVIRIDE* BISETT IN SHACKED CULTURES

As a prerequisite for developing an affordable, solid-state fermentation process to produce a Trichoderma-based, soil bioinoculant, a rich inoculum was aimed to be obtained through submerged fermentation of vegetative mycelium. For that, an optimized composition was searched for the culture broth of Trichoderma atroviride Bisett, using Design Expert, a dedicated software that relies on statistical models. After a pre-screening step, where we selected starch and peptone and as the main carbon and nitrogen sources, respectively, we ran a Placket-Burman design matrix, followed by a validation experiment of its results prediction. The optimized medium had the following composition: K₂HPO₄ - 2g/L, CaCl₂ - 0,2 g/L, MgCl₂ - 0,5 g/L, NaHPO₄ - 3 g/L, CuSO₄~5H₂O - 0,0064 g/L, FeCl₃ - 0,003 g/L, ZnSO₄~7H₂O - 0,0015 g/L, soluble starch - 10 g/L, peptone from casein (Tryptone) - 15 g/L. All ingredients were added to a basal medium made of supernatant broth of oat bran (40 g) boiled in 1 liter of water. The result obtained after 7 days of shacked culture in optimized medium (3.36 g / L – dry mycelium biomass) was lower than the one predicted by the statistical model (4.57 g / L) and also was lower than the highest result in the screening experiment (4.11 g / L - run 11). Still, the optimized composition yielded a higher mycelial biomass than the standard PDB medium (2.183 g /L).

17.45-17.50

Neculai-Văleanu Andra-Sabina¹, Ariton Adina-Mirela¹, Ungureanu Elena², Trincă Lucia Carmen² (¹Research and Development Station for Cattle Breeding Dancu, Iasi, Romania; ² Iași University of Life Sciences, Romania)

EFFECT OF DIFFERENT EXTRACTION TECHNIQUES ON THE SIZE OF SILVER NANOPARTICLES SYNTHESIZED USING *MENTHA PIPERITA* EXTRACTS

EFECTUL DIFERITELOR TEHNICI DE EXTRAȚIE ASUPRA DIMENSIUNII NANOPARTICULELOR DE ARGINT SINTETIZATE FOLOSIND EXTRACT DE *MENTHA PIPERITA*

Mentha species, including Mentha piperita are of considerable economic importance, and are commonly used in the medicinal, cosmetics and agri-food sectors due to their bioactive compounds such as phenolic acids and flavonoids. Since the extraction technique may greatly influence the quality of the extracted oils and compounds, new, non-invasive extraction methods of plant metabolites, such as Ultrasonic Assisted Extraction (UAE), have been rapidly popularized as a sustainable alternative for improving the yield of derived compounds and shortening the extraction time. In this study we tested the effect of two types of extraction techniques: hot extraction and ultrasound assisted extraction and their effect on the size of silver nanoparticles synthesized using Mentha piperita plant extract. An UV – Visible spectrophotometer was

used to carry out the analysis at a resolution of 1 nm by scanning the absorbance spectra at a absorption range of 300-600 nm. The size AgNPs was estimated based only on the Surface Plasmon Resonance (SPR) peak, using correlation equations. The first visible signs indicating the formation of Ag-NPs was the change in color of extract from light brown to dark brown. Based on the SPR wavelength, we established that the majority of the green synthesized nanoparticles were in ~ 37–60 nm of the size range, the ultrasound assisted (UAE) extract rendering silver nanoparticles with small size and a higher surface area to volume ratio.

17.50-17.55

Pintilie Paula – Lucelia^{1,2}, Tălmăciu Mihai¹, Trotaș Elena², Amarghioalei Roxana – Georgiana², Isticioaia Simona – Florina², Popa Lorena – Diana², Pintilie Andreea² (¹ Iași University of Life Sciences, Romania; ² Agricultural Research and Development Station Secuieni – Neamț, Romania)

RESEARCH ON THE ATTACK PRODUCED BY *OSTRINIA NUBILALIS* HBN (EUROPEAN CORN BORER) LARVAE TO SOME AGRICULTURAL CROPS IN THE CONDITIONS OF CENTRAL MOLDOVA
CERCETARI PRIVIND ATACUL PRODUS DE LARVELE SPECIEI *OSTRINIA NUBILALIS* HBN. (SFREDELITORUL PORUMBULUI) LA UNELE CULTURI AGRICOLE ÎN CONDIȚIILE DIN CENTRUL MOLDOVEI

Ostrinia nubilalis Hbn. larvae it attacks many species of plants belonging to very different families. Maize is recognized as the preferred host, but the larvae attack hemp, sorghum, millet, hops, peppers or weeds (*Echinochloa crus galli*, *Artemisia vulgaris*). In maize crops the larvae are identified on different parts of the plant (stem, cobs, inflorescence) where it favors the installation of pathogens, weaken the resistance of the plant being prone to break or depreciate the grains. At hemp, the larvae feed on the stem tissues, including the support system and the conducting vessels. The effect of the attack produced by larvae is materialized by young plants stagnation in vegetation and the decrease of production capacity in more mature plants. Sorghum shows tolerance to larval attack especially in the booting phenophase, tolerance decreasing to flowering, which is higher than that found in maize. This paper presents the results obtained on the attack of *Ostrinia nubilalis* Hbn produced at maize, hemp and sorghum in the period 2019-2021. At the analyzed crops, the larvae produced attacks between 3.65% (sorghum) and 32.63% (maize). The maize crops were the most affected by the larval attack, registering on average an attack of 32.63%. In hemp, the larval attack was on average between 2% and 21%. At sorghum crops it was found that the larval attack was reduced to sporadic, between 2% and 9%.

17.55-18.00

Rotaru V.

Institute of Genetics, Plant Physiology and Protection of Academy of Sciences, Chișinău, Republic of Moldova

INFLUENCE OF RHIZOBACTERIA INOCULATION AND EXOGENOUSLY APPLIED SALICYLIC ACID ON THE CONTENTS OF HYDROGEN PEROXIDE AND WATER IN SOYBEAN (*GLYCINE MAX* L.) UNDER DROUGHT CONDITION
INFLUENȚA INOCULĂRII CU RIZOBACTERII ȘI APLICĂRII ACIDULUI SALICILIC ASUPRA CONȚINUTULUI DE PEROXID DE HIDROGEN ȘI APA LA SOIA (*GLYCINE MAX* L.) ÎN CONDIȚII DE SECETA

Rhizobacteria and salicylic acid (SA) have an important role in the promotion plant growth and enhancement of crops resilience to abiotic stresses. The aim of the study was to evaluate the effect of rhizobacteria (*Bradyrhizobium japonicum*) inoculation alone and in combination with salicylic acid on soybean (*Glycine max* L.) plants under moderate drought stress condition. Therefore, a pot culture experiment was conducted to test whether SA application at concentration of 0,5 mM through foliar spray could protect the soybean cultivar *Horboveanca* to short drought stress based on growth and alterations in hydrogen peroxide and relative water contents (RWC). The control treatment received 70% water holding capacity (WHC) of soil, whereas moderate drought stress corresponded to 35% WHC. Results showed that water deficit decreased RWC and increased hydrogen peroxide contents in leaves. The efficiency of *Bradyrhizobium japonicum* in the presence of salicylic acid was higher compare to plants treated with rhizobacteria alone. Thus, experimental findings demonstrated that integrated use of rhizobacteria and SA alleviates the adverse effects of water deficit on growth and contributed to drought tolerance of soybean through increased relative water contents and decreasing accumulation of reactive oxygen species in plant tissues.

18.00-18.05

Poroşnicu Ioana^{1,2}, Ariton Adina-Mirela², Borş Silviu-Ionuţ², Bădilaş Nicolae-Iulian³, Coman Ioan¹ (¹The "Stefan S. Nicolau" Institute of Virology, Romanian Academy, Bucharest, Romania; ²Research and Development Station for Cattle Breeding Dancu, Iasi, Romania; ³Iasi University of Life Sciences, Romania)

MYCOLOGICAL INVESTIGATIONS REGARDING THE DOMINANT FLORA FROM THE VEGETAL SUBSTRATES HARVESTED FROM N-E ROMANIA
INVESTIGAȚII MICOLOGICE PRIVIND FLORA DOMINANTĂ DIN SUBSTRATURILE VEGETALE RECOLTATE DIN N-E ROMÂNIEI

*The research aimed to evaluate the fungal potential of plant substrates that frequently enter the food of animals and humans through a mycological screening of collected samples that characterize N-E Romania. Samples such as alfalfa semi-hay, corn silo, mixed feed ration, concentrates, corn grains were randomly collected from agricultural or zootechnical farms and a series of 30 determinations/sample were performed, in order to establish the fungal load during the experimental period. The double agar serial dilution technique and bacterial inhibitors were used to establish the number of colony-forming units, with an emphasis on the isolation, identification and characterization of micromycete species, in view of their taxonomic classification. Following the study, it was shown that the dominant fungal flora that characterizes the plant substrates in N-E Romania belongs to the genera *Penicillium* (99.9%), *Fusarium* (89.6%) and *Aspergillus* (73%), the most contaminated samples being represented by the corn silo and the corn grains. The climatic conditions in this geographical area are favorable for these species of micromycetes, they develop a vigorous vegetative apparatus with a phenotypic expression difficult to confuse and easy to frame taxonomically.*

2nd SECTION

HORTICULTURE TEHNOLOGIES

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

On-line, via ZOOM

Chairpersons:

PhD, Prof. Liviu Mihai **IRIMIA**
PhD, Prof. Valeriu V. **COTEA**
PhD, Prof. Neculai **MUNTEANU**
PhD, Assoc. Prof. Teodor **STAN**

Secretariat:

PhD, Lecturer Maria **APOSTOL**
PhD, Lecturer Cintia Lucia **COLIBABA**

Timp de prezentare: 5-7 minute



PLENARY SESSION
THURSDAY, OCTOBER 21st, 2021

14.30-14.40

Zăgrean A.V.¹, Șovărel Gabriela¹, Nicolcioiu M.B.¹, Rusu I.C.¹(¹ Research-Development Institute for Vegetable and Flower Growing - Vidra, Romania)

IN VITRO EVALUATION OF THE QUALITY INDICATORS FOR THE MYCELIA OF SOME *PLEUROTUS* *OSTREATUS* AND *PLEUROTUS* *CITRINOPILEATUS* STRAINS
EVALUAREA *IN VITRO* A INDICILOR DE CALITATE PENTRU MICELIILE UNOR TULPINI DE *PLEUROTUS* *OSTREATUS* ȘI *PLEUROTUS* *CITRINOPILEATUS*

Our research aimed at inventorying and evaluating the main morphophysiological and cultural characteristics of the mycelia of Pleurotus ostreatus (2 strains) and P. citrinopileatus (1 strain) grown in vitro. The characterization of the specific quality indicators of the mycelium was made for each technological category separately: mother culture on agarized media; intermediate mycelium - liquid inoculum; spawn on granulated support distributed in polypropylene bags with microfilter. The most accurate assessment of the growth rate on different nutrient media is an important indicator for the quality of the mycelium. The fastest growing strain was P.ostreatus PoM-77, showing at 7 days of incubation the highest values on both MEA (38.35 mm) and PDA (36.88 mm) media. The lowest growth values were recorded at the P.ostreatus PoM-73/357 strain on both culture media: 28.27 mm (MEA) and 27.23 mm (PDA), respectively. The quantities of dry biomass resulting from submerged cultivation (liquid inoculum) were higher in both strains of P.ostreatus PoM-77 (5.33 g/L) and PoM-73/357 (3.66 g/L) compared to P.citrinopileatus PcM-95 (3.33 g/L). The data obtained resulted in the elaboration of a working protocol / experimental design for the production and verification of the quality of spawn in these two species of cultivated mushrooms.

14.40-14.50

Chiriță Raluca¹, Teliban Gabriel – Ciprian¹, Mihalache Gabriela², Rosca Mihaela², Munteanu Neculai¹, Stoleru Vasile¹ (¹ Iași University of Life Sciences, Romania)

CULTIVATION PERSPECTIVE AND IMPORTANCE OF *CHENOPODIUM* *QUINOA*, WILLD., AS A LEAFY VEGETABLES, IN ROMANIA
PERSPECTIVE DE CULTIVARE ȘI IMPORTANȚA SPECIEI *CHENOPODIUM* *QUINOA*, WILLD., CA LEGUMĂ PENTRU FRUNZE, ÎN ROMÂNIA

In recent decades, climate change is rapidly deteriorating crop production conditions. The phenomena of salinization and drought are constantly increasing in all areas of the world, as well as in Romania. On the other hand, there is a constant population growth worldwide, which means that new species and genotypes tolerant to these factors can be identified and used for modern-future agriculture. The species

*tolerant to stress and salinity exist, they have an ecological plasticity and a very high value of biodiversity, due to the different climatic conditions in their area of origin, but at the moment they are unused and neglected. One such species is quinoa, *Chenopodium quinoa*, Willd., which we have focused on in this paper, in particular emphasis is placed on the ecological plasticity of the plant, respectively resistance to drought and salinity.*

14.50-15.00

Ciubotărita Anamaria¹, Horaicu Alexandru¹, Teliban Gabriel-Ciprian¹, Cojocaru Alexandru¹, Stoleru Vasile¹ (¹ Iași University of Life Sciences, Romania)

THE EFFECT OF FERTILIZATION TYPE ON EGGPLANT CROPS UNDER TUNNELS

EFACTUL FERTILIZĂRII DIFERENȚIATE LA O CULTURĂ DE PĂTLĂGELE VINETE ÎN SPAȚII PROTEJATE

*Eggplants (*Solanum melongena* L.) have become in the last years one of the most appreciated vegetables world wide due to their high nutritional value. Eggplant fruit contain significant amounts of carbohydrates, mineral salts, vitamins and polyphenols. In Romania, eggplant crops can be planted both in protected area and field conditions, economic efficiency being ensured by appropriate environmental and technological conditions. In order to increase productive potential of eggplant, it is necessary to ensure the optimal level for all the environmental factors as well as the specific technological ones. Soil is the main source of mineral nutrients and water for plants, its ability to provide the needed nutrients varies depending on its level of fertility. Eggplant fruit quality is determined by nutrients quantity and quality. In addition, at the University of Life Sciences from Iasi, an experiment was carried out during 2020-2021 growth season with the purpose to investigate the effect of three different fertilization regimes on the fruit quality and fruit yield and its component of eggplant cultivar Mirval F1 and Bleach Pearl F1 under tunnels. The research, indicated significant values in terms of quality and quantity for the microbiologically fertilized Mirval hybrid.*

15.00-15.10

Cărbune Răzvan-Vasile¹, Mihalache Gabriela¹, Stoleru Carmen-Maria², Teliban Gabriel-Ciprian¹, Stoleru Vasile¹ (¹ Iași University of Life Sciences, Romania; ² "Virgil Madgearu" Technologic and Economic High-School, Iasi, Romania)

ASSESSMENT OF GERMINATION CAPACITY OF PEASEEDS UNDER THE INFLUENCE OF STORAGE CONDITIONS

EVALUAREA CAPACITĂȚII DE GERMINARE A SEMINTELOR DE MAZĂRE SUB INFLUENȚA DURATEI DE PĂSTRARE

The present paper highlights a study on the influence of storage time on the germination capacity of peaseeds. The determination of the germination capacity of the pea seeds was carried out in accordance with SR 1634/1999, during two years, during 2017-2018. The number of normally developed germs decreased constantly from 2014 to 2018, in all cultivars, but the largest decrease was registered in Skinado cultivars (11.80%) and Television (12.32%). The final value of the total germination in the case of the Television cultivar was 76.5%, being below the acceptable limit for germination, respectively 80%.

15.10-15.20

Precupeanu Cristina¹, Rădeanu Georgiana¹, Munteanu Neculai¹, Teliban Gabriel Ciprian¹, Stoleru Vasile¹ (¹ Iași University of Life Sciences, Romania)

EVALUATION OF SOME QUANTITATIVE CHARACTERS ON THE COMMON BEAN CULTIVAR OF THE 'VIOLETĂ DE IAȘI', IN THE FIELD OF CHOICE

EVALUAREA UNOR CARACTERE CANTITATIVE LA CULTIVARUL DE FASOLE DE GRĂDINĂ 'VIOLETĂ DE IAȘI', ÎN CÂMPUL DE ALEGERE

Due to the fact that lately the population aspires to a balanced and healthy diet, garden beans have become a popular vegetable due to their high content of protein (important for vegetarians) and minerals. The research aimed to evaluate the quantitative variability of the cultivar 'Violetă de Iași', a cultivar approved by U.L.S. "Ion Ionescu de la Brad", in 1997. In order to conduct the study, a field of choice was established, using seed with high biological value. The experiment was established on plan land within the V. Adamachi farm, in 2020. During the vegetation period, the care works indicated in the literature were applied, including biological purification. After the individual harvest of the elite plants, the characters were followed: "number of pods per plant" (NPP), "number of seeds per plant" (NSP), "average mass of seeds per plant" (MSP), "average length of pods on the plant" (LPP). The data obtained were analyzed with specific statistical methods, using histograms of variations for each character. Following the analysis of the mentioned characters, it is concluded that the cultivar 'Violetă de Iași' suffered a process of genetical

degeneration, due to the high variability, resulting in the appearance of two subpopulations for the characters the number of pods per plant and the average length of the pods.

15.20-15.30

Rădeanu Georgiana, Precupeanu Cristina¹, Munteanu Neculai¹, Teliban Gabriel – Ciprian¹, Stoleru Vasile¹ (¹ Iași University of Life Sciences, Romania)

STUDY OF SOME QUANTITATIVE CHARACTERISTICS ON A POPULATION OF RUNNER BEANS (*PHASEOLUS COCCINEUS* L.)

STUDIUL UNOR CARACTERE CANTITATIVE LA O POPULAȚIE DE FASOLE MARE (*PHASEOLUS COCCINEUS* L.)

Phaseolus coccineus L. is the third most cultivated species of bean, for consumption of grains and immature pods. Despite its agronomic potential, high nutritional value and special economic importance, it is cultivated on a small scale and less studied to. Because the planet's population is constantly growing, researchers trying to capitalize on the highest possible levels of alternative crops. In this context, the purpose of this paper is to assess the variability of quantitative characters (number of pods per plant, number of beans per plant, mass of beans per plant, number of beans in pods) in a local runner bean population, collected from village Cozia, Iași county, due to some special biological characters, in order to substantiate the selection works for the *Phaseolus coccineus* L. The experiment was carried out in the experimental vegetable field of Didactic Station of USV Iași. Following the analysis of the results for the four characters, it was observed that it does not fully meet the criteria of distinctiveness, homogeneity and genetic stability, so it is not sufficiently balanced reason why it is necessary to continue the selection work. as it has the high potential.

15.30-15.40

Balan V.¹, Sarban V.¹ (¹ State Agrarian University of Moldova, Chișinău, Republic of Moldova)

THE IMPACT OF THE TIME OF PRUNING OF SKEENA VARIETY CHERRY TREES (*PRUNUS AVIUM* L.) ON THE FRUIT QUALITY AND YIELD

EFACTUL PERIOADEI DE TĂIERE A POMILOR DE CIREȘ (*PRUNUS AVIUM* L.) DIN CV „SKEENA” ASUPRA PRODUCȚIEI ȘI CALITĂȚII FRUCTELOR

The study was carried out between 2018 and 2020, in the central area of the Republic of Moldova. The purpose of the research was to assess the effect of the pruning of Skeena variety cherry trees (*Prunus avium* L.), grafted on the Maxima 14 rootstocks, during the rest and vegetative phase. The pruning was done as follows: during the rest period (control group), during the flowering period; after the harvesting (in July) and in early autumn (the first decade of September). The quantity of fruit 24 mm and downwards in diameter was small in all variant. The pruning performed in early autumn reduced the amount of small fruit and increased the number of the fruit the diameter of which was 28 mm and upwards. At the same time, the expansion of the fruit size led to a slight increase in the fruit yield. The content of the soluble dry matter and titratable acidity in the fruit was almost not affected. It is necessary to conduct researches into the pruning during the vegetative phase for the purpose of the improvement of the fruit quality and the distribution of the fruit by commercial sizes, without affecting the crop yield. A long-term study, on the other hand, would be needed to assess the impact of the pruning time on harvests and, especially, on the commercial type of fruit.

15.40-15.50

Peșteanu Ananie¹, Negru Ion¹ (¹ State Agrarian University of Moldova, Chișinău, Republic of Moldova)

BIOLOGICAL PARTICULARITIES OF SOME NEW APRICOT VARIETIES CULTIVATED IN THE NORTHERN AREA OF THE COUNTRY

PARTICULARITĂȚILE BIOLOGICE ALE UNOR SOIURI NOI DE CAIS CULTIVATE ÎN ZONA DE NORD A ȚĂRII

The research was carried out in the orchard of the company "Vilora" LLC, in 2020. The object of the research was the trees of apricot varieties Spring Blush, Pinkcot, Kyoto and Faralia grafted on the rootstock Mirobalan 29C. The planting distance was 4.0x2.2 m. Apricot trees were planted in the spring of 2018. The trees were driven according to the Trident system. The Kyoto variety had a higher resistance to the late return temperatures, which in the conditions of the northern area registered productions of 17.03 t/ha in the third year after planting.

15.50-16.00

Zlati Cristina¹, Istrate Mihai¹, Dascălu Marius¹, Pașcu Roxana¹ (¹ Iași University of Life Sciences, Romania)
IMPACT OF CLIMATE CHANGE ON APPLE PRODUCTION, IN IASI REGION
IMPACTUL SCHIMBARILOR CLIMATICE ASUPRA PRODUCTIEI DE MERE, IN ZONA IASI

Horticulture is strongly dependent on climate and in the context of climate change is being affected by climate change in terms of quantitative and qualitative yield reduction. In Europe, Mediterranean region and Middle Eastern Europe are the most affected by global climate change in the recent years. High temperatures in the orchard during summer and autumn can affect fruit quality. Lately, more symptoms occur, as sunburn damage, poor blush development, water core, rapid fruit ripening and reduced fruit growth. Some studies were carried out on apple under Iasi-Copou ecological conditions to see the effects of high temperatures and how these high temperatures could affect apple quality. All these changes will determine us to adapt orchard practices to manage the impacts that an increased frequency of heat events will have on fruit quality.

15.60-16.10

Bosoi Ionica¹, Rotaru Liliana¹, Colibaba Cintia¹ (¹ Iași University of Life Sciences, Romania)
RESEARCH OF AGROBIOLOGICAL VALUE ON SOME GRAPE VARIETIES FOR WHITE WINE
CREATED AT S.C.D.V.V. ODOBEȘTI
CERCETĂRI PRIVIND VALOAREA AGROBIOLOGICĂ LA UNELE SOIURI PENTRU VINURI ALBE
CREATE LA S.C.D.V.V. ODOBEȘTI

Vine varieties react differently to the influence of environmental factors by reducing or intensifying the vigor of shoot growth, a biological reaction that also affects the elements of fertility and productivity. This paper presents data on some agrobiological properties of white wine varieties created at S.C.D.V.V. Odobești, in the climatic conditions of 2020 and 2021. In the Odobești vineyard, the year 2020 was much warmer than normal, characterized by a severely deficient rainfall regime, while 2021 is considered to be a normal year in terms of climatic view. The growth vigor of the shoots was lower in 2020 compared to 2021. Fertility was below the potential of the varieties in 2020, being between 60.7% (Șarba) and 83.8% (Vrancea). The absolute fertility coefficient (Cfa) had superunitary values for all varieties and the relative fertility coefficient (Cfr) was subunitary except for the Vrancea variety (1.32). Productivity indices were between 226 and 307 (lpa), respectively 182 and 199 (lpr).

16.10-16.20

Macoviciuc Sorin¹, Niculaua M.², Nechita C. B.², Cioroiu I. B.², Cotea V.V.^{1,2} (¹ Iași University of Life Sciences, Romania; ² Research Center for Oenology of Romanian Academy - Iasi Banch, Romania)
AMINOACIDS PROFILES IN WINES WITH LOW CONTENT OF SULPHUR DIOXIDE FROM PANCIU
WINE REGION
DISTRIBUȚIA UNOR AMINOACIZI IN VINURILE CU UN CONȚINUT SCĂZUT DE DIOXID DE SULF DIN
PODGORIA PANCIU

In wine industry, amino-acids play an important role in one of the most important elements of wine-making as fermentation and, as a result, are involved in specificity of wine variety. In the present study, specific wine varieties from Panciu wine region were included, namely: Feteascăregală, Feteascăregală Frizzante, Cabernet Sauvignon and Cabernet Sauvignon rose. Every type of wines was processed by classic wine making methodologies but also with a different a modified scheme in order to compensate the role of low sulphur dioxide wine variants. Levels of amino-acids were determined by GC-MS, using a specific derivatisation method and ratio of intensities of peaks, permitted the quantification of 16 principal aminoacids. Some of aminoacids as alanine, glycine, valine, leucine, threonine, lysine and serine were highly affected in terms of decrease of concentration for low sulfur dioxide wines. Proline which was resulted from the fermentation process had values higher than the average content of other aminoacids, from 1515.93 mg/L to 157 mg/L. Comparing the varieties with low and standard value of sulphur-dioxide, the levels of amino acids were differently affected. As a conclusion, the analysis of samples showed that the levels of amino-acids did not affect the overall quality of some the wines, the decreased levels can be associated with the transformation on other metabolites as biogenic amines.

16.20-16.30

Grosaru Dragoș Florin¹, Luchian Camelia Elena¹, Popîrdă Andreea¹, Colibaba Lucia Cintia¹, Zamfir Cătălin Ioan², Cotea V. Valeriu¹ (¹ Iași University of Life Sciences, Romania; ²Research Center for Oenology of Romanian Academy - Iasi branch, Romania)

STUDY OF WHITE WINES OBTAINED BY *BLANCS DE NOIR* METHOD FROM THE ROMANIAN GRAPE VARIETIES FETEASCĂ NEAGRĂ AND BUSUIOACĂ DE BOHOTIN
STUDIUL UNOR VINURI ALBE OBȚINUTE PRIN METODA *BLANCS DE NOIR* DIN SOIURILE ROMÂNEȘTI FETEASCĂ NEAGRĂ ȘI BUSUIOACĂ DE BOHOTIN

With the development of the wine sector in Romania, the interest of consumers for the most innovative wines has increased. Today, the vinification technique created by Dom Perignon ("blancs de noir") with applicability to sparkling wines, is increasingly used to obtain still wines. The research aimed to obtain four white wines using the Romanian varieties Fetească neagră and Busuioacă de Bohotin and then analyse them from a physico-chemical, chromatic and sensory point of view in order to identify the most suitable technology among the proposed experimental ones. The results of the study highlighted physically and chemically balanced wines and color indices specific to white wines. The sample obtained from Busuioacă de Bohotin variety, that was not treated with activated carbon, recorded the highest concentrations of flavor compounds, being also the most balanced from a sensory point of view.

16.30-16.40

Toader Ana Maria¹, Popîrdă Andreea¹, Luchian Camelia Elena¹, Colibaba Lucia Cintia¹, Tarcan (Focea) Elena Cornelia¹, Cotea V. Valeriu¹, Tudose-Sandu-Ville Ștefan¹ (¹ Iași University of Life Sciences, Romania)

STUDY OF THE SENSORY PROFILE OF BIO WHITE WINES OBTAINED IN DOBROGEA, ROMANIA, IN 2020
STUDIUL PROFILULUI SENZORIAL AL VINURILOR ALBE BIOLOGICE OBȚINUTE ÎN DOBROGEA, ROMÂNIA, ÎN ANUL 2020

In the last two decades, the responsibility towards the environment has developed, reason why several producer organizations have been formed with the aim of promoting ecologic agriculture. In this context, ecologic viticulture has developed as a component part of ecologic agriculture. At present, we cannot talk about the biodynamic wines without talking about the ecologic wines. This study aimed to analyse some ecologic wines obtained in Dobrogea region (Romania) from: Rhein Riesling, Italian Riesling, Chardonnay and Muscat ottonel. The results showed that for the wines obtained from Rhein Riesling and Italian Riesling varieties, the predominant notes were the green apple ones, while for the Muscat ottonel wine were the mango notes. Also, the wines were distinguished by velvety texture and medium body, characteristics directly correlated with the high glycerol content acquired by the wines during the alcoholic fermentation process.

16.40-16.50

Ștefan Ion Alfred¹, Tălmăciu Mihai¹, Tălmăciu Nela¹, Herea Monica¹ (¹ Iași University of Life Sciences, Romania)

FLIGHT DYNAMICS OF HARMFUL LEPIDOPTERS TO VINEYARDS USING THE *TERAYA FLY* SYSTEM
DINAMICA ZBORULUI UNOR LEPIDOPTERE DĂUNĂTOARE PLANTATIILOR DE VITA DE VIE CU AJUTORUL SISTEMULUI *TERASEYA FLY*

Among the practical applications of synthetic sex pheromones, the most important it is about constant supervision of insect populations for the purpose of fore casting and warning treatments or for their suitability. At present, in our country synthetic pheromones are produced for 33 species of insects of agricultural, horticultural and forestry importance. From their many, the Atrabot-type pheromone specific to the pest Lobesia botrana has been selected, which causes considerable damage to vineyards throughout the growing season. The present paper presents the results on flight dynamics and abundance of Lobesia botrana, a species harmful to red vineyards by means of the intelligent trap type Teraseya Fly.

16.50-17.00

Turcu Cristina Ionela¹, Tălmăciu Mihai¹, Tălmăciu Nela¹, Herea Monica¹, Chelaru Simona-Mihaela^{1,2}, Perju Ionel² (¹ Iași University of Life Sciences, Romania; ² Research Station for Fruit Growing Iași, România)

OBSERVATIONS REGARDING THE PESTS REPORTED IN THE APPLE PLANTATIONS UNDER THE RSFG IASI AND THEIR PHYTOSANITARY PROTECTION

OBSERVAȚII PRIVIND DĂUNĂTORII SEMNALAȚI ÎN PLANTAȚIILE DE MĂR DIN CADRUL SCDP IASI ȘI PROTECȚIA FITOSANITARĂ A ACESTORA

*The observations took place in 2021 in the apple plantations of Research Station for Fruit Growing Iași, (northeast of Romania), where a complex program of phytosanitary treatments was applied, taking into account the biology and ecology of the pests found in the apple plantations. Varieties on which observations have been made regarding the application and effectiveness of phytosanitary treatments were Idared and Yonagold varieties grafted on rootstock MM106. The climatic conditions of 2021 favored the development of pathogens and pests. Under the conditions of withdrawal of a large number of active substances, the pest control is becoming increasingly difficult, so that in 2021 a number of 11 phytosanitary treatments were applied, the degree of attack of the pest *Cydia Pomonella* L. being between 2% for the treated variant and 45% for the untreated variant.*

COFFEE BREAK 17.00-17.15



POSTER SESSION
THURSDAY, OCTOBER 21st, 2021

Chairpersons:

PhD, Prof. Liviu Mihai **IRIMIA**
PhD, Prof. Valeriu V. **COTEA**
PhD, Prof. Neculai **MUNTEANU**
PhD, Assoc. Prof. Teodor **STAN**

Secretariat:

PhD, Lecturer Maria **APOSTOL**
PhD, Lecturer Cintia Lucia **COLIBABA**

17.15-17.20

Calara Mariana¹, Munteanu N.², Brezeanu C.¹, Brezeanu P. M.¹, Avasiloaiei D. I.¹, Ambaruș S.¹, Cristea T. O.¹, Benchea C. M.¹, Iosob G. A.¹, Bouruc D.¹, Bute A.¹, Tremurici Antal A.¹, Muscalu S. P.¹
(¹Vegetable Research and Development Station Bacau, Romania; ²Iași University of Life Sciences, Romania)

PRELIMINARY STUDIES REGARDING SOME ALLELOPATHIC INTERACTIONS IN VEGETABLES
INTERCROPPING SYSTEMS

STUDII PRELIMINARE PRIVIND UNELE INTERACȚIUNI ALELOPATICE LA SISTEMELE DE
INTERCROPPING CU PLANTE LEGUMICOLE

The paper presents a summary of the scientific and technical achievements regarding the allelopathic phenomenon and its application in the weed management of different culture systems. The paper is particularly referring to the definition and content of the allelopathy phenomenon as well as on how it operates on different agricultural crops. Particular emphasis is on the use of allelopathy in ecological vegetable crops. Research has highlighted the main species with allelopathic reaction that are used in different vegetable crops. Thorough researches has taken into account the biochemical and physiological mechanisms by which the allelopathic phenomenon is manifested at the level of culture plants. The optimization of some practices for efficient use of solutions in weed management is of great importance.

17.20-17.25

Horaicu Alexandru¹, Teliban Gabriel-Ciprian¹, Ciubotăriță Anamaria¹, Munteanu Neculai¹ (¹Iași University of Life Sciences, Romania)

PRELIMINARY STUDIES OF THE PERSPECTIVE OF GARDEN BROAD BEAN CULTIVATION IN
ROMANIA

STUDII PRELIMINARE PRIVIND PERSPECTIVA CULTIVĂRII BOBULUI DE GRĂDINĂ ÎN ROMÂNIA

Broad bean crop presents great nutritional, agrotechnical, economical and social value worldwide along with other legume crops such as soybean, bean and pea. In Romania, the interest for this crop is very low, although there are favorable conditions to acquire successful cultures, in the last 30-50 there was a well known crop. The study presents the most important achievements regarding the cultivation technology, with special emphasis on the assortment, crop density and fertilization regime, as important factors for the promotion of this culture in our country. The scientific paper is elaborated on the bases of the scientific literature regarding the most important cultivation factors and the correlation between them to meet the ecological needs of the plant.

17.25-17.30

Zăgrean A.V.¹, Neagu D.², Șovărel Gabriela¹, Nicolcioiu M.B.¹, Rusu I.C.¹ (¹Research-Development Institute for Vegetable and Flower Growing - Vidra, Romania; ²National Institute for Physics and Nuclear Engineering "Horia Hulubei" - Măgurele, Romania)

YIELDING CAPACITY OF SOME GAMMA-IRRADIATED MYCELIA OF *PLEUROTUS ERYNGII*

CAPACITATEA DE PRODUCȚIE A UNOR MICELII GAMMA-IRADIATE DE *PLEUROTUS ERYNGII*

Mycelia belonging to the strains PeM-39, PeM-41, PeM-45 of Pleurotus eryngii (RIVFG Vidra collection) grown on agar media were irradiated with doses of 100 Gy, 200 Gy, 300 Gy to be subsequently checked, compared to the unirradiated ones, for the fructification capacity. After irradiation, the mycelia were transferred to fresh media plates, incubated and then propagated on granulated support in order to obtain the spawn. The culture substrate was prepared from a mixture of wheat straw and corn cobs supplemented with wheat bran, corn and sunflower middlings and distributed, 1.5 kg each, in

polypropylene bags. PeM-39 and PeM-41 strains produced, in irradiated and unirradiated variants, higher yields than the control PeM-45. The best result was obtained by PeM-39 with an average (irradiated and unirradiated mycelia) of 360.7 g mushrooms/bag (24.04% f.s.) and with a very significant crop increase of 91.6 g compared to the control. The strain PeM-41 behaved similarly, which averaged 329,7 g of mushrooms/bag (21,98% f.s.), exceeding the control also with a very significant difference in crop, i.e. by 60,6 g/bag. Irradiation of the mycelia of the three strains induced a very significant drop in the harvested production in the first wave on all irradiated variants compared to nonirradiated ones. On average, yields decreased accordingly with increasing the dose from 100 Gy to 200 Gy. At 300 Gy, the average of the yields was higher than those obtained at 100 Gy and 200 Gy, which is a fact that retains the attention and can be explained either by the increased stimulation, at this dose, of the post-irradiation reparative activity at the cellular level, or as a manifestation of a mutagenic effect.

17.30-17.35

Cărbune Răzvan-Vasile¹, Munteanu Neculai¹, Stan Teodor¹, Stoleru Carmen-Maria², Cojocaru Alexandru¹, Stoleru Vasile¹ (¹ Iași University of Life Sciences, Romania; ²“Virgil Madgearu” Technologic and Economic High-School, Iași, Romania)

DETERMINATION OF THE CONTENT OF PRIMARY METABOLISM COMPOUNDS FROM LEGUMES DURING STORAGE
DETERMINAREA CONȚINUTULUI DE COMPUȘI PRIMARI DE METABOLISM LA LEGUMINOASE PE DURATA PĂSTRĂRII

Legumes are the main source of vegetable protein with high digestive and energy value for human food. Lately, a special emphasis is placed these crops, as there has been a very high protein deficit in human nutrition. The culture of these species is also determined by the increased intake of nutrients and a high energy and digestive value. Globally, the area has exceeded 200 million ha, which makes these crops the second largest in the world after cereals. During two years of storage, the protein content increased in seeds by almost 15%. The grain has the highest content of total fiber, respectively 24 g / 100 d.w. of which dietary fiber 8.27 g / 100 g d.w., (34%). The energy value of the analyzed legumes varies between 523 kcal / 100 g for peas and 577 for beans, Violetă de Iași cultivar.

17.35-17.40

Frangulea Mihai¹, Jerca Ionuț Ovidiu², Ivan Elena Ștefania², Bădulescu Liliana² (¹ University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania; ² The Research Center for Studies of Food and Agricultural Products Quality, Romania)

ANALYSIS OF ENVIRONMENTAL CONDITIONS ON TOMATO PRODUCTION IN A RESEARCH GREENHOUSE
ANALIZA CONDIȚIILOR DE MEDIU ÎNTR-O SERĂ BLOC DE CERCETARE AUTOMATIZATĂ ÎN CULTURA DE TOMATE

Tomato production is directly influenced by the environmental conditions. To optimize the production, these factors should be monitored and controlled. The current paper follows a case study of the environmental conditions in a automated research greenhouse located in the USAMV campus in Bucharest, Romania. Three factors were analyzed – inside temperature, relative humidity and CO₂ concentration. A comparison between the optimal conditions and those recorded in the greenhouse was done. The results indicated differences between the optimal factors and the greenhouse values. As such, the highest recorded inside temperature was significantly higher than the optimal one. Significant differences were also found for the relative humidity and CO₂ concentration. Ultimately, these translate into a reduced tomato production. Due to the regional climatic conditions, reducing the inside temperature is only achievable through the upgrade of greenhouse equipment. For the USAMV greenhouse, future research should cover the benefits of a heat pump system over the current fossil fuel technology. Recent studies illustrated an increase in crop productivity and energy efficiency in heat pump based greenhouses compared to the traditional heating and cooling options.

17.40-17.45

Corneanu Margareta¹, Mineață Iulia¹, Golache Iuliana Elena¹, Sîrbu Sorina¹, Iurea Elena¹, Ungureanu Ionuț Vasile¹ (¹ Research and Development Station for Fruit Tree Growing, Iași, Romania)

POLLEN VIABILITY AND GERMINATION CAPACITY OF SWEET CHERRY CULTIVARS IN THE CLIMATE CONDITIONS OF ROMANIAN NORTHEASTERN AREA
VIABILITATEA POLENULUI ȘI CAPACITATEA DE GERMINARE A SOIURILOR DE CIREȘ ÎN CONDIȚIILE CLIMATICE DIN NORD-ESTUL ROMÂNIEI

This study presents the germination capacity and the pollen viability of ten sweet cherry cultivars ('Regina', 'Kordia', 'Bucium', 'Cătălina', 'Cetățuia', 'George', 'Golia', 'Maria', 'Marina' and 'New Star') registered on climatic conditions and phenological evolution of 2021. The phenological stages followed from bud burst to the end of flowering, were between April 5th ('Regina') and May 4th ('New Star'), with an average value of 21.3 days. Determination of pollen viability recorded average percentage values of 64.3% and a germination capacity of 74.5% with a medium coefficient of variation (11.29%–respectively 15.86%). The significant differences among pollen viability and germination ability were recorded for all cultivars. The results showed that the sum of the degrees of active temperature during the flowering have important influence to obtain high percentage values of pollen viability and germination capacity.

17.45-17.50

lordăchescu Mihaela¹, Bădulescu Liliana² (¹University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB), Research Center for Studies of Food Quality and Agricultural Products, Romania; ²University of Agronomic Sciences and Veterinary Medicine of Bucharest, Faculty of Horticulture, Department of Horticultural Systems Bioengineering, Romania)

USE OF SSR MOLECULAR MARKERS FOR SWEET CHERRY (*PRUNUS AVIUM* L.) SPECIES
FOLOSIREA MARKERILOR MOLECULARI TIP SSR LA CIREȘ (*Prunus avium* L.)

*Sweet cherry (*Prunus avium* L.), belonging to Rosaceae family, is a very popular fruit tree species, and it is cultivated worldwide. Recent advances in molecular biology research have brought to light new data, including the identification of molecular markers related to traits of interest. Microsatellite (simple sequence repeats or SSR) markers have been used extensively for a variety of purposes, such as the study of genetic variability, DNA fingerprinting, molecular identification, etc. The present review proposes to bring together data referring to the use of SSRs for the sweet cherry species.*

17.50-17.55

Bosoi Ionica¹, Pușcalău Marioara², Rotaru Liliana¹ (¹Iași University of Life Sciences, Romania; ²Research and Development Station for Viticulture and Oenology Odobesti, Romania)

THE PHENOLOGICAL SPECTRUM OF SOME VINE VARIETIES CULTIVATED IN ODOBEȘTI VINEYARD IN THE CONTEXT OF CLIMATE CHANGE
SPECTRUL FENOLOGIC A UNOR SOIURI DE VIȚĂ-DE-VIE CULTIVATE ÎN PODGORIA ODOBEȘTI ÎN CONTEXTUL SCHIMBĂRILOR CLIMATICE

In the last 20 years there has been a tendency to change in evolution climatic factors, which makes it increasingly difficult to accurately predict the timing of vegetation phenophases in vines. Their dynamic analysis, in close correlation with the evolution of climatic factors specific to Odobesti vineyard, from 2000 to 2019, highlighted the fact that they were conditioned both by the level and action of climatic factors and by the hereditary specifics of cultivated varieties. The increase of temperature values (average annual temperature, average temperature in the first and second decades of June, average temperature in July, etc.), determined the advance of the onset of phenophases and shortened their duration, especially in dry years.

17.55-18.00

Pușcalău Marioara¹, Bosoi Ionica², Dîrloman Camelia Alina¹ (¹Research and Development Station for Viticulture and Oenology Odobesti, Romania; ²Iași University of Life Sciences, Romania)

PRELIMINARY RESULTS REGARDING THE EVALUATION OF THE AGROBIOLOGICAL AND TECHNOLOGICAL POTENTIAL OF SOME HYBRID ELITE WITH BIOLOGICAL RESISTANCE OBTAINED AT S.C.D.V.V. ODOBEȘTI
REZULTATE PRELIMINARE PRIVIND EVALUAREA POTENȚIALULUI AGROBIOLOGIC ȘI TEHNOLOGIC AL UNOR ELITE HIBRIDE CU REZISTENȚĂ BIOLOGICĂ OBTINUTE LA S.C.D.V.V. ODOBEȘTI

In the context of practicing a sustainable viticulture, with the reduction of the pesticides applied by phytosanitary treatments, it is necessary to obtain and promote vine varieties with complex biological resistance, with high potential for adaptation to the ecopedoclimatic conditions of each viticultural area, and valuable technological characteristics. Responding to this desideratum at S.C.D.V.V. Odobesti were studied in order to evaluate the agrobiological and technological potential of two hybrid elites with biological resistance: the hybrid elite 2-5 and the hybrid elite 10-18. This paper presents preliminary data on the agrobiological and technological potential of the elites studied in the climatic conditions of the wine year 2019-2020.

18.00-18.05

Filimon Roxana¹, Damian Doina¹, Nechita Ancuța¹, Filimon Vasile Răzvan¹ (¹ Research-Development Station for Viticulture and Winemaking Iași, Romania)

BEHAVIOR OF NEW TABLE GRAPE HYBRID ELITE IN THE CLIMATE CONDITIONS OF THE COPOU-
IASI WINE CENTER

COMPORTAREA UNOR NOI ELITE HIBRIDE PENTRU STRUGURI DE MASĂ ÎN CONDIȚIILE
CLIMATICE ALE CENTRULUI VITICOL COPOU - IASI

Improving the table grape assortment is a permanent concern of horticultural researchers. Through advanced breeding programs are favored the obtaining, introduction and promotion into the vineyards of new genotypes with superior yield and quality and increased biological resistance. The purpose of these approaches is to satisfy current consumer requirements and the growing demand for table grapes on the market. The current study aims to evaluate two valuable hybrid elite for table grapes obtained at Research and Development Station for Viticulture and Oenology Iasi (Copou-Iasi wine center). Adaptation to environmental conditions and grape quality were analyzed based on agrobiological and technological observations. The two hybrid elite showed high productions (up to 20 t/ha), with a marketed production of over 90%. Both genotypes showed significant accumulations of sugars in grapes (196-200 g/L) and high resistance to cryptogamic diseases, indicating a good adaptation to the environmental factors in the growing area.

18.05-18.10

Nechita Ancuța¹, Zaldea Gabi¹, Damian Doina¹, Filimon Vasile Răzvan¹, Filimon Roxana¹, Ghiur Andreea Denisa¹ (¹ Research-Development Station for Viticulture and Winemaking Iași, Romania)

RESEARCH REGARDING THE PRETABILITY OF GOLIA VINE VARIETY FOR ECOLOGICAL
CULTIVATION

STUDII PRIVIND PRETABILITATEA SOIULUI DE VIȚĂ-DE-VIE GOLIA LA CULTIVAREA ÎN SISTEM
ECOLOGIC

In the North-eastern part of the country, the cultivation of vines in ecological system is a real challenge due to specific climatic conditions from the last years with an unfavorable impact on vineyards. In ecological viticulture the identification and cultivation of vine varieties with increased productivity and genetic resistance present a particular importance. In this regards, studies have been carried out on the behavior of Golia variety, a variety for white wines, in terms of agrobiological and technological value, under the condition of applying phytosanitary treatments with products based on copper and sulfur. The results obtained regarding the response to the attack of the main pathogens, as well as the productivity and quality characteristics, has been showed the possibility of gradual adoption and implementation of the ecological cultivation system of Golia variety, in the condition of the Copou-Iași viticultural ecosystem.

18.10-18.15

Ghiur Andreea Denisa¹, Zaldea Gabi¹, Nechita Ancuța¹, Alexandru Lulu Cătălin¹, Damian Doina¹ (¹Research-Development Station for Viticulture and Winemaking Iași, Romania)

MONITORING THE EVOLUTION OF THE PATHOGENIC AGENTS IN VARIETIES GROWN IN THE
COPOU WINE CENTER, IN THE CONTEXT OF CLIMATE CHANGE

MONITORIZAREA EVOLUȚIEI AGENȚILOR PATOGENI LA SOIURILE CULTIVATE ÎN CENTRUL
VITICOL COPOU, ÎN CONTEXTUL SCHIMBĂRILOR CLIMATICE

In the present, the vine culture is dependent on phytosanitary treatment applied against the pathogenic agents whose evolution can cause significant crop damage. Performing rational treatments in closely linked with the wine growth phenophases and climatic conditions influences the development and degree of attack of pathogens. The present paper aims to present the results of monitoring the evolution of pathogens in 10 genotypes grown in the Copou wine center during two different years in terms of climate, 2020 and 2021, under the influence of the application of treatment schemes meant to maintain a low level of intensity, frequency and degree of attack of each pathogen. The studied genotypes have been assessed with the OIV scores of resistance level between 7-9 for the downy mildew, powdery mildew and gray mold attack.

18.15-18.20

Scutărășu Elena Cristina¹, Trincă Lucia Carmen¹, Cotea V. Valeriu¹, Luchian Camelia-Elena¹, Cozma Andreea Paula¹, Călin Ioana¹ (¹ Iași University of Life Sciences, Romania)

INFLUENCE OF ENZYMES ON THE PHENOLIC COMPOUNDS CONTENT FROM SAUVIGNON BLANC WINES

INFLUENȚA ENZIMELOR ASUPRA CONȚINUTULUI DE COMPUȘI FENOLICI AL VINURILOR SAUVIGNON BLANC

Wine's general quality and chemical composition are strongly connected to the raw material state, alcoholic fermentation and applied treatments. Understanding the important role of enzymes in winemaking contributes to the development of strategies to optimize the production process to improve the chemical composition and structure of the resulted wine and its organoleptic properties. Thus, this paper aimed to evaluate the effect of different five commercial enzymes (pectinases and β -glycosides) on the main phenolic compounds content of Sauvignon blanc wines. The administration of enzymatic treatments determined significant differences between the concentrations of the main identified phenolic compounds. Experimental samples were characterized by a high content of protocatechuic acid, caftaric acid, trans- and cis-resveratrol. The highest content of the majority of identified phenolic compounds was generated by pectinases, while the control sample showed the smallest values.

18.20-18.25

Popîrdă Andreea¹, Luchian Camelia Elena¹, Tudose-Sandu-Ville Ștefan¹, Colibaba Lucia Cintia¹, Cotea V. Valeriu¹, Bora Florin Dumitru², Filimon Vasile Răzvan³ (¹ Iași University of Life Sciences, Romania; ² Research-Development Station for Viticulture and Winemaking Bujoru, Romania; ³ Research-Development Station for Viticulture and Winemaking Iași, Romania)

PHYSICO-CHEMICAL AND SENSORY ANALYSIS OF LOW-ALCOHOL BEVERAGES, OBTAINED BY FERMENTATION OF MUSTS OF THE MUSCAT OTTONEL VARIETY AFTER THE APPLICATION OF THE REVERSE OSMOSIS PROCESS

ANALIZA FIZICO-CHIMICĂ ȘI SENZORIALĂ A UNOR BĂUTURI SLAB ALCOOLICE, OBȚINUTE PRIN FERMENTAREA MUSTURILOR DIN SOIUL MUSCAT OTTONEL DUPĂ APLICAREA PROCESULUI DE OSMOZĂ INVERSĂ

Global warming is probably one of the main reasons why, in the last two decades, the level of ethyl alcohol has increased considerably in the wines obtained in most wine regions of the world. This study aims to analyse 6 low-alcohol drinks and 2 wines obtained in two vineyards in Moldova region: Iasi-Copou and Dealu Bujorului. "Wines" with low alcohol concentrations were obtained by applying the technological process of reverse osmosis which involved the separate collection of retentate and permeate and their blending in the proportions necessary to obtain beverages with the following alcohol concentrations: 3,5, 5,5 and 8.5% vol. alc. Following the sensory analysis, it was found that the profiles of the analyzed drinks were greatly influenced by the area but also that the control wines were more balanced in terms of taste and with more obvious olfactory notes specific to the variety.

18.25-18.30

Cerbu Maria Iulia¹, Cotea V.V.¹, Colibaba Lucia Cintia¹, Călin Ioana¹, Niță R.G.¹, Sandu-Ville Tudose Ș.¹, Zamfir C.I.², Niculaua M.² (¹ Iași University of Life Sciences, Romania; ² Research Center for Oenology of Romanian Academy - Iasi Branch, Romania)

INFLUENCE OF MATURATION PRODUCTS ON CHROMATIC AND PHYSICAL-CHEMICAL PARAMETERS OF SAUVIGNON BLANC AND BUSUIOACĂ DE BOHOTIN WINES

INFLUENȚA PRODUSELOR DE MATURARE ASUPRA PARAMETRILOR CROMATICI ȘI FIZICO-CHIMICI A VINURILOR SAUVIGNON BLANC ȘI BUSUIOACĂ DE BOHOTIN

Ageing of wines on lees involves keeping wines in contact with dying yeast cells for several months/years. Over recent years, ageing of wines on lees acquired a great distinction in winemaking process as an interesting technique for improving wine quality. Ageing on lees is a winemaking technique consisting on maintaining the wine after fermentation in contact with the yeast lees to favour the compounds transfer between dead cells and wine during yeast autolysis. Wine ageing on fine lees (essentially dead yeast cells) allows the release from the cell wall of different compounds into wines during yeast autolysis, such as polysaccharides, amino acids, fatty acids and mannoproteins, compounds that interact with the wine and give it texture and complexity. The effect of ageing on lees was studied using 12 commercial maturation products in white and rosé wines obtained in Iasi vineyard, vintage 2020. The study analyzes the influence of a short aging on lees on the physico-chemical and colour parameters of young white and rosé wines. The results show that this technique offers great prospects for improving the quality of wines. The

first impression that the consumer receives from wine is colour and it influences the taste. Regarding chromatic parameters, an increase in colour intensity was evident for all samples after the ageing period on lees. The oenological products used for ageing on lees showed light influence on the physical-chemical characteristics: a slow decrease in total acidity for Sauvignon blanc (for example, samples V8SB, V1SB), a slight increase in total dry extract for the wines obtained from Busuioacade Bohotin grapes (for example, samples V12BB, V2BB, V10BB and V4BB), which reveals that fuller-bodied wines were obtained after ageing on lees. The aim of this experiment was to follow the evolution of physical-chemical and chromatic parameters of wines, depending on commercial maturation product used after alcoholic fermentation.

18.30-18.35

Călin (Buțerchi) Ioana¹, Cotea V. Valeriu¹, Colibaba Lucia Cintia¹, Luchian Camelia Elena¹, Cerbu Iulia Maria¹, Zamfir Cătălin-Ioan², Nechita Bogdan Constantin² (¹ Iași University of Life Sciences, Romania; ² Research Center for Oenology of Romanian Academy - Iasi Banch, Romania)

THE DYNAMIC OF METHANOL AND ACETALDEHYDE IN WHITE WINES TREATED WITH SULPHUR DIOXIDE AND DIMETHYL DICARBONATE
DINAMICA METANOLULUI ȘI A ACETALDEHIDEI ÎN VINURILE ALBE TRATATE CU DIOXID DE SULF ȘI DIMETIL DICARBONAT

Wine structure is very complex, consequently, the latest researches has been focused on the detailed analysis of this beverage. One of the most important compounds that can be found in wines is methanol. The toxicology of methanol and the admissible limits established by OIV, especially the effect on consumer's health, have to be considered. In this sense, the maximum permissible quantity of methanol and changes in its composition in wines must always be discussed. For this study, forty-five samples were obtained from a blend of Feteascăregala and Muscat Ottonel grape varieties at the experimental wine cellar of the Oenology Laboratory of the Faculty of Horticulture from Iasi. All variants were treated with 6 % SO₂ solution (40, 80, 160 mg/L) and dimethyl dicarbonate liquid solution, in various ratios (0, 100, 200). Also, in this experiment, yeasts such as *Schizosaccharomyces* spp. and *Brettanomyces* spp. were inoculated separately (*S-Schizosaccharomyces pombe*, *B-Brettanomyces bruxellensis*) and the evolution of methanol content and acetaldehyde in wines was recorded following the administration of treatments with dimethyl dicarbonate and sulphur dioxide. The main purpose of this research is to evaluate the methanol content in wine samples using a gas chromatography method and the possible transformation in wine composition (methanol concentrations) produced by DMDC. Moreover, an important compound that can be formed in wines due to SO₂ presence is acetaldehyde, so, the quantity and the effect on wine composition were discussed. The results show different amounts of methanol and acetaldehyde due to the reactions of the used treatments with specific compounds of wine. The concentration of methanol and acetaldehyde in the studied wine samples are within permitted limit for white wines, 250 mg/L methanol, respectively 125 mg/L for acetaldehyde.

18.35-18.40

Șovărel Gabriela¹, Hogeș Simona-Ștefania¹ (¹Research Development Institute for Vegetable and Flower Growing Vidra, Romania)

BIOLOGICAL CONTROL OF SOME PESTS ON MELON CROPS IN GREENHOUSES
COMBATAREA BIOLOGICA A UNOR AGENTĚIDE DĂUNARE LA CULTURA DE PEPENI GALBENIDIN SPAȚII PROTEJATE

The cultivation of melons occupies an important area worldwide, the main cultivating countries being China, Turkey, Iran, India and Egypt. In Europe, Romania ranks 4th in terms of area after Spain, Italy and France. Foliar diseases of melons have a negative impact on fruit production and quality. This experiment aimed to study the efficacy of biological some plant protection products for the control of mites (*Tetranychus urticae*) and powdery mildew (*Sphaerotheca fuliginea*) on melons crops in greenhouse. The bifactorial experiment includes 7 variants, 3 biological products used to control mites: Flipper (potassium salts of C7-C20 fatty acids) 16 l / ha, Requiem prime (mixture of terpenoids QRD 460) 10 l / ha and Canelys (cinnamon extract) 0.3% and 2 biological fungicides for powdery mildew: Taegro (*Bacillus amyloliquefaciens* strain FZB24) 0.37 kg / ha, Sonata (*Bacillus pumilus* strain QST 2808) 10 l / ha, 6 foliar applications. The Flipper product 16 l / ha had a very high efficacy of over 90% in the control of the mite *Tetranychus urticae*, in all 3 stages: eggs, nymphs and adults. The products Taegro 0.37kg / ha and Sonata 10 l / ha had an efficacy between 73.6 and 99.9% in powdery mildew (*Sphaerotheca fuliginea*) control. It is recommended to use the biological products Flipper 16 l / ha, Requiem prime 10 l / ha in the control of the mite (*Tetranychus urticae*) and Taegro 0.37kg / ha and Sonata 10 l / ha for powdery mildew (*Sphaerotheca fuliginea*).

3rd SECTION

LANDSCAPE ARCHITECTURE

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

On-line, via ZOOM

Chairpersons:

PhD, Prof. Doina Mira **DASCĂLU**
PhD, Assoc. Prof. Elena Liliana **CHELARIU**
PhD, Prof. Lucia **DRAGHIA**

Secretariat:

PhD, Lecturer Mirela **COJOCARIU**

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



PLENARY SESSION
THURSDAY, OCTOBER 21st, 2021

14.30-14.40

Greco Condrina¹, Mogîldea Teodora¹ (¹ Iași University of Life Sciences, Romania)

THE USE OF GLASS IN LANDSCAPING ELENA DOAMNA SQUARE FROM IAȘY
UTILIZAREA STICLEI ÎN AMENAJAREA PEISAGERĂ A SCUARULUI ELENA DOAMNA DIN IAȘI

This paper presents a brief review of the ways of using glass, some case studies, but also the solution of redevelopment of a real site in Iasi, all the se arrangement shaving glass as a building material used as a generator of the design concept of entire square. After an analysis of the existing situation of the site proposed for development, the zoning of the site and the images of the proposed solutions for each of the areas are presented, all constituting points of interest of the square connected to each other by a network of alleys connected to the thre emain access points area. The described solution can be a model of landscaping of a degraded green space, in a central urban area of a university city.

14.40-14.50

Prună Liviu¹, Slonovschi Andrei¹ ("Gh. Asachi" Technical University of Iași, Romania)

THE BUILDING PROCESS' AUTOMATIZATION OF THE FURNITURE FOR REST FROM A GARDEN
AUTORMATIZAREA PROCESULUI DE CONSTRUIRE A MOBILIRULIU DESTINAT REPAOSULUI
DINTR-O GRĂDINĂ

Benches are furniture elements from a garden that permit relaxation and resting. They can have various shapes and may be built from different materials. In this paper, the authors present a study referring to the possibility of design automatization of these furniture' elements using the interface named iLogic that is a programming interface included in the Inventor software. In the end, the authors present the conclusions they reached and some recommendations regarding the use of the iLogic interface for benches design.

14.50-15.00

Prună Liviu¹, Slonovschi Andrei¹ ("Gh. Asachi" Technical University of Iași, Romania)

COMMON MISTAKE IN THE REPRESENTATION IN TRIPLE ORTHOGONAL PROJECTION OF
CYLINDRICAL-CONICAL AND METHODS FOR THEIR ELIMINATION
GREȘELI FRECVENTE LA REPREZENTAREA ÎN TRIPLĂ PROIECȚIE ORTOGONALĂ A CILINDRO-
CONICELOR ȘI METODEDE PENTRU ELIMINAREA ACESTORA

In many elements of street furniture (pergolas, terraces, benches, etc.) the straight cylinder (elliptical or circular) is found as a constructive element. In the execution drawings (plans, main or side views) of these elements, the correct representations in triple orthogonal projection in the clearance of the bodies are necessary. The paper shows the frequent mistakes of the representation in triple orthogonal projection in the shape of the straight cylinder (cylindrical or elliptical that has the base located in various planes (general position, vertical, parallel, or intersecting the OX axis) and propose a solution for avoiding misrepresentations.

15.00-15.10

Filipov Feodor¹, Chelariu Elena Liliana¹, Chiorescu Esmeralda¹ (¹ Iași University of Life Sciences, Romania)

CONSIDERATIONS ON THE VEGETATION DEVELOPED ON EKCRANIC TECHNOSOLS
CONSIDERATII ASUPRA VEGETATIEI DEZVOLTATE PE TEHNOSOLURI EKCRANICE

Technosols is defined as soils which contain more than 20% artefacts in the upper 100 cm from the soil surface (i) or technic hard material (ii) or a cemented (iii) or indurated layer (iv), or slowly permeable to impermeable constructed geomembrane (v) of any thickness starting ≤ 100 cm from the soil surface. Ekcranic (ek)Tecnosols having technic hard material starting ≤ 5 cm from the soil surface. The presence of technogenic material in the first 5 cm from the soil surface severely restricts plant growth. Studies conducted by us in the North East region of Romania have shown that on some screen technosols such as asphalt-covered soils can grow some perennials that cross the asphalt. Some screen technosols such as those covered with concrete only allow the development of the roots of plants that grow along the alleys. On technosols covered with pavers, annual plants are predominantly installed.

15.10-15.20

Hangan Ana-Maria-Roxana¹, Cojocar Alexandru¹, Teliban Gabriel-Ciprian¹, Stoleru Vasile¹ (¹ Iași University of Life Sciences, Romania)

CLASSIFICATION OF FAMILY VEGETABLE GARDENS
CLASIFICAREA GRĂDINILOR DE LEGUME FAMILIALE

Urban expansion has led the population to create small green spaces around their homes, and the desire to consume fruits and/or vegetables grown according to their own principles, convinced them that a vegetable garden is beneficial, in terms of both food and aesthetics. The data gathered from the specialized scientific literature allowed making a classification of the family vegetable gardens, taking into account the following: the purpose, the style of the design, the functionality and the way of construction. Depending on the purpose, there are vegetable gardens for utilitarian purposes, vegetable gardens for therapeutic purposes and vegetable gardens for culinary purposes. Depending on the style, there are vegetable gardens designed in a geometric style, vegetable gardens arranged in a free style and those arranged in a mixed style. Taking into account the functionality are the ecological, educational, cultural, aesthetic-recreational and sanitary vegetable gardens. In addition, depending on the construction method are the vegetable gardens at ground level, on raised beds, the vegetable gardens in pots and containers and the vegetable gardens on wicker beds. This classification helps to achieve the concept of designing the vegetable garden for decorative purposes and, in this way, can be integrated into the overall design of the property.

15.20-15.30

Dodu Diana¹, Chelariu Elena Liliana¹, Apostol Maria¹, Dascălu Doina Mira¹, Draghia Lucia¹ (¹ Iași University of Life Sciences, Romania)

STUDIES REGARDING THE EFFECT OF THE COMPOSITION OF THE SUBSTRATE ON THE MORPHOLOGICAL AND ORNAMENTAL CHARACTERISTICS OF SOME SPECIES OF PLANTS CULTIVATED IN CONTAINERS
STUDII PRIVIND EFECTUL COMPOZIȚIEI SUBSTRATULUI ASUPRA CARACTERELOR MORFOLOGICE SI ORNAMENTALE ALE UNOR SPECII DE PLANTE CULTIVATE LA CONTAINERE

*In this paper are presented the observations on the adaptation and behavior in some flower species, respectively *Rosmarinus officinalis* L., *Satureja montana* L., *Thymus serpyllum* auct. non. L. and *Sedum caucicola* 'Lidakense' (Praegar) H. Ohba in pot cultivation conditions. The researches were carried out within the Floriculture discipline from University of Life Sciences in Iași. The experiments were organized in seven variants, the experimental factor being the type of soil substrate: V₁ – zeolite; V₂ – peat; V₃ – garden soil; V₄ – zeolite + peat; V₅ – zeolite + garden soil; V₆ – peat + garden soil; V₇ – peat + garden soil + zeolite. During the research, it was observed and measured the influence of the soil substrate type on plants' growing rate and development, evaluating their decorative aspect.*

The best results in terms of branching, height growth and ornamental value of the plants were obtained in the variants V₂, V₄, V₆ and V₇.

15.30-15.40

Pașcu Roxana¹, Zlati Cristina¹, Bernardis Roberto¹ (¹ Iași University of Life Sciences, Romania)

THE USE OF PLANT COMPOSITIONS FOR AREAS WITH A SHORT PERIOD OF INSOLATION
FOLOSIREA COMPOZIȚIILOR VEGETALE PENTRU ZONELE CU PERIOADĂ SCURTĂ DE INSOLAȚIE

Recent studies in the field of sustainable urban planning focus on the plant component, favoring the implementation and conservation of plant material at the highest possible level of quality and performance. In order to better understand the ideology of using dendrological and flowering plants in areas with low insolation, we resorted to their use in a proposal to arrange a private garden. The paper aims to present the methods of arranging private or public gardens taking into account, at the time of design, the needs and requirements of the beneficiary and also the elaboration of a proposal in case the space that is going to be arranged has atypical characters. Here reference is made to the way of designing spaces in which the degree of sunlight is reduced and involves treating them as spaces with semi-shade or shade. In the foreground of this work is the way we use shade and semi-shade plants and how the spaces that benefit from a low degree of insolation are capitalized and integrated.

15.40-15.50

Pașcu Roxana¹, Zlati Cristina¹, Cojocaru Mirela¹ (¹ Iași University of Life Sciences, Romania)

WAYS TO REHABILITATE FAÇADES BY USING PLANTERS
MODALITĂȚI DE REABILITARE A FAȚADELOR PRIN FOLOSIREA JARDINIERELOR

In the context of urbanization accentuated in recent decades, there has been an orientation towards paradigms, which will shape human settlements in a sustainable way able to meet the needs of adaptability to climate change, ensuring primarily environmental quality and conservation of species and habitats. In cities, paved or concrete constructions and surfaces create a specific urban climate, with higher temperatures and a restriction of air circulation, which leads to the production of the so-called "heat island" effect. In contrast, vegetation, through the effect of shade and increasing air humidity contributes to creating a more comfortable environment. Hence the use of the phrase "park - cool island". Lately, a compositional concept of capitalization of vegetation is making its presence felt more and more, emphasizing both the aesthetic role and the role of purification and regeneration of the polluted environment. The solution approached by this work are the arrangements on the vertical given the fact that in the urban environment the vegetation has a role not only aesthetic but also sanogenic.

15.50-16.00

Cojocariu Mirela¹, Chelariu Elena Liliana¹, Chiruță Ciprian¹, Amișculesei Petronica¹, Sonea Andromeda Cristina¹ (¹ Iași University of Life Sciences, Romania)

THE BEHAVIOR OF THE SPECIES *ANTIRRHINUM MAJUS* IN VERTICAL SYSTEMS FOR GREEN FAÇADES, IN THE CLIMATIC CONDITIONS IN THE N-E AREA OF ROMANIA
MODUL DE COMPORTAREA SPECIEI *Antirrhinum majus* ÎN SISTEME VERTICALE PENTRU FAȚADE VERZI, ÎN CONDIȚIILE CLIMATICE DIN ZONA DE N-E A ROMÂNIEI

Annual flowering species, *Antirrhinum majus*, stands out for its compact appearance, longflowering and dense and healthy foliage. This paper aims to study the behavioural pattern of the *Antirrhinum majus* in vertical systems for green façades, in the climatic conditions of the N-E of Romania. The experiment was carried out on height levels, applied to façades oriented towards the four cardinal points with the purpose to conduct a comparative analysis of behaviour, depending on the amount of natural light received specific to each orientation. The study found that *Antirrhinum majus* grown in vertical systems behaves very well regardless of the cardinal orientation of the façade. It is noted, however, that better results were achieved on the west-facing façade in terms of survival rate and coverage.

16.00-16.10

Amișculesei Petronica¹, Apostol Maria¹, Chelariu Elena Liliana¹, Draghia Lucia¹ (¹ Iași University of Life Sciences, Romania)

ASPECTS REGARDING PRESERVATION AND USE OF *CROCOSMIA* CUT FLOWERS
ASPECTE PRIVIND PĂSTRAREA ȘI VALORIFICAREA FLORILOR TĂIATE DE *CROCOSMIA*

Lately, *crocosmia* is gaining more and more interest on the cut flowers market in Romania. The ornamental value of the cut flowers is given by their longevity and the number of flowers on the stem, as well as by the general appearance throughout the storage in pots or arrangements. In this research, determinations were made on the influence of storage solutions on the longevity of *Crocosmia* cut flowers, using six experimental variants: V₁ - distilled water (control); V₂ - commercial preservative / Vital Flower (5g/L); V₃ - gibberellic acid (150 mg /L); V₄ - boric acid (150 mg /L); V₅ - silver nitrate (1000 ppm); V₆ - potassium

benzoate (0.03%). Observations and determinations on the flower stems subject to storage showed, that boric acid (V4) had the best results in terms of the number of open flowers per stem. Also, AgNO₃ (V5), Vital Fleur (V2) and GA₃ (V3) positively influenced the number of open flowers on the stem. Instead, potassium benzoate (V6) had negative influenced both the number of flowers open on the stem and their longevity.

16.10-16.20

Chelariu Elena Liliana¹, Cojocariu Mirela¹, Avarvarei Bogdan-Vlad¹, Draghia Lucia¹, Apostol Maria¹, Amișculesei Petronica¹, Bernardis Roberto¹ (¹ Iași University of Life Sciences, Romania)

RESEARCH REGARDING SEEDLINGS PRODUCTION AT *ANTIRRHINUM MAJUS* L. SPECIES
CERCETĂRI PRIVIND TEHNOLOGIA PRODUCERII RĂSADURILOR LA SPECIA *ANTIRRHINUM MAJUS* L.

Antirrhinum majus L. is one of the ornamental species with a wide use in landscaping and floral art. In the current paper are presented some aspects regarding the technology of seedling production, being studied two hybrids of *Antirrhinum majus* L. species: 'Cherry' and 'True Pink'. The research was carried out in the didactic collection of the Floriculture discipline within Iași University of Life Sciences, located in NE Romania. The experiments were organized in four variants represented by different doses of Fertiactyl GZ® (V1, V2, V3 and V4). The results of the research showed that under the action of Fertiactyl GZ a vigorous, compact and healthy seedling was obtained. Studies are part of research grant 14644/2018 USAMV Iași.

COFFEE BREAK 16.20-16.30



POSTER SESSION
THURSDAY, OCTOBER 21st, 2021

Chairpersons:

PhD, Prof. Doina Mira **DASCĂLU**
PhD, Assoc. Prof. Elena Liliana **CHELARIU**
PhD, Prof. Lucia **DRAGHIA**

Secretariat:

PhD, Lecturer Mirela **COJOCARIU**

16.30-16.35

Aelenei Ruxandra Ileana¹, Butcaru Ana Cornelia¹, Petra Sorina Aurelia¹, Toma Florin¹ (¹University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania)

PRELIMINARY RESEARCH ON THE BEHAVIOR OF SOME HOSTA SPECIES AND VARIETIES CULTIVATED DURING TWO YEARS IN BUCHAREST
CERCETĂRI PRELIMINARE PRIVIND COMPORTAREA UNOR SPECII ȘI VARIETĂȚI DE HOSTA CULTIVATE PE PARCURSUL A DOI ANI ÎN BUCUREȘTI

Hosta is a perennial plant appreciated especially for its beautiful foliage but also for the delicate flowers that decorate parks and gardens. This article presents research results performed during October 2018 - October 2020 on the influence of cultivar, species and cultivation areas on the parameters of growth and flowering for 11 varieties of Hosta (T Rex, American Halo, White Feather, Christmas Island, Fragrant Blue, Patriot, Mighty Mouse, Blue Mouse Ears, Sting, Undulata Univittata, Sunset Grooves). The elements of vegetative growth and flowering were observed. For the vegetative growth, the height of the plants, the number of shoots, the number of leaves, the length and width of the leaves and the diameter of the plants were followed. There were significant differences between the two years of vegetation for each of these elements. The T Rex and Patriot cultivars with a 100% emergence percentage in the two years of vegetation were highlighted. For the study of blooming, the percentage of flowering plants, the number of floral stems, the duration of the flowering period, the length of the floral stems and the number of flowers in the inflorescence were determined. In the first year all the varieties bloomed and the number of floral stems per plant ranged between 0.4 (Undulatta Univittata and Sunset Grooves) and 2.25 (Mighty Mouse). In the second year, eight varieties bloomed and the number of floral stems per plant was between 0.25 (Sunset Grooves) and 3.75 (Fragrant Blue). The highest number of flowers in inflorescences was recorded at Blue Mouse Ears (16.6 in the first year and 16.4 in the second year).

16.35-16.40

Ivan Elena Ștefania¹, Ciceoi Roxana¹, Butcaru Ana¹, Nițu Oana Alina¹, Stanică Florin¹ (¹University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania)

THE USE OF GREEN WALLS TO INCREASE THE PHYTO-REMEDIATION OF AIR POLLUTANTS A REVIEW
UTILIZAREA PEREȚILOR VERZI PENTRU CREȘTEREA FITO-REMEDIERII POLUANȚILOR ATMOSFERICI REVIZUIRE

Europe's future depends on a healthy planet. Urban green spaces play a key role in improving the liveability of our towns. Current climate and environmental challenges require an urgent and ambitious response. Climate change is affecting our society in many ways. Rapid, and widespread reduction of greenhouse gas emissions and achieving a net level of greenhouse gas emissions CO₂ equal to zero have the potential to limit climate change and its effects. That is why, lately, the world is fighting in various forms for the creation of new green spaces, especially in the most crowded urban areas. This paper aims to present a review regarding the green walls used to increase the phytoremediation of air pollutants.

16.40-16.45

Bernardis Roberto¹, Sandu Tatiana¹, Chelariu Elena Liliana¹, Zlati Cristina¹, Pașcu Roxana¹ (¹Iași University of Life Sciences, Romania)

OBSERVATIONS THE PHENOLOGY OF *COTONEASTER DIVARICATUS* REHD. SPECIES, IN THE CONDITIONS OF IASI COUNTY
OBSERVAȚII FENOLOGICE ASUPRA SPECIEI *COTONEASTER DIVARICATUS* REHD. ÎN CONDIȚIILE JUDEȚULUI IAȘI

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

16.45-16.50

Zlati Cristina¹, Pașcu Roxana¹, Bernardis Roberto¹ (¹ Iași University of Life Sciences, Romania)

HORTICULTURAL ACTIVITIES WITH LASTING IMPACT ON URBAN COMMUNITIES, IN THE CONTEXT OF COVID 19 LOCKDOWN

ACTIVITĂȚI HORTICOLE CU IMPACT DURABIL ASUPRA COMUNITĂȚILOR URBANE, ÎN CONTEXTUL, IZOLĂRII COVID 19

Horticultural activities in urban areas and suburbs describe economically viable ways of production, and are a continuous growing segment of horticulture in developing countries as well as in Romania and developed countries. This comes as a necessity as the population is continuously growing as the land has a limited use. In a wide sense, urban horticulture includes everything from small home and community gardens to city park management, rooftop greening, as well as complex vertical way of production. This sector assures increased availability of fresh products (vegetables and fruits) in big cities, healthier diets, improved food safety, low transportation costs, efficient resource use, and the mitigation of environmental impacts of horticultural production such as the emission of greenhouse gases.

16.50-16.55

Dodu Diana¹, Dascălu Doina Mira¹ (¹ Iași University of Life Sciences, Romania)

WAYS OF ENHANCING URBAN PERSPECTIVES THROUGH THE USE OF ORNAMENTAL VEGETAL ELEMENTS IN THE HISTORICAL AREA TÂRGU CUCU FROM IAȘI

MODALITĂȚI DE POTENȚARE A PERSPECTIVELOR URBANE PRIN UTILIZAREA ELEMENTELOR VEGETALE ORNAMENTALE ÎN ZONA ISTORICĂ TÂRGU CUCU DIN IAȘI

The concept of "Cities for People " is promoted by the urban planner Jan Gehl and involves the design of new urban settlements, or the transformation of the existing ones, into environments conducive to daily community activities. Whether we refer to the necessary activities or to the leisure ones, the city has the primary duty to provide favorable frameworks for these various manifestations. Since Antiquity, it has been considered that the city belongs to its people and their lives, this perception becoming in the 21st century an ideological current meant to improve the quality of urban life, through architectural, urban, landscape and artistic interventions. The subject of the quality of urban life has become a leitmotif to recent research in the field of urbanism and social sciences, promoting principles and methods aimed at both terms of impact on the human psychic and the environment. In the context of the urban environment of Iași, affected by the urban transformations of the last century, are suggested landscape interventions that would meet the quality criteria of a healthy public space, transforming the dull area into an attractive and dynamic one.

18.40-18.45

Hogea Simona-Ştefania (Research Development Institute for Vegetable and Flower Growing Vidra, Romania)
INTEGRATED PEST CONTROL MANAGEMENT OF *TUTA ABSOLUTA* (TOMATO LEAFMINER) IN
TOMATO CROPS UNDER HIGH PLASTIC TUNNEL
MANAGEMENTUL INTEGRAT AL CONTROLULUI DĂUNĂTORULUI *TUTA ABSOLUTA* (MOLIA
MINIERĂ) LA CULTURILE DE TOMATE DIN SPAȚII PROTEJATE

Tuta absoluta (tomato leafminer) (Meyrick) (Lepidoptera: Gelechiidae) is considered one of the main pests of tomato crops globally and since 2009, it represents a potential danger for tomato crops under high plastic tunnels in Romania. The attack is manifested through mines and galleries produced by young larvae in leaves, stems and fruits, in which they feed and grow. The experience done in 2021, at the R.D.I.V.F.G.Vidra, had as purpose the application of an integrated set of measures and means to control this pest (use of healthy seedlings for planting, use of insect-proof nets, dynamic monitoring of adults density using Delta traps and application of warning treatments for this pest control at two tomato hybrids. From the tested products those based on spinosad 240 g/l - 0.05%, chlorantraniliprol 120 g/l - 0.0175% and cyantraniliprol 100 g/l + acibenzolar-S-methyl 12.5 g/l - 0.125% had an efficiency between 68.64 and 79.96% (Prekos F1 hybrid), respectively 83.60 and 87.39% (Vitara F1 hybrid).

18.45-18.50

Ştefan Ion Alfred¹, Tălmăciu Mihai¹, Tălmăciu Nela¹, Herea Monica¹ (¹ Iași University of Life Sciences, Romania)

OBSERVATIONS ON THE PESTS SPOTTED IN THE VINEYARDS AND THEIR PHYTOSANITARY PROTECTION IN 2020

OBSERVAȚII PRIVIND DAUNĂTORII SEMNALAȚI ÎN PLANTAȚIILE VITICOLE ȘI PROTECȚIA FITOSANITARĂ A ACESTORA ÎN ANUL 2020

The introduction and generalization of the integrated system for the protection of vines is intended to limit the factors leading to the deregulation of natural biological balance. Pesticides, an indispensable component of this system, are a means of combating pathogens and pests in wine-growing. Their efficient use requires integrated management at farm level or even at plot level. A phytosanitary program established at the level of the plot in a demonstration batch shall confirm by the results of the new trends in sustainable viticulture.

18.50-18.55

Turcu Cristina Ionela¹, Tălmăciu Mihai¹, Tălmăciu Nela¹, Herea Monica¹, Chelaru Simona-Mihaela², Perju Ionel² (¹ Iași University of Life Sciences, Romania; ² Research Station for Fruit Growing Iași, România)

OBSERVATIONS ON THE FLIGHT DYNAMICS OF ADULTS OF THE SPECIES *CYDIA POMONELLA* L. UNDER THE CONDITIONS OF 2021 AT SCDP IAȘI

OBSERVAȚII PRIVIND DINAMICA ZBORULUI ADULȚILOR SPECIEI *CYDIA POMONELLA* L. ÎN CONDIȚIILE ANULUI 2021 LA SCDP IAȘI

*The researches regarding the flight dynamics of the pest *Cydia Pomonella* L. were carried out on the territory of Iași county in Miroslava locality, in an intensive apple plantation and the varieties studied being Florina, Idared and Yonagold. The appearance of the pest *Cydia Pomonella* L. was followed with the help of pheromone traps of atraPom type, produced by the Institute of Chemical Research, "Raluca Ripan" from Cluj-Napoca. During the year, the pest had 2 complete generations, the first occurrence being reported on May 7. The maximum flight curve of the first generations was reached on May 24, with a flight staggered throughout the vegetation period of the culture, the flight of butterflies being recorded during a number of 123 calendar days. Pest biology has been heavily influenced by climatic conditions.*

3rd SECTION

LANDSCAPE ARCHITECTURE

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

On-line, via ZOOM

Chairpersons:

PhD, Prof. Doina Mira **DASCĂLU**
PhD, Assoc. Prof. Elena Liliana **CHELARIU**
PhD, Prof. Lucia **DRAGHIA**

Secretariat:

PhD, Lecturer Mirela **COJOCARIU**

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



PLENARY SESSION
THURSDAY, OCTOBER 21st, 2021

14.30-14.40

Greco Condrina¹, Mogîldea Teodora¹ (¹ Iași University of Life Sciences, Romania)

THE USE OF GLASS IN LANDSCAPING ELENA DOAMNA SQUARE FROM IAȘY
UTILIZAREA STICLEI ÎN AMENAJAREA PEISAGERĂ A SCUARULUI ELENA DOAMNA DIN IAȘI

This paper presents a brief review of the ways of using glass, some case studies, but also the solution of redevelopment of a real site in Iasi, all the se arrangement shaving glass as a building material used as a generator of the design concept of entire square. After an analysis of the existing situation of the site proposed for development, the zoning of the site and the images of the proposed solutions for each of the areas are presented, all constituting points of interest of the square connected to each other by a network of alleys connected to the thre emain access points area. The described solution can be a model of landscaping of a degraded green space, in a central urban area of a university city.

14.40-14.50

Prună Liviu¹, Slonovschi Andrei¹ ("Gh. Asachi" Technical University of Iași, Romania)

THE BUILDING PROCESS' AUTOMATIZATION OF THE FURNITURE FOR REST FROM A GARDEN
AUTORMATIZAREA PROCESULUI DE CONSTRUIRE A MOBILIRULIU DESTINAT REPAOSULUI
DINTR-O GRĂDINĂ

Benches are furniture elements from a garden that permit relaxation and resting. They can have various shapes and may be built from different materials. In this paper, the authors present a study referring to the possibility of design automatization of these furniture' elements using the interface named iLogic that is a programming interface included in the Inventor software. In the end, the authors present the conclusions they reached and some recommendations regarding the use of the iLogic interface for benches design.

14.50-15.00

Prună Liviu¹, Slonovschi Andrei¹ ("Gh. Asachi" Technical University of Iași, Romania)

COMMON MISTAKE IN THE REPRESENTATION IN TRIPLE ORTHOGONAL PROJECTION OF
CYLINDRICAL-CONICAL AND METHODS FOR THEIR ELIMINATION
GREȘELI FRECVENTE LA REPREZENTAREA ÎN TRIPLĂ PROIECȚIE ORTOGONALĂ A CILINDRO-
CONICELOR ȘI METODE PENTRU ELIMINAREA ACESTORA

In many elements of street furniture (pergolas, terraces, benches, etc.) the straight cylinder (elliptical or circular) is found as a constructive element. In the execution drawings (plans, main or side views) of these elements, the correct representations in triple orthogonal projection in the clearance of the bodies are necessary. The paper shows the frequent mistakes of the representation in triple orthogonal projection in the shape of the straight cylinder (cylindrical or elliptical that has the base located in various planes (general position, vertical, parallel, or intersecting the OX axis) and propose a solution for avoiding misrepresentations.

15.00-15.10

Filipov Feodor¹, Chelariu Elena Liliana¹, Chiorescu Esmeralda¹ (¹ Iași University of Life Sciences, Romania)

CONSIDERATIONS ON THE VEGETATION DEVELOPED ON EKCRANIC TECHNOSOLS
CONSIDERATII ASUPRA VEGETATIEI DEZVOLTATE PE TEHNOSOLURI EKCRANICE

Technosols is defined as soils which contain more than 20% artefacts in the upper 100 cm from the soil surface (i) or technic hard material (ii) or a cemented (iii) or indurated layer (iv), or slowly permeable to impermeable constructed geomembrane (v) of any thickness starting ≤ 100 cm from the soil surface. Ekcranic (ek)Tecnosols having technic hard material starting ≤ 5 cm from the soil surface. The presence of technogenic material in the first 5 cm from the soil surface severely restricts plant growth. Studies conducted by us in the North East region of Romania have shown that on some screen technosols such as asphalt-covered soils can grow some perennials that cross the asphalt. Some screen technosols such as those covered with concrete only allow the development of the roots of plants that grow along the alleys. On technosols covered with pavers, annual plants are predominantly installed.

15.10-15.20

Hangan Ana-Maria-Roxana¹, Cojocaru Alexandru¹, Teliban Gabriel-Ciprian¹, Stoleru Vasile¹ (¹ Iași University of Life Sciences, Romania)

CLASSIFICATION OF FAMILY VEGETABLE GARDENS
CLASIFICAREA GRĂDINILOR DE LEGUME FAMILIALE

Urban expansion has led the population to create small green spaces around their homes, and the desire to consume fruits and/or vegetables grown according to their own principles, convinced them that a vegetable garden is beneficial, in terms of both food and aesthetics. The data gathered from the specialized scientific literature allowed making a classification of the family vegetable gardens, taking into account the following: the purpose, the style of the design, the functionality and the way of construction. Depending on the purpose, there are vegetable gardens for utilitarian purposes, vegetable gardens for therapeutic purposes and vegetable gardens for culinary purposes. Depending on the style, there are vegetable gardens designed in a geometric style, vegetable gardens arranged in a free style and those arranged in a mixed style. Taking into account the functionality are the ecological, educational, cultural, aesthetic-recreational and sanitary vegetable gardens. In addition, depending on the construction method are the vegetable gardens at ground level, on raised beds, the vegetable gardens in pots and containers and the vegetable gardens on wicker beds. This classification helps to achieve the concept of designing the vegetable garden for decorative purposes and, in this way, can be integrated into the overall design of the property.

15.20-15.30

Dodu Diana¹, Chelariu Elena Liliana¹, Apostol Maria¹, Dascălu Doina Mira¹, Draghia Lucia¹ (¹ Iași University of Life Sciences, Romania)

STUDIES REGARDING THE EFFECT OF THE COMPOSITION OF THE SUBSTRATE ON THE MORPHOLOGICAL AND ORNAMENTAL CHARACTERISTICS OF SOME SPECIES OF PLANTS CULTIVATED IN CONTAINERS
STUDII PRIVIND EFECTUL COMPOZIȚIEI SUBSTRATULUI ASUPRA CARACTERELOR MORFOLOGICE SI ORNAMENTALE ALE UNOR SPECII DE PLANTE CULTIVATE LA CONTAINERE

*In this paper are presented the observations on the adaptation and behavior in some flower species, respectively *Rosmarinus officinalis* L., *Satureja montana* L., *Thymus serpyllum* auct. non. L. and *Sedum caucicola* 'Lidakense' (Praegar) H. Ohba in pot cultivation conditions. The researches were carried out within the Floriculture discipline from University of Life Sciences in Iași. The experiments were organized in seven variants, the experimental factor being the type of soil substrate: V₁ – zeolite; V₂ – peat; V₃ – garden soil; V₄ – zeolite + peat; V₅ – zeolite + garden soil; V₆ – peat + garden soil; V₇ – peat + garden soil + zeolite. During the research, it was observed and measured the influence of the soil substrate type on plants' growing rate and development, evaluating their decorative aspect.*

The best results in terms of branching, height growth and ornamental value of the plants were obtained in the variants V₂, V₄, V₆ and V₇.

15.30-15.40

Pașcu Roxana¹, Zlati Cristina¹, Bernardis Roberto¹ (¹ Iași University of Life Sciences, Romania)
THE USE OF PLANT COMPOSITIONS FOR AREAS WITH A SHORT PERIOD OF INSOLATION
FOLOSIREA COMPOZIȚIILOR VEGETALE PENTRU ZONELE CU PERIOADĂ SCURTĂ DE INSOLAȚIE

Recent studies in the field of sustainable urban planning focus on the plant component, favoring the implementation and conservation of plant material at the highest possible level of quality and performance. In order to better understand the ideology of using dendrological and flowering plants in areas with low insolation, we resorted to their use in a proposal to arrange a private garden. The paper aims to present the methods of arranging private or public gardens taking into account, at the time of design, the needs and requirements of the beneficiary and also the elaboration of a proposal in case the space that is going to be arranged has atypical characters. Here reference is made to the way of designing spaces in which the degree of sunlight is reduced and involves treating them as spaces with semi-shade or shade. In the foreground of this work is the way we use shade and semi-shade plants and how the spaces that benefit from a low degree of insolation are capitalized and integrated.

15.40-15.50

Pașcu Roxana¹, Zlati Cristina¹, Cojocaru Mirela¹ (¹ Iași University of Life Sciences, Romania)
WAYS TO REHABILITATE FAÇADES BY USING PLANTERS
MODALITĂȚI DE REABILITARE A FAȚADELOR PRIN FOLOSIREA JARDINIERELOR

In the context of urbanization accentuated in recent decades, there has been an orientation towards paradigms, which will shape human settlements in a sustainable way able to meet the needs of adaptability to climate change, ensuring primarily environmental quality and conservation of species and habitats. In cities, paved or concrete constructions and surfaces create a specific urban climate, with higher temperatures and a restriction of air circulation, which leads to the production of the so-called "heat island" effect. In contrast, vegetation, through the effect of shade and increasing air humidity contributes to creating a more comfortable environment. Hence the use of the phrase "park - cool island". Lately, a compositional concept of capitalization of vegetation is making its presence felt more and more, emphasizing both the aesthetic role and the role of purification and regeneration of the polluted environment. The solution approached by this work are the arrangements on the vertical given the fact that in the urban environment the vegetation has a role not only aesthetic but also sanogenic.

15.50-16.00

Cojocariu Mirela¹, Chelariu Elena Liliana¹, Chiruță Ciprian¹, Amișculesei Petronica¹, Sonea Andromeda Cristina¹ (¹ Iași University of Life Sciences, Romania)
THE BEHAVIOR OF THE SPECIES *ANTIRRHINUM MAJUS* IN VERTICAL SYSTEMS FOR GREEN FAÇADES, IN THE CLIMATIC CONDITIONS IN THE N-E AREA OF ROMANIA
MODUL DE COMPORTAREA SPECIEI *Antirrhinum majus* ÎN SISTEME VERTICALE PENTRU FAȚADE VERZI, ÎN CONDIȚIILE CLIMATICE DIN ZONA DE N-E A ROMÂNIEI

Annual flowering species, *Antirrhinum majus*, stands out for its compact appearance, longflowering and dense and healthy foliage. This paper aims to study the behavioural pattern of the *Antirrhinum majus* in vertical systems for green façades, in the climatic conditions of the N-E of Romania. The experiment was carried out on height levels, applied to façades oriented towards the four cardinal points with the purpose to conduct a comparative analysis of behaviour, depending on the amount of natural light received specific to each orientation. The study found that *Antirrhinum majus* grown in vertical systems behaves very well regardless of the cardinal orientation of the façade. It is noted, however, that better results were achieved on the west-facing façade in terms of survival rate and coverage.

16.00-16.10

Amișculesei Petronica¹, Apostol Maria¹, Chelariu Elena Liliana¹, Draghia Lucia¹ (¹ Iași University of Life Sciences, Romania)
ASPECTS REGARDING PRESERVATION AND USE OF *CROCOSMIA* CUT FLOWERS
ASPECTE PRIVIND PĂSTRAREA ȘI VALORIFICAREA FLORILOR TĂIATE DE *CROCOSMIA*

Lately, *crocosmia* is gaining more and more interest on the cut flowers market in Romania. The ornamental value of the cut flowers is given by their longevity and the number of flowers on the stem, as well as by the general appearance throughout the storage in pots or arrangements. In this research, determinations were made on the influence of storage solutions on the longevity of *Crocosmia* cut flowers, using six experimental variants: V₁ - distilled water (control); V₂ - commercial preservative / Vital Flower (5g/L); V₃ - gibberellic acid (150 mg /L); V₄ - boric acid (150 mg /L); V₅ - silver nitrate (1000 ppm); V₆ - potassium

benzoate (0.03%). Observations and determinations on the flower stems subject to storage showed, that boric acid (V4) had the best results in terms of the number of open flowers per stem. Also, AgNO₃ (V5), Vital Fleur (V2) and GA₃ (V3) positively influenced the number of open flowers on the stem. Instead, potassium benzoate (V6) had negative influenced both the number of flowers open on the stem and their longevity.

16.10-16.20

Chelariu Elena Liliana¹, Cojocariu Mirela¹, Avarvarei Bogdan-Vlad¹, Draghia Lucia¹, Apostol Maria¹, Amișculesei Petronica¹, Bernardis Roberto¹ (¹ Iași University of Life Sciences, Romania)

RESEARCH REGARDING SEEDLINGS PRODUCTION AT *ANTIRRHINUM MAJUS* L. SPECIES
CERCETĂRI PRIVIND TEHNOLOGIA PRODUCERII RĂSADURILOR LA SPECIA *ANTIRRHINUM MAJUS* L.

Antirrhinum majus L. is one of the ornamental species with a wide use in landscaping and floral art. In the current paper are presented some aspects regarding the technology of seedling production, being studied two hybrids of *Antirrhinum majus* L. species: 'Cherry' and 'True Pink'. The research was carried out in the didactic collection of the Floriculture discipline within Iași University of Life Sciences, located in NE Romania. The experiments were organized in four variants represented by different doses of Fertiactyl GZ® (V1, V2, V3 and V4). The results of the research showed that under the action of Fertiactyl GZ a vigorous, compact and healthy seedling was obtained. Studies are part of research grant 14644/2018 USAMV Iași.

COFFEE BREAK 16.20-16.30



POSTER SESSION
THURSDAY, OCTOBER 21st, 2021

Chairpersons:

PhD, Prof. Doina Mira **DASCĂLU**
PhD, Assoc. Prof. Elena Liliana **CHELARIU**
PhD, Prof. Lucia **DRAGHIA**

Secretariat:

PhD, Lecturer Mirela **COJOCARIU**

16.30-16.35

Aelenei Ruxandra Ileana¹, Butcaru Ana Cornelia¹, Petra Sorina Aurelia¹, Toma Florin¹ (¹University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania)

PRELIMINARY RESEARCH ON THE BEHAVIOR OF SOME HOSTA SPECIES AND VARIETIES CULTIVATED DURING TWO YEARS IN BUCHAREST
CERCETĂRI PRELIMINARE PRIVIND COMPORTAREA UNOR SPECII ȘI VARIETĂȚI DE HOSTA CULTIVATE PE PARCURSUL A DOI ANI ÎN BUCUREȘTI

Hosta is a perennial plant appreciated especially for its beautiful foliage but also for the delicate flowers that decorate parks and gardens. This article presents research results performed during October 2018 - October 2020 on the influence of cultivar, species and cultivation areas on the parameters of growth and flowering for 11 varieties of Hosta (T Rex, American Halo, White Feather, Christmas Island, Fragrant Blue, Patriot, Mighty Mouse, Blue Mouse Ears, Sting, Undulata Univittata, Sunset Grooves). The elements of vegetative growth and flowering were observed. For the vegetative growth, the height of the plants, the number of shoots, the number of leaves, the length and width of the leaves and the diameter of the plants were followed. There were significant differences between the two years of vegetation for each of these elements. The T Rex and Patriot cultivars with a 100% emergence percentage in the two years of vegetation were highlighted. For the study of blooming, the percentage of flowering plants, the number of floral stems, the duration of the flowering period, the length of the floral stems and the number of flowers in the inflorescence were determined. In the first year all the varieties bloomed and the number of floral stems per plant ranged between 0.4 (Undulatta Univittata and Sunset Grooves) and 2.25 (Mighty Mouse). In the second year, eight varieties bloomed and the number of floral stems per plant was between 0.25 (Sunset Grooves) and 3.75 (Fragrant Blue). The highest number of flowers in inflorescences was recorded at Blue Mouse Ears (16.6 in the first year and 16.4 in the second year).

16.35-16.40

Ivan Elena Ștefania¹, Ciceoi Roxana¹, Butcaru Ana¹, Nițu Oana Alina¹, Stanică Florin¹ (¹University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania)

THE USE OF GREEN WALLS TO INCREASE THE PHYTO-REMEDIATION OF AIR POLLUTANTS A REVIEW
UTILIZAREA PEREȚILOR VERZI PENTRU CREȘTEREA FITO-REMEDIERII POLUANȚILOR ATMOSFERICI REVIZUIRE

Europe's future depends on a healthy planet. Urban green spaces play a key role in improving the liveability of our towns. Current climate and environmental challenges require an urgent and ambitious response. Climate change is affecting our society in many ways. Rapid, and widespread reduction of greenhouse gas emissions and achieving a net level of greenhouse gas emissions CO₂ equal to zero have the potential to limit climate change and its effects. That is why, lately, the world is fighting in various forms for the creation of new green spaces, especially in the most crowded urban areas. This paper aims to present a review regarding the green walls used to increase the phytoremediation of air pollutants.

16.40-16.45

Bernardis Roberto¹, Sandu Tatiana¹, Chelariu Elena Liliana¹, Zlati Cristina¹, Pașcu Roxana¹ (¹Iași University of Life Sciences, Romania)

OBSERVATIONS THE PHENOLOGY OF *COTONEASTER DIVARICATUS* REHD. SPECIES, IN THE CONDITIONS OF IASI COUNTY
OBSERVAȚII FENOLOGICE ASUPRA SPECIEI *COTONEASTER DIVARICATUS* REHD. ÎN CONDIȚIILE JUDEȚULUI IAȘI

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

16.45-16.50

Zlati Cristina¹, Pașcu Roxana¹, Bernardis Roberto¹ (¹ Iași University of Life Sciences, Romania)

HORTICULTURAL ACTIVITIES WITH LASTING IMPACT ON URBAN COMMUNITIES, IN THE CONTEXT OF COVID 19 LOCKDOWN

ACTIVITĂȚI HORTICOLE CU IMPACT DURABIL ASUPRA COMUNITĂȚILOR URBANE, ÎN CONTEXTUL, IZOLĂRII COVID 19

Horticultural activities in urban areas and suburbs describe economically viable ways of production, and are a continuous growing segment of horticulture in developing countries as well as in Romania and developed countries. This comes as a necessity as the population is continuously growing as the land has a limited use. In a wide sense, urban horticulture includes everything from small home and community gardens to city park management, rooftop greening, as well as complex vertical way of production. This sector assures increased availability of fresh products (vegetables and fruits) in big cities, healthier diets, improved food safety, low transportation costs, efficient resource use, and the mitigation of environmental impacts of horticultural production such as the emission of greenhouse gases.

16.50-16.55

Dodu Diana¹, Dascălu Doina Mira¹ (¹ Iași University of Life Sciences, Romania)

WAYS OF ENHANCING URBAN PERSPECTIVES THROUGH THE USE OF ORNAMENTAL VEGETAL ELEMENTS IN THE HISTORICAL AREA TÂRGU CUCU FROM IAȘI

MODALITĂȚI DE POTENȚARE A PERSPECTIVELOR URBANE PRIN UTILIZAREA ELEMENTELOR VEGETALE ORNAMENTALE ÎN ZONA ISTORICĂ TÂRGU CUCU DIN IAȘI

The concept of "Cities for People " is promoted by the urban planner Jan Gehl and involves the design of new urban settlements, or the transformation of the existing ones, into environments conducive to daily community activities. Whether we refer to the necessary activities or to the leisure ones, the city has the primary duty to provide favorable frameworks for these various manifestations. Since Antiquity, it has been considered that the city belongs to its people and their lives, this perception becoming in the 21st century an ideological current meant to improve the quality of urban life, through architectural, urban, landscape and artistic interventions. The subject of the quality of urban life has become a leitmotif to recent research in the field of urbanism and social sciences, promoting principles and methods aimed at both terms of impact on the human psychic and the environment. In the context of the urban environment of Iași, affected by the urban transformations of the last century, are suggested landscape interventions that would meet the quality criteria of a healthy public space, transforming the dull area into an attractive and dynamic one.

4th SECTION

ENGINEERING AND ENVIRONMENTAL PROTECTION

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

On-line, via ZOOM

Chairpersons:

PhD, Prof. Mihai **ISTRATE**
PhD, Prof. Liliana **ROTARU**
PhD, Prof. Vasile **STOLERU**

Secretariat:

PhD, Lecturer Raluca Maria **HLIHOR**

Presentation time: **5-7 minutes**



PLENARY SESSION
THURSDAY, OCTOBER 21st, 2021

14.30-14.40

Filote Cătălina^{1,2}, Roșca Mihaela¹, Simion Isabela Maria¹, Hlihor Raluca-Maria¹ (¹ Iași University of Life Sciences, Romania; ²“Gheorghe Asachi” Technical University of Iasi, Romania)

CONTINUOUS SYSTEM BIOREMEDIATION OF WASTEWATERS LOADED WITH HEAVY METALS USING MICROORGANISMS
BIOREMEDIEREA ÎN SISTEM CONTINUU A APELOR UZATE ÎNCĂRCATE CU METALE GRELE UTILIZÂND MICROORGANISME

Heavy metal pollution is a serious concern of the modern era due to its widespread negative effects on human health and the environment. Conventional technologies applied for the uptake of this category of persistent pollutants are complex, often expensive and also inefficient at low metal concentrations. In the last years, alternatives have been studied in search of better solutions in terms of costs and sustainability. Microbial adsorbents are one of the biomass-based sorbents that have extensively demonstrated excellent heavy metals removal capacity even at low concentrations. However, most of the carried-out research regarding their application in wastewater treatment has been performed in discontinuous system. The use of microorganisms for the uptake of metal ions in a continuous system is important for the upscale of the remediation processes since it facilitates a faster remediation of higher quantities of wastewater loaded with heavy metals, in comparison with batch removal. Thus, the current research aims to analyze the available studies concerning the removal of metal ions from wastewaters using microorganisms, in continuous systems, with a focus on obtained performances and optimized experimental conditions. This work was supported by a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS/CCCDI – UEFISCDI, project number PN-III-P2-2.1-PED-2019-2430, contract no. 439 PED/2020, within PNCDI III.

14.40-14.50

Ghiga Simona Cecilia¹, Simion Isabela Maria², Hlihor Raluca Maria², Bonoli Alessandra³, Gavrilescu Maria^{1,4} (¹“Gheorghe Asachi” Technical University of Iasi, Romania; ²Iași University of Life Sciences, Romania; ³DICAM, Alma Mater Studiorum University of Studies of Bologna, Italy; ⁴Academy of Romanian Scientists, Bucharest, Romania)

A COMPARISON OF WEEE MANAGEMENT STRATEGIES APPLIED IN ROMANIA AND ITALY
O COMPARAȚIE A STRATEGIILOR DE MANAGEMENT A DEEE-URILOR APLICATE ÎN ROMÂNIA ȘI
ITALIA

The environmental and human health impacts generated by waste electric and electronic equipment (WEEE) is widespread in most ecosystems. Heavy metals components specific to electrical waste have been found even at the nano level. Based on the three pillars of waste management (prevention, recycling and reuse of waste), European Union legislation was defined and started to be implemented in waste management. Therefore, we propose through the present work an assessment of two approaches regarding the WEEE management, implemented in Romania and Italy. Our analysis carried out for the year 2015, revealed that the total collected WEEE amount was higher for Romania (7.3 kg per inhabitant) in comparison to Italy (4.1 kg per inhabitant). Comparing both countries, we observed an increased amount of waste being collected in the past years. Scenarios of management systems for the reduction of WEEE quantities sent to landfill were also analyzed in the present work for both case studies. Romania is still a heavy WEEE generator, but there are some new regulations emerging which promise to improve their management.

14.50-15.00

Hagiu Zaleschi Laura¹, Simion Isabela-Maria¹, Apostol Maria¹, Hlihor Raluca-Maria¹ (¹ Iași University of Life Sciences, Romania)

IMPACT OF CADMIUM AND LEAD STRESS ON *ORIGANUM VULGARE* L. SEEDS GERMINATION
IMPACTUL STRESULUI CAUZAT DE CADMIU ȘI PLUMB ASUPRA GERMINAȚIEI SEMINȚELOR DE
ORIGANUM VULGARE L.

*Soil and water resources contamination especially due to an increased pollution has received an enhanced attention especially due to polluted agricultural areas defined by heavy metal stress. Heavy metal accumulation in soils can cause many environmental and human health problems. Heavy metal presence in agricultural soils could cause negative effects to plant growth, yield and productivity. Plants are the main link in the transfer of heavy metals from the contaminated soil to humans. Medicinal plants such as oregano (*Origanum vulgare* L.) are widely used for their medicinal properties and their contamination with heavy metals could lead to serious health effects. Our study was conducted to evaluate the influence of Cd(II) and Pb(II) (0-250 mg/L) toxicity on *Origanum vulgare* L. seeds germination and seedlings growth. Both Cd(II) and Pb(II) stress conditions negatively affected the seeds germination. The germination (%) and the radicle, hypocotyl and leaves length were visibly affected at higher concentrations than 50 mg/L pollutant. The negative effect of heavy metals elevated with increasing the concentrations of Cd(II) and Pb(II) and major changes were observed especially in the case of the radicle and hypocotyl. This work was supported by the Romanian Ministry of Education and Research, CNCS - UEFISCDI, project number PN-III-P1-1.1-TE-2019-1200, contract no. 120/2020. “Ion Ionescu de la Brad” Iasi University of Life Sciences, Romania and Horticultural Research Center are highly acknowledged for their continuous support during the implementation of the RiskToxPlants project.*

15.00-15.10

Hlihor Raluca-Maria¹, Apostol Maria¹, Hagiu Zaleschi Laura¹, Simion Isabela-Maria¹, Asimnicesei Dana-Mihaela, Gavrilescu Maria^{2,3} (¹ Iași University of Life Sciences, Romania; ²“Gheorghe Asachi” Technical University of Iasi, Romania; ³Academy of Romanian Scientists, Romania)

PHYTOTOXICITY EFFECTS OF HEAVY METALS ON THE INHIBITION OF *LAVANDULA ANGUSTIFOLIA* ‘HIDCOTE BLUE’ SEED GERMINATION
EFECTELE FITOTOXICITĂȚII GENERATE DE METALELE GRELE ASUPRA INHIBIȚIEI GERMINAȚIEI
SEMINȚELOR DE *LAVANDULA ANGUSTIFOLIA* ‘HIDCOTE BLUE’

*The treatment of various diseases is done nowadays also considering the so-called traditional medicine using different herbal remedies. Although, natural herbs are being considered a safe alternative, there has been an increasing concern among researchers regarding their safety and toxicity which could be related to environmental pollution (e.g. soil contamination with pesticides and/or heavy metals). Moreover, aromatic plants are also commonly produced for their ornamental and cosmetic purposes. Lavender (*Lavandula angustifolia* Mill.) is one of the medicinal plants with high economical value, its essential oil*

being used both in phytotherapy and cosmetics, therefore its contamination with heavy metals could pose serious health effects. In the present study, we propose a comparison of the stress caused by Cd(II) and Pb(II) to *Lavandula angustifolia* 'Hidcote Blue' seeds germination. Radicle, hypocotyl and leaves inhibition degree and tolerance index, as well as the vigor index of *L. angustifolia* 'Hidcote Blue' under Cd(II) and Pb(II) stress were also investigated. We observed that the lavender germination and seedlings growth were affected especially by the presence of Cd(II), and its toxicity is represented mainly by the damage of the radicle system after a concentration of 20 mg/L. This work was supported by the Romanian Ministry of Education and Research, CNCS - UEFISCDI, project number PN-III-P1-1.1-TE-2019-1200, contract no. 120/2020. "Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania and Horticultural Research Center are highly acknowledged for their continuous support during the implementation of the RiskToxPlants project.

15.10-15.20

Luca Mihail¹, Toma Daniel¹, Marcoie Nicolae¹, Dominte Violeta¹ (¹ "Gheorghe Asachi" Technical University of Iasi, Romania)

THE IMPACT OF INDUSTRIAL WASTE DUMPS ON THE ENVIRONMENT IN THE AREA OF MOLDOVA

The environment represents the set of natural components of the Earth as well as their conditions of existence. The components are defined by air, water, soil and subsoil, flora and fauna, as well as the social-human component. A process of alteration of biotic and abiotic living environments, but also of the values created by human society is pollution. In the last hundred years, the pollution caused by human activities has increased. An example of disaster pollution is that produced by landfills (solid and liquid) in various stages of operation. In Romania there are about 800 industrial landfills with an extremely high pollution potential. In the area of Moldova there are a number of industrial dumps with a special impact on the environment due to poor management of the maintenance process. Industrial dumps come from steel plants, mining, power plants, industrial products factories, etc. Representative in this case are the waste dump from the Galati steel plant, the tailings dumps from the mining operations in the north of the Eastern Carpathians, the ash dump from CET Holboca Iași and so on. The paper summarizes a series of research on the impact on the environment and in particular on surface and groundwater by these polluting objectives.

15.20-15.30

Luca Mihail¹, Marcoie Nicolae¹, Toma Daniel¹ (¹ "Gheorghe Asachi" Technical University of Iasi, Romania)

UNDERGROUND WASTE LANDFILLS PERMANENT SOURCES OF POLLUTION

Romania has a significant number of industrial waste landfills in various stages of operation and conservation. Among these are some with special characteristics and high potential for pollution over time in the absence of proper conservation work. The most representative are the underground industrial waste landfills, and as characteristic examples are those from the Ocnelor Mari area, Vâlcea County. These deposits resulted from the exploitation of salt deposits with the help of extraction wells. The underground deposit consists of a cavern in which a solution of sodium chloride remained. The pollution phenomenon is manifested inside by the propagation of the acid solution in the rock massif and the degradation of the slope stability. The implosion of the cave causes the collapse of the rock layer that forms the roof and the expulsion of the sodium chloride solution in the surrounding area. The pollution phenomenon has a disaster character, having a special impact on the natural environment, but also on the social-human environment. The volume of brine expelled when a cave collapsed in 2001 formed a flood wave that spread over the Sărat Stream, the Olt River and the Danube River. The ecological disaster affected the localities, the soil and subsoil, the rivers and lakes in the contact area.

15.30-15.40

Roșca Mihaela¹, Hlihor Raluca-Maria¹, Cozma Petronela^{1,2}, Simion Isabela-Maria¹, Filote Cătălina^{1,2}, Apostol Maria¹, Gavrilescu Maria^{2,3} (¹ Iași University of Life Sciences, Romania; ² "Gheorghe Asachi" Technical University of Iasi, Romania; ³ Academy of Romanian Scientists, Romania)

RESPONSE SURFACE METHODOLOGY FOR ASSESSMENT AND OPTIMIZATION OF MICROBIAL BIOREMEDIATION PROCESS

METODOLOGIA SUPRAFEȚEI DE RĂSPUNS PENTRU EVALUAREA ȘI OPTIMIZAREA PROCESULUI DE BIOREMEDIARE MICROBIANĂ

Response Surface Methodology (RSM) is a collection of statistical and mathematical techniques, which is increasingly used in the evaluation and optimization of bioremediation processes of contaminated effluents with organic and inorganic compounds. Due to the diversity of factors that affect the biosorption process,

this paper highlights the importance of using the RSM in the modeling and refining of the experimental results obtained at laboratory or pilot level. Therefore, in this paper we outline the advantages and disadvantages, as well the framework of this methodology. Furthermore, the usefulness of RSM has been exemplified by applying it to a process involving the removal of hexavalent chromium ions by biosorption considering Saccharomyces cerevisiae yeast biomass. Thus, for the considered experimental study, the RSM identified the statistically significant influencing factors and provided the factors optimal values to achieve the maximum performance. This work was supported by a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS/CCCDI – UEFISCDI, project number PN-III-P2-2.1-PED-2019-2430, contract no. 439 PED/2020, within PNCDI III. “Ion Ionescu de la Brad” Iasi University of Life Sciences, Romania is highly acknowledged for its continuous support during the implementation of the SusTrEE project.

15.40-15.50

Tanasă Alexandra¹, Daraban Gabriel Mihaiță¹, Zaharia Carmen¹, Şuteu Daniela¹ (¹ “Gheorghe Asachi” Technical University of Iasi, Romania)

BIOVEGETALS' WASTES USED AS BIOSORBENT FOR REMOVAL OF CHEMICAL POLLUTANTS FROM WASTEWATER

Obtaining biopesticides from spontaneous flora (such as: Artemisia absinthium, Primula veris, Achillea millefolium, Origanum vulgare) through various liquid-solid extraction techniques (e.g. Heat Assisted Extraction on Soxhlet apparatus, HAE) leads to the obtaining at the extraction end of significant amounts of plant biowastes. One of their forms of capitalization is to consider them as potential efficient adsorptive materials for retaining chemical pollutants (e.g., dyes and / or metal ions) from different types of wastewaters. In this context, our aim is to investigate the main factors that can influence the retention capacity against a few studied pollutants such as Orange 16 dye and Cu (II) ions present in aqueous solutions, respectively the influence of pH, temperature, biosorbent dose, and contact time.

15.50-16.00

Tăriță A.¹, Braşoveanu V.¹, Jigău Gh. ² (¹Institute of Ecology and Geography, Republic of Moldova;² State University of Moldova, Republic of Moldova)

THE CONTENT OF HEAVY METALS IN THE SOILS OF THE STATE PROTECTED NATURAL AREAS IN THE SOUTH-EASTERN AREA OF THE REPUBLIC OF MOLDOVA

CONȚINUTUL METALELOR GRELE ÎN SOLURILE ARIILOR NATURALE PROTEJATE DE STAT DIN REGIUNEA DE SUD-EST A REPUBLICII MOLDOVA

Heavy metal (HM) content has been assessed in soils within 10 state protected natural areas (SPNA). The soil samples were collected from the soil layer 0-20 which is in direct relation to all biotic (edaphic and bioindicator plant organisms, soil microorganisms) and abiotic (atmospheric and wind deposits, physico-chemical processes, etc.) components responsible for the HM circuit within the ecosystems. Evaluated on the basis of the grading scale of soils of the Republic of Moldova, (Курпилюк (2006), the content of HM (Zn, Cu, Ni, Co) analyzed, for the soil layer studied, was included in the categories of very low - high levels. In the evaluated soil layer, no cases of studied HM pollution were recorded. In some cases, however, there are trends in the accumulation of Zn and Cu, but their contents do not exceed the alert threshold (AT) values. Both for APNA and for other terrestrial ecosystems, increased Cu and sometimes Zn content in environmental components are characteristic, as a result of the intensive processing of surrounding agricultural land and forests with phytosanitary products containing Cu and Zn. After Adriano (1986), copper and zinc fall into the category of microelements with a biologically important role for forest ecosystems, deficiencies (<10 mg/kg) or exceed the AT (>100 mg/kg), can cause reduction of root and shoot growth, inhibition of enzymes, risks that in the case of ecosystems investigated are not attested. In the case of the intervention threshold (IT), the studied HM values do not reach these values after Kloke (1980), which excludes the risk of toxicity, in the studied ecosystems, for plants and soil organisms.

16.00-16.10

Tucaliuc Roxana-Angela¹, Mangalagiu I. I.²(¹Iasi University of Life Sciences, Romania; ²“Alexandru Ioan Cuza” University Iasi, Romania)

BIOISOSTERS WITH PYRIDAZINIC STRUCTURE AND ANTIMICROBIAL ACTIVITY
BIOIZOSTERI CU STRUCTURĂ PIRIDAZINICĂ ŞI PROPRIETĂȚI ANTIMICROBIENE

In medical chemistry, bioisosters are substituents (atoms, ions or molecules) with similar physical or chemical properties. They produce similar biological properties to another chemical compound. Three bioisosters by pyridazine salts were prepared and tested in vitro as antimicrobial compounds. They have proved to have a remarkable activity against different microorganisms.

16.10-16.20

Simion Isabela-Maria¹, Roșca Mihaela¹, Filote Cătălina¹, Hlihor Raluca-Maria¹ (¹ Iași University of Life Sciences, Romania)

ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE REMOVAL OF HEAVY METALS FROM WASTEWATERS IN DYNAMIC SYSTEMS

IMPACTURI DE MEDIU ASOCIATE CU ÎNDEPĂRTAREA METALELOR GRELE DIN APELE UZATE ÎN SISTEME CONTINUE

*Since the environment is every day invaded by heavy metals, scientists are continuously developing or searching eco-friendly processes for their removal. In this study we considered the bioaccumulation process of Cr(VI) removal using as biosorbent the bacterial biomass of *Artrobacter viscosus*, due to its possible low impact on the environment. We choose to focus on a dynamic system because continuous removal facilitates a faster remediation of larger quantities of wastewater loaded with heavy metals in comparison to batch removal of heavy metals. Our objective is to evaluate Cr(VI) bioaccumulation, in a dynamic system, through Life Cycle Assessment methodology to demonstrate process environmental and human health benefits. For the evaluation of the environmental impacts we considered ReCiPe16 method. Life cycle impact assessment (LCIA) translates emissions and resource extractions into a limited number of environmental impact scores by means of the so-called characterization factors. Environmental impacts resulted from the removal of Cr(VI) from aqueous solutions in dynamic systems by *A. viscosus* using ReCiPe 2016 methodology are Climate change, Human toxicity, Terrestrial toxicity, Terrestrial acidification, Photochemical Ozone Formation. Bioaccumulation of Cr(VI) by *A. viscosus* could be considered as a suitable process for the removal of heavy metals from wastewaters rather than conventional processes, due to its good performance and environmentally friendliness. This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS/CCCDI – UEFISCDI, project number PN-III-P2-2.1-PED-2019-2430, no. 439 PED/2020, within PNCDI III. “Ion Ionescu de la Brad” Iasi University of Life Sciences, Romania is highly acknowledged for its continuous support during the implementation of the SusTrEE project.*

COFFEE BREAK 16.20-16.30



POSTER SESSION
THURSDAY, OCTOBER 21st, 2021

Chairpersons:

PhD, Prof. Mihai **ISTRATE**
PhD, Prof. Liliana **ROTARU**
PhD, Prof. Vasile **STOLERU**

Secretariat:

PhD, Lecturer Raluca Maria **HLIHOR**

16.30-16.35

Hlihor Raluca-Maria¹, Roșca Mihaela¹, Diaconu Mariana¹, Simion Isabela-Maria¹, Cozma Petronela^{1,2}, Gavrilescu Maria^{2,3} (¹ Iași University of Life Sciences, Romania; ²“Gheorghe Asachi” Technical University of Iași, Romania; ³Academy of Romanian Scientists, Bucharest, Romania)

AN INVESTIGATION ON TOLERANCE AND BIOACCUMULATION POTENTIAL OF FUNGAL BIOMASS IN THE REMOVAL OF Cd(II) FROM WASTEWATERS
STUDIUL PRIVIND TOLERANȚA ȘI BIOACUMULAREA Cd(II) DIN APELE UZATE PRIN UTILIZAREA BIOMASEI FUNGICE

*The capacity of certain types of microbial biomass to remove and concentrate heavy metals from solutions provides the basis for a cost-effective technology for detoxification of industrial effluents. Many biological materials can bind heavy metals but only those with sufficiently high metal binding capacity and selectivity for heavy metals are suitable for use in a full-scale biosorption/bioaccumulation process. Fungi can be of great interest for bioremediation processes since they are able to remove heavy metals from aqueous solutions in large substantial quantities, they have low nutritional requirements and also, they could be available from the fermentation industry as a waste. The aim of this paper is to evaluate and discuss several parameters (e.g. initial pH, initial metal concentration and biomass growth) that influence the bioaccumulation of Cd(II) from aqueous solution by *Trichoderma viride* (spore suspension inoculum, TVS, and 7 days grown biomass inoculum, TVB) isolated from a forest soil in Iași area, Romania. Both TVS and TVB were able to bioaccumulate 100% of 50 mg/L Cd(II) at pH 6. Moreover, the growth of the microorganism in the presence of Cd(II) was estimated at 13.37 g/L and 15.88 g/L for TVS and TVB, respectively. The bioaccumulated Cd(II) concentrations and bioaccumulation efficiencies were reduced by the presence of increasing concentrations of the metal ion. The removal efficiency of Cd(II) bioaccumulation decreased with increasing Cd(II) concentration from 25 to 200 mg/L, from 100% to 21.27% and 46.64% for TVS and TVB, respectively. Our study demonstrated that living biomass of *Trichoderma viride* could be successfully used in the bioaccumulation of Cd(II) from aqueous solutions. This work was supported by BRAIN project Doctoral scholarships as an investment in intelligence-ID 6681, financed by the European Social Fund and Romanian Government and by a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS/CCCDI – UEFISCDI, project number PN-III-P2-2.1-PED-2019-2430, contract no. 439 PED/2020, within PNCDI III.*

16.35-16.40

Roșca Mihaela¹, Hlihor Raluca-Maria¹, Mihalache Gabriela¹, Stoleru Vasile¹ (¹ Iași University of Life Sciences, Romania)

HEAVY METALS CONTAMINATION OF FRUITS AND VEGETABLES IN EUROPE
CONTAMINAREA FRUCTELOR ȘI LEGUMELOR CU METALE GRELE ÎN EUROPA

Heavy metals are natural compounds of the soil and due the human activities and some natural causes, their levels exceed the legislative threshold values in some agricultural soils, becoming harmful for human health and environment. At the level of the European Union there are laws which regulate the threshold values of heavy metals in agriculture soils and in fruits and vegetables. Unfortunately, in markets there are still plant products of whose heavy metals (or other contaminants) content exceeds the maximum allowable levels. Contamination of food crops with heavy metals is mainly due to the crops growth in polluted soils and the excessive use of plants protection products with heavy metals. Thus, their short- or long-term consumption can pose risk to human health. In this context, the purpose of this paper is to identify, based on published studies, the content of cadmium, lead, copper and zinc in fruits and vegetables grown in different parts of Europe or sold on the markets of European Community countries.

According to the results of published studies, the fruits and vegetables grown in certain areas of Europe, including in some areas of Romania, may be harmful to human health, the cadmium, lead, copper and zinc levels exceeding the maximum permitted limits.

16.40-16.45

Simion Isabela-Maria¹, Hagi Zaleschi Laura¹, Apostol Maria¹, Hlihor Raluca-Maria¹ (¹ Iasi University of Life Sciences, Romania)

A PRELIMINARY INVESTIGATION OF HEAVY METALS TOXICITY TO BASIL SEEDLING GROWTH
STUDIUL PRELIMINAR PRIVIND TOXICITATEA METALELOR GRELE PENTRU CREȘTEREA
GERMENILOR DE BUSUIOC

Since ancient times medicinal plants have played a crucial role in traditional medicine and for home remedies. Environmental pollution, harvesting and handling are important factors which are considered essential in the contamination of medicinal plants. The levels of environmental pollution especially with heavy metals are of major interest for the scientific community since the presence of these elements in herbal plants in different doses could affect the human health. Ocimum basilicum L. (basil) is one of the medicinal plants which has been used for the production of essential oils, as dried leaves or fresh herbage, being especially known in food, cosmetic, pharmaceutical or perfumery industries. Our paper proposes a comparative investigation of the stress caused by heavy metals represented by Pb(II) and Ni(II) to the seedlings of O. basilicum L. by assessing tolerance, toxicity and vigor indexes under different metal concentrations. By increasing metal concentration up to 500 mg/L for Pb(II) and up to 100 mg/L Ni(II), major toxic effects were observed to the radicle, hypocotyl and leaves of basil. Our study suggests that further studies in contaminated soil are necessary to assess the risk to human health caused by herbal plants contamination with heavy metals. This work was supported by the Romanian Ministry of Education and Research, CNCS - UEFISCDI, project number PN-III-P1-1.1-TE-2019-1200, contract no. 120/2020. "Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania and Horticultural Research Center are highly acknowledged for their continuous support during the implementation of the RiskToxPlants project.

16.45-16.50

Enache Viorica (Research-Development Station for Viticulture and Winemaking Bujoru, Romania)

THE INFLUENCE OF A DRY YEAR ON THE GRAPE PRODUCTION IN DEALU BUJORULUI VINEYARD
INFLUENȚA UNUI AN SECETOS ASUPRA PRODUCȚIEI DE STRUGURI ÎN PODGORIA DEALU
BUJORULUI

The researches were carried out at the Research and Development Station for Viticulture and Vinification Bujoru in the conditions of a particularly dry year. The main objective of the paper is to establish the influence of extreme weather conditions on grape production. The combat production was analyzed in quantitative and qualitative aspect for the varieties: Bujoru, Blasius, Negru aromat, Muscat Ottonel 49 Bj and Șarbă. Based on the mechanical components of the grapes, technological indices were calculated whose values complement the qualitative characteristics of the varieties. Under the climatic conditions of 2020, the analyzed varieties did not reach their biological potential.

16.50-16.55

Roșu Crăița-Maria¹, Corciovă Andreia², Vlase Laurian³, Ivănescu Bianca² (¹Institute of Biological Research, Iasi – branch of NIRDBS, Romania; ²University of Medicine and Pharmacy "Grigore T Popa", Faculty of Pharmacy, Romania; ³ University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj –Napoca, Faculty of Pharmacy, Romania)

CHARACTERIZATION OF ARTEMISIA LAVANDULAEFOLIA AND ARTEMISIA ANNUA ALCOHOLIC
EXTRACTS, THEIR CHEMICAL PROFILE AND ANTIMICROBIAL ACTIVITY
CARACTERIZAREA EXTRACTELOR ALCOOLICE DE ARTEMISIA LAVANDULAEFOLIA ȘI ARTEMISIA
ANNUA, ACTIVITATEA ANTIMICROBIANĂ ȘI PROFILUL CHIMIC

Ethanollic (70%) and methanolic extracts of A. lavandulaefolia and A. annua were screened for their antifungal activity against eight phytopathogenic and mycotoxigenic strains of Alternaria spp., Fusarium spp., Botrytis spp., Penicillium spp., and Aspergillus spp., and their chemical profile was determined. The antifungal activity of alcoholic extracts was carried out according to the poisoned food technique. It was found that ethanollic (70%) extracts were more effective than methanolic extracts in inhibiting the radial mycelial growth of all tested fungal strains. The maximum effects of A. lavandulaefolia ethanollic extracts (84.12 – 100% inhibitions of mycelial growth) and methanolic extracts (63.40 – 95.40% inhibitions) were obtained at concentration of 10 mg/ml. Better results were obtained with A. annua ethanollic extracts, which showed 76.19 – 100% inhibition of fungal growth at lower concentration of 5 - 2.5 mg/ml, mainly against Alternaria alternata, Fusarium oxysporum f. sp. lycopersici and Penicillium expansum. The phytoextracts were subjected to LC-MS analysis for identification and quantification of polyphenols, sesquiterpene lactones, phytosterols, and tocopherols. The main polyphenol compounds identified in A.

annua were chlorogenic acid and casticin, while in *A. lavandulaefolia* predominated chlorogenic acid, isoquercitrin and eupatorin. Important levels of β -sitosterol were determined in both species, notably in the methanolic extracts. Moreover, *A. annua* extracts were distinguished by the significant content of sesquiterpene lactones, artemisinin, alantolactone and costunolide, mainly in the ethanolic extract. Based on our results, both *Artemisia* spp. species could be considered as good candidates to be used for developing of new less hazardous biofungicide commercial formulations, useful in ecological agriculture, in prevention and control of phytopathogenic and post-harvest contamination fungi. This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS/CCCDI – UEFISCDI, project no. PN-III-P2-2.1-PED-2019-0091, within PNCDI III, Contract no. 394/2020.

16.55-17.00

Enachi Andreea¹, Favier Lidia², Ciobanu Gabriela¹, Buema Gabriela³, Harja Maria¹ (¹Gheorghe Asachi Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection, Iasi, Romania; ²Univ. Rennes, Ecole Nationale Supérieure de Chimie de Rennes, France; ³National Institute of Research and Development for Technical Physics, Iasi, Romania)

NEW ALKALI ACTIVATED MATERIALS FOR DYES REMOVAL

NOI MATERIALE ACTIVATE ALCALIN PENTRU REȚINEREA COLORANȚILOR

In this paper is presented synthesis and characterization of new materials and influence over the dyes removing. The use of by-product materials (fly ash, slag) is attractive for reducing the pollution with waste and saving the natural material resources. Alkali activated materials (AAMs) mean an inorganic polymeric material that can be used as an alternative to conventional cement binders, but posed and very good capacity to remove dyes from wastewaters. The fly ash classes F and sodium hydroxide (2, 4, 6, 8 and 10M) were used for AAMs synthesis. All samples were activated at 69 °C for 4 h and held at 23±2 °C until testing. The obtained materials were investigated using SEM-EDX, XRD analyses, FTIR and adsorption capacity. The experimental results demonstrated that the adsorption rate was over 85.7% for fly ash and 96.5% for all synthesized materials. Alkali activated materials can be successful used for wastewater treatment. This work was supported by a publications grant of the TUIASI, project number GI/P14/2021.

17.00-17.05

Vasiliu Leonid¹, Gencil Osman², Ciobanu Gabriela¹, Harja Maria¹ (¹Gheorghe Asachi Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection, Iasi, Romania; ²Civil Engineering Department, Faculty of Engineering, Bartin University, Turkey)

TIRES WASTE USED AS DERIVED FUEL IN CEMENT OBTAINING

DEȘEURILE DE ANVELOPE UTILIZATE CA COMBUSTIBIL ALTERNATIV PENTRU OBȚINEREA CIMENTULUI

The different waste materials are used as alternative fuels in cement plant in order to decrease the environmental impact. In the last years tires waste is used in co-incineration, because are inexpensive and not need supplementary investment. The investigation refers to the influence of tires waste incineration over clinker quality and gaseous emissions. The principal objective of this paper is to establish the influence of the use of tires waste on: gaseous emissions (SO₂, NO_x, heavy metals, etc.), the parameters of the clinker kiln and the quality of portland clinker. The experimental results demonstrated that the emissions are under the National Regulation Limit Values. The clinker quality isn't affect by tires waste incineration. As conclusion of experimental study: the co-incineration of tires wastes in cement plants has the several benefits: save energy and raw materials, reduced CO₂ emission, saving lands by reduced waste disposal, etc. This work was supported by a publications grant of the TUIASI, project number GI/P14/2021.

17.05-17.10

Fanache (Vasiliu)Mihaela¹, Lazar Liliana¹, Favier Lidia², Harja Maria¹ (¹Gheorghe Asachi Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection, Iasi, Romania, ²Univ. Rennes, Ecole Nationale Supérieure de Chimie de Rennes, France)

USING OF WASTE GLASS AS FIBER OR AGGREGATES IN COMPOSITE MATERIALS

UTILIZAREA DEȘEURILOR DE STICLĂ CA FIBRE SAU AGREGATE ÎN MATERIALE COMPOZITE

Capitalization of solid waste in building materials has gained great interest in the recent years. An increase in the interest for glass waste has been noted due to the large amounts of glass resulted from windows, bottles, containers, industrial producers, etc. The waste resulted from glass windows could be capitalized in the glass industry, mortar, concrete and cement production, etc. and, as such, significantly decreasing landfill disposal, solve environmental pollution and save raw materials. On the other hand waste glass fiber

can be used as fiber for obtaining of new composite materials. The capitalization of waste glass in obtaining of new composite materials has been more studied in the last years. The glass waste aggregate improved the properties of the cement composite, while fibers improved strengths properties. The bond strength between the glass and the cement paste can be modified with direct influence over composite properties. It is important to find the link between composite properties and waste characteristics and quantity. In this study, the effect over the physical and mechanical properties was investigated. The densities and mechanical properties were analyzed to determine the influence of waste glass (WG) content. This work was supported by a publications grant of the TUIASI, project number GI/P14/2021.

FRIDAY, OCTOBER 22nd, 2021

ENGINEERING AND ENVIRONMENTAL PROTECTION

10.00-12.00

Project workshop: EVALUATION OF SUSTAINABILITY OF ECO-FRIENDLY PROCESSES USED IN WASTEWATER TREATMENT BASED ON AN INTEGRATED ENVIRONMENTAL AND ECONOMIC ASSESSMENT APPROACH (SusTrEE)

12.00-14.00

Project workshop: TAILOR-MADE HUMAN HEALTH RISK ASSESSMENT FRAMEWORK FOR EVALUATING THE TOXICITY CAUSED BY HEAVY METALS CONTAMINATION OF HERBAL BASED PRODUCTS USED IN PHYTOTHERAPY AND COSMETICS (RiskToxPlants)