CONGRESS PROGRAM

Iași, October 23-24, 2025

OPIS

SCIENTIFIC COMMITTEES

I. I. AGRICULTURE AND FOOD ENGINEERING

- Prof. Wolfgang FRIEDT, PhD. H.C. – Justus-Liebig-Universitat Giessen, Germany
- Prof. Matthias FRISCH, PhD – Justus-Liebig-Universität Giessen, Germany
- Prof. Gerard JITĂREANU, PhD – I.U.L.S. Iaşi, Romania
- Prof. Vasile VÎNTU, PhD – I.U.L.S. Iaşi, Romania
- Prof. Ioan ŢENU, PhD – I.U.L.S. Iaşi, Romania
- Prof. Gavril ŞTEFAN, PhD – I.U.L.S. Iaşi, Romania
- Prof. Daniel BUCUR, PhD – I.U.L.S. Iaşi, Romania
- Prof. Teodor ROBU, PhD – I.U.L.S. Iaşi, Romania
- Prof. Costel SAMUIL, PhD – I.U.L.S. Iaşi, Romania
- Prof. Eugen ULEA, PhD – I.U.L.S. Iaşi, Romania
- Prof. Roxana VIDICAN, PhD – U.A.S.V.M. Cluj Napoca, Romania
- Prof. Teodor RUSU, PhD – U.A.S.V.M. Cluj Napoca, Romania
- Prof. Ioan PĂCURAR, PhD – U.A.S.V.M. Cluj Napoca, Romania
- Prof. Florin IMBREA, PhD – U.L.S. Timişoara, Romania
- Prof. Simion ALDA, PhD – U.L.S. Timişoara, Romania
- Prof. Dan MANEA, PhD – U.L.S. Timişoara, Romania
- Prof. Gheorghe Valentin ROMAN, PhD – U.A.S.V.M. Bucureşti, Romania
- Prof. Viorel IOAN, PhD – U.A.S.V.M. Bucureşti, Romania
- Prof. Jan MOUDRY Jr., PhD – University of South Bohemia in České Budějovice, Faculty of Agriculture, Czech Republic
- Prof. Petr KONVALINA, PhD – University of South Bohemia in České Budějovice, Faculty of Agriculture, Czech Republic
- Assoc. Prof. Sergiu POPA, PhD – Tehnical University of Moldova, Republic of Moldova
- Assoc. Prof. Mihail RURAC, PhD – Technical University of Moldova, Republic of Moldova
- Prof. Carmen del CAMPILLO GARCIA, PhD – University of Cordoba, Campus of Rabanales, Spain

II. THE ART OF NATURE – Fundamental research in Horticulture, Landscaping, Environmental Engineering and Agricultural Biotechnologies

- Acad. Prof. Valeriu V. COTEA, PhD – I.U.L.S., Romania
- Acad. Prof. Doru PAMFIL, PhD – U.A.S.V.M. Cluj-Napoca, Romania
- Prof. Valerian BALAN, PhD – U.A.S.M. Chişinău, Republic of Moldova
- Prof. Mónica Tereza BOŞCAIU NEAGU, PhD – Universidad Politècnica de València, Spain
- Prof. Carlos CARBONELL CARRERA, PhD – Universidad de La Laguna, Spain
- Prof. Gianluca CARUSO, PhD – University of Neaples Federico II, Italy
- Prof. Monika CHRISTMANN, PhD – Forschungsanstalt Geisenheim University, Germany

- Prof. Zeynel DALKILIČ, PhD – Adnan Menderes University, Turkey
- Prof. Carmelo DAZZI, PhD – Università di Palermo, Italy
- Prof. Lucia DRAGHIA, PhD – I.U.L.S., Romania
- Prof. Gheorghe GLĂMAN, PhD – ASAS Bucureşti, Romania
- PhD, Prof. Gonca GÜNVER DALKILIČ, PhD – Adnan Menderes University, Turkey
- Prof. Neculai MUNTEANU, PhD – I.U.L.S., Iaşi, Romania
- Prof. Vicente Sotés Ruiz, PhD – Universidad Politécnica de Madrid, ETSIA, Spain
- Assoc. Prof. Lidia FAVIER, PhD – Ecole Nationale Supérieure de Chimie de Rennes, France
- Senior researcher Arch. Mariana ŞLAPAC, PhD – Institute of Cultural Heritage, Chisinau, Republic of Moldova
- Prof. Oner CETIN, PhD – Dicle University, Turkey
- Prof. Silvana NICOLA, PhD – University of Torino, Italy

III. TRENDS AND CHALLENGES IN FOOD, ANIMAL SCIENCES AND SUSTAINABLE DEVELOPMENT

- Prof. Ligita BALEZENTIENE, PhD - University of Lithuania, Lithuania
- Prof. Walter BAUMGARTNER, PhD - University of Veterinary Medicine Vienna, Austria
- Prof. Diego BEGALLI, PhD - University of Verona, Italy
- Prof. Paul Corneliu BOIȘTEANU, PhD – I.U.L.S. Iasi, Romania
- Prof. Larisa CAISÎN, PhD - Technical University of Moldova, Chisinau, Republic of Moldova
- Nour Edine CHIHIB, PhD – University of Lille, France
- Assoc. Prof. Aurelia COROIAN, PhD – U.A.S.V.M. Cluj Napoca, Romania
- Assoc. Prof. Cristian Ovidiu COROIAN, PhD – U.A.S.V.M. Cluj Napoca, Romania
- Prof. Ştefil CREANGĂ, PhD - I.U.L.S. Iasi, Romania
- Prof. Szabo CSABA, PhD – University of Kaposvár, Hungary
- Prof. Dan DEZMIREAN, PhD – U.A.S.V.M. Cluj Napoca, Romania
- Assoc. Prof. Cristi DIMA, PhD – "Dunărea de Jos" University of Galaţi, Romania
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- Prof. Maria del Pilar, HERNANDEZ PEREZ, PhD – Politechnical University of Valecia, Spain
- Prof. Tiberiu IANCU, PhD - U.L.S. Timişoara, Romania
- Assoc. Prof. Mihaela IVANCIA, PhD - I.U.L.S. Iasi, Romania
- Prof. Mohamed A. KENAWI, PhD – Minia University, Egypt
- Assoc. Prof. Roxana LAZĂR, PhD - I.U.L.S. Iasi, Romania
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- Prof. Vasile MACIUC, PhD - I.U.L.S. Iasi, Romania
- Prof. Monica MARIN, PhD – U.A.S.V.M. Bucureşti, Romania
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- Lecturer Gherasim NACU, PhD - I.U.L.S. Iasi, Romania
- Research Director Yves NYS, PhD – Institut National de Recherche pour Agriculture et Environement, Tours, France
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- Prof. Petronella van der PASCH, PhD - Van Hall Larenstein University, The Netherlands
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- Prof. Ioan Mircea POP, PhD - I.U.L.S. Iasi, Romania
- Prof. Răzvan-Mihail RADU-RUSU, PhD – I.U.L.S. Iasi, Romania
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- Prof. Mark RUSSELL, PhD - Purdue University, Indiana-USA
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- Prof. Elena SCRIPNIC, PhD - Szent István University, Hungary
- Prof. Silvius STANCIU, PhD - "Dunărea de Jos" University of Galați, Romania
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- Prof. Lavinia ȘTEF, PhD - U.L.S. Timişoara, Romania
- Assoc. Prof. Ilknur UÇAK, PhD - Nigde Omer Halisdemir University, Turkyie
- Prof. Marius Giorgi USTUROI, PhD – I.U.L.S., Iași, Romania
- Prof. Ilie VAN, PhD – A.S.A.S., U.A.S.V.M. Bucureşti, Romania
- Prof. Peter VOS, PhD - Utrecht University, Netherlands

IV. VETERINARY MEDICINE

- Prof. Liviu MIRON, PhD – I.U.L.S, Romania
- Prof. Dumitru MILITARU, PhD - vice president ASAS, Romania
- Prof. Mihai MAREȘ, PhD – I.U.L.S, Romania
- Prof. Sorin-Aurelian PAȘCA, PhD – I.U.L.S, Romania
- Assoc. Prof. Dragoș Constantin ANIȚĂ, PhD - I.U.L.S, Romania
- Prof. Iuliana IONAȘCU, PhD – U.A.S.V.M. Bucureşti, Romania
- Prof. Nicodim FIȚ, PhD - U.A.S.V.M. Cluj Napoca, Romania
- Prof. Sorin MORARIU, PhD – U.L.S. Timișoara, Romania
- Prof. Dorina CARTER, PhD – University of Liverpool, England
- Prof. Sanda ANDREI, PhD – U.A.S.V.M. Cluj Napoca, Romania
- Prof. Romeo-Teodor CRISTINA, PhD – U.L.S. Timișoara, Romania
- Prof. Gheorghe SAVUȚA, PhD – I.U.L.S, Romania
- Prof. Gheorghe SOLCAN, PhD – I.U.L.S, Romania
- Prof. Vasile VULPE, PhD – I.U.L.S, Romania
- Prof. Valentin NĂSTASĂ, PhD – I.U.L.S, Romania
- Assoc. Prof. Adriana Elena ANIȚĂ, PhD – I.U.L.S, Romania

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- Prof. Vasile VÎNTU, PhD - I.U.L.S. Senate President
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- Prof. Costel SAMUIL, PhD - I.U.L.S. Vice-rector responsible with the didactic activity
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- Assoc. Prof. Lucia Cintia COLIBABA, PhD - I.U.L.S. Vice-dean of the Faculty of Horticulture
- Lecturer Gabriel TELIBAN, PhD - I.U.L.S. Vice-dean of the Faculty of Horticulture
- Prof. Daniel SIMEANU, PhD - I.U.L.S. Dean of Faculty of Food and Animal Sciences
- Prof. Răzvan Mihail RADU-RUSU, PhD - I.U.L.S. Vice-dean of the Faculty of Food and Animal Sciences
- Assoc. Prof. Mihaela IVANCIA, PhD - I.U.L.S. Vice-dean of the Faculty of Food and Animal Sciences
- Prof. Mihai MAREŞ, PhD - I.U.L.S. Dean of the Faculty of Veterinary Medicine
- Prof. Sorin Aurelian PAŞCA, PhD - I.U.L.S. Vice-dean of the Faculty of Veterinary Medicine
- Assoc. Prof. Dragoş Constantin ANIŢĂ, PhD - I.U.L.S. Vice-dean of the Faculty of Veterinary Medicine
- Lecturer Luminița AILINCAI, PhD - I.U.L.S. Vice-dean of the Faculty of Veterinary Medicine

I. AGRICULTURE AND FOOD ENGINEERING

- Prof. Florin-Daniel LIPŞA, PhD – Dean, Faculty of Agriculture, I.U.L.S. Romania
- Prof. Petru-Marian CÂRLESCU, PhD - Vice-dean, Faculty of Agriculture, I.U.L.S. Romania

- Assoc. Prof. Iulian GABUR, PhD - Vice-dean, Faculty of Agriculture, I.U.L.S. Romania
- Assoc. Prof. Otilia MURARIU, PhD - Vice-dean, Faculty of Agriculture, I.U.L.S. Romania
- Prof. Daniel BUCUR, PhD - Director of Department, Faculty of Agriculture, I.U.L.S. Romania
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- Assoc. Prof. Ioan PUIU, PhD - Director of Department, Faculty of Agriculture, I.U.L.S. Romania
- Assoc. Prof. Marius CIOBANU, PhD - Director of Department, Faculty of Agriculture, I.U.L.S. Romania

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- Lecturer Gabriel TELIBAN, PhD – Vice dean, Faculty of Horticulture, I.U.L.S., Romania
- Prof. Lucia Carmen TRINCĂ, PhD - Faculty of Horticulture, I.U.L.S., Romania
- Prof. Vasile STOLERU, PhD - Faculty of Horticulture, I.U.L.S., Romania
- Prof. Mihai TĂLMACIU, PhD - Director of Department, Faculty of Horticulture, I.U.L.S., Romania
- Assoc. Prof. Ciprian CHIRUŢĂ, PhD - Director of Department, Faculty of Horticulture, I.U.L.S., Romania
- Lecturer Roberto Renato BERNARDIS, PhD - Faculty of Horticulture, I.U.L.S., Romania

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- Prof. Constantin PASCAL, PhD - Faculty of Food and Animal Sciences, I.U.L.S., Romania
- Prof. Benone PĂSĂRIN, PhD - Faculty of Food and Animal Sciences, I.U.L.S., Romania

- Lecturer Bogdan Vlad AVARVAREI, PhD - Faculty of Food and Animal Sciences, I.U.L.S., Romania
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- Assist. Prof. Claudia PÂNZARU, PhD - Faculty of Food and Animal Sciences, I.U.L.S., Romania
- Assist. Prof. Alexandra Mădălina DAVIDESCU, PhD - Faculty of Food and Animal Sciences, I.U.L.S., Romania
- Assist. Prof. Dragoș-Mihai LĂPUȘNEANU, PhD - Faculty of Food and Animal Sciences, I.U.L.S., Romania
- Assist. Prof. Mădălina MATEI, PhD - Faculty of Food and Animal Sciences, I.U.L.S., Romania

IV. VETERINARY MEDICINE

- Prof. Mihai MAREŞ, PhD – Dean, Faculty of Veterinary Medicine, I.U.L.S, Romania
- Prof. Sorin Aurelian PAŞCA, PhD - Vice-dean, Faculty of Veterinary Medicine, I.U.L.S, Romania
- Assoc. Prof. Dragoş Constantin ANIŢĂ, PhD - Vice-dean, Faculty of Veterinary Medicine, I.U.L.S, Romania
- Lecturer Luminiţa AILINCAI, PhD - Vice-dean, Faculty of Veterinary Medicine, I.U.L.S, Romania
- Prof. Vasile VULPE, PhD - Director of Department, Faculty of Veterinary Medicine, I.U.L.S, Romania
- Assoc. Prof. Geta PAVEL, PhD - Director of Department, Faculty of Veterinary Medicine, I.U.L.S, Romania
- Assoc. Prof. Viorel FLORIŞTEAN, PhD - Director of Department, Faculty of Veterinary Medicine, I.U.L.S, Romania
- Assoc. Prof. Mariana GRECU, PhD - Faculty of Veterinary Medicine, I.U.L.S, Romania

EDITORIAL COMMITTEE

The editorial committee is provided by: the Faculty of Agriculture, the Faculty of Horticulture, the Faculty of Food and Animal Sciences and the Faculty of Veterinary Medicine.

The scientific papers selected by the scientific committee and edited, preferably, in an international language, will be published, according to the domain they cover, in the following journals, indexed BDI (CAB International, Copernicus International, Genamics Journal Seek, SCIRIUS, DOAJ, AGRIS):

- Journal of Applied Life Sciences and Environment by "Ion Ionescu de la Brad" Iasi Life Sciences (ISSN 2784 – 0379);

-„Lucrări ştiinţifice. Seria Agronomie" - Scientific Papers. Agronomy Series (ISSN 1454-7414);

-„Lucrări ştiinţifice. Seria Horticultură" - Scientific Papers. Horticulture Series (ISSN 1454-7376);

-„Animal & Food Sciences Journal Iasi" - (ISSN 2821-6644);

-„Lucrări ştiinţifice. Seria Medicină Veterinară" – Scientific Papers. Veterinary Medicine Series (ISSN 1454-7406).

CONGRESS SCHEDULE

THURSDAY, OCTOBER 23, 2025

09:30 – 10:00 **Registration of the participants**

10:00 – 10:30 **Opening ceremony**
Rector's message

Plenary session:
Perspectives for The Development of Insect Resistant Oilseed Rape Cultivars
Presenter: Dr. Christian Obermeier
Justus Liebig University, Giessen Germania

Fungal Pellet-Based Cell Immobilization for Viniculture and Bioethanol Production
Presenter: Prof. dr. Jaime Moreno-García
Co-authors: Teresa García-Martínez, Juan Moreno, Juan Carlos Mauricio
Department of Agricultural Chemistry, Edaphology and Microbiology, University of Córdoba, Spain

Animal Leishmaniosis: It Is Time for One Health Approach
Presenter: Prof. dr. Gaetano Oliva, PhD
Full Professor of Veterinary Internal Medicine, Department of Veterinary Medicine and Animal Production, President of the School of Agriculture and Veterinary Medicine, University of Naples Federico II, Italy

Thinking "outside the box" the task in linking climate change to microbial antibiotic resistance and animal health
Presenter: Prof. dr. Nicolae Corcionivoschi, DrHC, FHEA (on-line)
Agri-Food and Biosciences Institute, Belfast, United Kingdom & USV King Mihai I Timisoara, Romania

12:00 – 13:45 Brunch – University Cafeteria, Târgușor Copou

14:00 - 18:30 Presentation of the scientific papers by sections within each Faculty

20:00 – 23:30 Congress Gala Dinner – Traian Hotel Restaurant

FRIDAY, OCTOBER 24th, 2025

08:00 – 18:50 Workshops within each faculty
Poster presentations
Presentation of the scientific papers

FACULTY OF AGRICULTURE

AGRICULTURE AND FOOD ENGINEERING

THURSDAY, OCTOBER 23th, 2025

FIRST SECTION
SOIL, WATER AND AGRICULTURE TECHNOLOGIES

➔ 5th Lecture room (A5), first floor

Secretariat: Lecturer Andrei Mihai GAFENCU, PhD
Lecturer Cristian HUŢANU, PhD

PLENARY SESSION –

14:00– 18:00

Chairpersons: Prof. Daniel BUCUR, PhD
Prof. Dănuț SIMIONIUC, PhD

14:00-14:15

INTEGRATING MULTI-OMICS APPROACHES TO ELUCIDATE THE *BRASSICA NAPUS* REGULATORY NETWORK

Silvia Zanini, Kevin Rockenbach, Agnieszka Golicz
Department of Agrobioinformatics, Justus Liebig University, Giessen, Germany

Most of the natural genetic variation in rapeseed (*Brassica napus*) occurs in non-protein coding sequences. Genome-wide association studies (GWAS) and expression quantitative trait locus (eQTL) studies in both models and crop species, including B. napus, have demonstrated that these non-coding variants can influence gene expression and/or traits relevant to agriculture. Our goal was to create a comprehensive map of its regulatory landscape to highlight the agronomical importance of non-protein coding/regulatory regions. We examined chromatin accessibility and DNA methylation, which are known indicators of functional genomic regions (both coding and non-coding), in five different plant tissues: leaves, roots, seedlings, immature flower buds, and immature siliques. We identified several megabases of regulatory regions active across the sampled tissues, predicted to regulate core biological processes such as reproductive tissue identity and resistance to abiotic/biotic stresses. We further investigated 57 elite inbred lines to assess the presence and potential effects of natural variation in newly identified super-enhancer elements. We further observed a correlation between machine learning-based incorrectly predicted expression levels and the presence of super-enhancer structural variants, further validating these regions as major regulators of the associated genes. This regulatory map will expedite the identification of trait determinants and provide novel targets and strategies for precisely fine-tuning traits.

14:15-14:30

LINKING ROOT HYDRAULIC SHIFTS TO TRANSCRIPTOMIC RESPONSES UNDER DROUGHT IN FABA BEAN AND MAIZE

Kübra Arslan[1], Dagmar van Dusschoten[2], Agnieszka A. Golicz[1], Silvia F. Zanini[1]
[1]Department of Agrobioinformatics, IFZ Research Centre for Biosystems, Land Use and Nutrition, Justus Liebig University Gießen, Germany
[2]Plant Sciences (IBG-2), Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany

Drought severely constrains crop productivity by limiting water availability and impairing root function. *Vicia faba* (faba bean) is a high-yielding legume but highly drought-sensitive, in contrast to *Zea mays* (maize), a model for root-based drought adaptation. This work extends a previous physiological study showing that under moderate soil drying, root conductance in upper layers dropped by 66–72 % in both species, yet maize—unlike faba bean—compensated by increasing root conductivity in deeper, wetter layers, enhancing deep-water uptake by up to 21 % of total uptake.

We generated 48 high-quality RNA-seq libraries from upper and lower root zones, harvested on the basis of root-water-uptake and soil-water-content measurements, achieving >85% mapping rates and detecting 1,300–1,900 novel transcripts per species. Differential-expression analysis revealed strong region-specific responses, with ~ 80 % of drought-responsive genes predominantly expressed in the upper root zones. Gene-ontology enrichment showed that faba bean up-regulated stress- and hormone-signalling pathways but down-regulated ROS-detoxification and cell-wall-remodelling genes, whereas maize induced osmotic-stress related, ABA-linked, and aquaporin-mediated water-transport processes. Orthogroup-level analyses further distinguished conserved stress regulators from lineage-specific responses.

Our results highlight different hydraulic and molecular strategies between maize and faba bean that can guide efforts to improve drought adaptation across crops.

14:30-14:45

INFLUENCE OF NON-THERMAL PLASMA TREATMENTS ON MAIZE SEEDS: BENEFITS, MECHANISMS, AND CHALLENGES

Roxana Ciceoi[1], Oana Venat [1], Liliana Bădulescu[1, 2]
[1]Research Center for Studies of Food Quality and Agricultural Products, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59, Marasti Blvd, Bucharest, Romania
[2]Faculty of Horticulture, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59, Marasti Blvd, Bucharest, Romania

Non-thermal plasma treatments have emerged as a promising pre-sowing technology for maize seeds, with numerous studies reporting enhanced germination and early seedling growth. Plasma is also an emerging post-harvest treatment for disinfesting stored grains, like maize, wheat, barley, sorghum. Treated seeds often exhibit faster and more uniform germination, accompanied by improved seedling vigor and biomass accumulation. Field and greenhouse trials report not only better early growth but, in some cases, higher grain yield and improved agronomic traits. For insecticidal effects in stored grains, in experimental trials, even brief exposures can achieve high mortality: for example, a 10-second exposure to a high-frequency/vacuum plasma system caused 100% mortality of Sitophilus granarius weevil, while 20 seconds of cold plasma treatment completely killed Tribolium and Ephestia and partial mortality of Plodia interpunctella. The plasma-exposed insects showed signs of oxidative stress, elevated lipid peroxides and antioxidant enzyme activity and reduced protein content, indicating that reactive oxygen species generated by plasma likely cause lethal oxidative damage to insect tissues. These insecticidal effects can be achieved without heating the grain or damaging its quality, making cold plasma a rapid, residue-free disinfestation method for storage. This comprehensive overview highlights the multifaceted benefits of cold plasma seed treatments for

maize, while also emphasizing the engineering and mechanistic challenges that must be addressed to fully harness this technology for improved crop performance.

14:45-15:00

EFFECTS OF NON-THERMAL PLASMA TREATMENT ON WHEAT SEED GERMINATION AND EARLY GROWTH: A COMPARATIVE STUDY OF TWO REACTOR TYPES

Oana Venat[1], Roxana Ciceoi[1], Liliana Bădulescu[2]
[1]Research Center for Studies of Food Quality and Agricultural Products, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59, Marasti Blvd, Bucharest, Romania
[2]Faculty of Horticulture, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59, Marasti Blvd, Bucharest, Romania

Plasma-based technologies have emerged as environmentally friendly alternatives to conventional seed treatments, offering pathogen reduction and growth stimulation without chemical inputs. This study investigates the effects of two non-thermal plasma systems on seed germination and early seedling development in *Triticum aestivum* L. cv. Glosa. Treatments were performed using a pulsed-voltage dielectric barrier discharge reactor (PV-DBDR) and a radio-frequency plasma fluidized bed reactor (RF-PFBR) at the National Institute for Laser, Plasma & Radiation Physics, Romania. Key germination and biometric parameters were assessed under controlled conditions at the University of Agronomic Sciences and Veterinary Medicine of Bucharest. The PV-DBDR system achieved a 100% germination rate and showed the highest average number of roots (4.49), while the RF-PFBR (7 min exposure) induced the longest root and sprout lengths (167.63 mm and 36.56 mm, respectively). These results suggest that each plasma method provides distinct benefits: PV-DBDR primarily enhances germination capacity and root initiation, whereas RF-PFBR promotes early vigor and elongation. The outcomes support the potential of cold plasma as a sustainable biostimulant tool in crop management and pre-sowing treatment protocols. To ensure reproducibility, further research is planned to optimize treatment parameters and energy input levels.

15:00-15:15

NON-THERMAL PLASMA AS NOVEL AGRICULTURAL BIOTECHNOLOGY FOR STIMULATING THE PROPERTIES OF SPROUTS

Iuliana Motrescu, Constantin Lungoci, Camelia-Elena Luchian, Cristina-Mihaela Rimbu, Mihai Alexandru Ciolan, Liviu-Dan Miron, Gerard Jităreanu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

In the past decade a new interdisciplinary research field has been growing, taking advantage not only on the ability of cold plasma to perform low-temperature processing, but also on the ability of its components to inactivate microorganisms, kill pests, stimulate germination, growth, production of benefic compounds in plants, or help preserve and improve different foods in liquid or solid form. The results established cold plasma technology as a novel biotechnology in food industry and agriculture. It combines precision, safety, and sustainability, is versatile, has a non-toxic nature, and can be finely tuned to a specific application and desired outcome.

From the multitude of plasma applications, we focus on non-thermal plasma treatment of seeds used to produce sprouts, functional foods that have become very popular in the recent years. Our aim is tuning plasma parameters such as to stimulate germination and growth, and, more important, nutraceutical properties in the resulted sprouts, such as to improve their quality. Several species were studied. A dielectric barrier discharge was used as non-thermal plasma to treat the seeds in different conditions, by changing the discharge voltage and processing time, and compare the direct treatments

to those using only reactive species produced by the discharge, or intensified action of reactive species when seeds are treated placed in a closed environment simulating the in-package treatment.

Biometric analysis of the sprouts shown significantly longer shoots and roots in some treatment conditions, also correlated with the concentrations of photosynthetic pigments. As plasma acts as a eustress on the seeds, we found that some treatments stimulate the production of antioxidants in sprouts. Overall, our findings clearly indicate the potential of non-thermal plasma to be used as a novel agricultural biotechnology.

15:15-15:30

SALT ACCUMULATION IN POLYTUNNEL SOILS UNDER TOMATO CULTIVATION IRRIGATED WITH SURFACE WATER

Diana Elena Bolohan, Lucian Răus
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Tomatoes cultivated in polytunnels require frequent irrigation due to high evapotranspiration rates and intensive production. When surface water from rivers or lakes is used, its elevated mineral content can gradually lead to soil salinization and structural alterations. The accumulation of salts in the root zone negatively affects tomato growth and yield, mainly by reducing water uptake and causing nutrient imbalances. This study investigates salt accumulation in the soil over the course of one growing season in a polytunnel located in Iași County, Romania. Soil samples collected before and after the season confirmed a progressive buildup of salts, highlighting the long-term risks associated with the repeated use of mineral-rich surface water in protected tomato cultivation systems. Weekly analyses of irrigation water samples revealed carbonate concentrations ranging from 0.4 to 0.8 me/L, with maximum values of 2.85 me/L, and bicarbonate concentrations between 2.34 and 5.81 me/L. The results suggest that even within a single cultivation cycle, measurable salinization can occur, potentially predisposing soils to degradation over time.

15:30-15:45

THE USE OF FUNCTIONAL PATTERNS TO ASSESS THE NITROGEN IMPACT ON SOIL MICROBIOME

Vlad Stoian, Roxana Vidican, Bianca Pop, Alexandra Gheorghiță
University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca

Nitrogen is an essential element that is necessary for both crop growth and high yields. In the current context of agronomic practice, the need for soil protection and resource conservation has gained an increasing weight in research design, especially on soil microbiomes. The aim of this research is to analyze the short-term impact of a nitrogen gradient on soil functional microbiome. Four nitrogen doses and one control were applied on soil, and the profile of functional microbiome was analyzed after 30 days of incubation. High differences between treatments were observed within carboxylic acids and carbohydrates guilds, with a general reduction trend associated with the increase in nitrogen doses. For amino acid guild, an increase trend was observed in the presence of nitrogen, but with fluctuating values. In the case of polymers, the variation of specific microbiomes showed a specific group response to each dose of nitrogen. The basal community showed a highly divergent pattern for the entire nitrogen gradient, which indicates a different response of general community to the addition of mineral fertilizers. Overall, the sum of functional activities was similar independently of the applied treatment, which indicates the transition of functional microbiome from generalist groups to specialized ones and the maintenance of a similar activity.

COFFEE BREAK
15^{45} – 16^{00}

16:00-16:15
THE QUALITY OF GREEN MASS AND THE HAY FROM *VICIA TENUIFOLIA* IN THE REPUBLIC OF MOLDOVA

Victor Ţîţei
"Alexandru Ciubotaru" National Botanical Garden (Institute) of Moldova State University, 18 Padurii str., MD 2002, Chişinău, Republic of Moldova

The objective of this research was to evaluate the quality indices of harvested green mass and hay from local ecotype of perennial leguminous species, fine-leaf vetch *Vicia tenuifolia*, maintained in monoculture in the experimental plot of the NBGI MSU Chişinău. It was established the biochemical composition and nutritive value of dry matter of the harvested green mass was200 g/kg CP, 118 g/kg ash, 305g/kg CF, 313g/kg ADF, 488 g/kg NDF, 44 g/kg ADL, 95 g/kg TSS with 65.1% DMD, 12.79 MJ/kg DE, 10.50 MJ/kg ME, 6.52 MJ/kg NEl. The studied fine-leaf vetch hay contained was 195 g/kg CP, 121 g/kg ash, 309g/kg CF, 331 g/kg ADF, 505 g/kg NDF, 48 g/kg ADL, 78 g/kg TSS with 63.1% DMD, 12.43 MJ/kg DE, 10.21 MJ/kg ME, 6.22 MJ/kg NEl. The studied substrates for biogas production had favourable carbon to nitrogen ratio (C/N=14-18), and the estimated biomethane potential varied from 343 to 350l/kg organic dry matte The obtained results indicate the possibility of using the harvested green mass and prepared hay from local ecotype of *Vicia tenuifolia* as feed for livestock, also as substrates in biogas reactors for biomethane as renewable energy.

16:15-16:30
YIELD PERFORMANCE AND ADAPTABILITY OF SUNFLOWER HYBRIDS IN MOLDOVA

Daniela Dubit, Angela Melnic, Victor Burdujan
Technical University of Moldova

The present study summarizes the results obtained from multi-year trials on sunflower hybrids under different agro-ecological zones of the Republic of Moldova. The research was conducted during the period 2022–2024, under the conditions of the Republic of Moldova, involving 10 sunflower hybrids. On average, the seed yield of sunflower ranged from 1.96 to 2.69 t/ha, while the environmental condition index fluctuated between +0.66 t/ha (northern zone) and 0.39 t/ha (central zone). The highest yields of the hybrids were recorded in the northern zone (3.15 t/ha), with variations between 2.75 (FSL-1) and 3.44 t/ha (control – LG 5555 CLP). In the central zone these values averaged 2.10 t/ha, ranging between 1.95 (FSL-1) and 2.21 t/ha (FSS-8), whereas in the southern zone the mean yield was 2.23 t/ha, with fluctuations between 1.19 t/ha (FSL-1) and 2.43 t/ha (FSS-8). On average, across three years of research, the highest productivity was shown by the hybrids LG 5555 CLP (control) with 2.60 t/ha and FSS-8 with 2.69 t/ha. The greatest stress tolerance (Ymin – Ymax) was observed in the variants FSE-9 (–0.83 t/ha) and FSP-2 (–0.87 t/ha). A high level of genetic flexibility ((Ymin + Ymax)/2) was recorded in the hybrids LG 5555 CLP, control (2.79 t/ha), and FSS-8 (2.82 t/ha).

The selection index (Sc) of the hybrids ranged from 0.85 to 1.74, with FSC-6, FSE-9 (1.72), and FSS-8 (1.74) showing the highest selection values. The adaptability coefficient values varied between 0.79 and 1.08, with the control LG 5555 CLP (1.05) and FSS-8 (1.08) standing out with the

highest values. The linear regression coefficient (bi) of sunflower hybrid yields ranged from 0.80 to 1.49. Most of the studied sunflower hybrids exhibited high ecological plasticity (with bi > 1.0). The yield depression index for sunflower ranged between 28.4 and 56.7%, with the lowest values recorded in the hybrids FSP-2 and FSE-9, both at 28.4%. The values of phenotypic stability for yield varied from 1.40 to 2.31, with the lowest stability recorded in the hybrid FSL-1 (2.31).

16:30-16:45

THE ELEMENTS OF POTENTIAL SOIL FERTILITY RELATING TO WINTER WHEAT PRODUCTION IN THE NORTHERN AGRICULTURAL AREA OF THE REPUBLIC OF MOLDOVA

Valentina Andriucă, Daniela Dubiţ, Nicolai Cazmalî, Gheorghe Racoviţa
Technical University of Moldova

The Northern Development Region of the Republic of Moldova (NDR) includes 11 administrative districts (Briceni, Edineţ, Donduşeni, Drochia, Făleşti, Floreşti, Glodeni, Ocniţa, Rîşcani, Sângerei, Soroca), including the municipality of Bălţi. The NDR corresponds to the Northern Agricultural Zone, representing 32.9% of the total area of the Republic of Moldova. The area has significant potential in the cultivation of the main strategic and export crops of the region - wheat, corn, sunflower and others, an area characterized by highly fertile soils - chernozems, with favorable grades of soil creditworthiness.

In the context of highlighting some elements of soil fertility and indicators of agricultural crop productivity regarding ensuring food security in the Republic of Moldova under climate change conditions, representative localities of the 5 pedogeographical districts, located in the North Moldavian Plateau, the North Moldavian Plain and the Soroca-Rezina Height, were researched in 2025: pedogeographical district 1 of gray soils, luvic and leached chernozems of the forest-steppe of the Northern Plateau; ecopedological district 2 of typical and leached chernozems of the forest-steppe of the Middle Prut Hills; district 3 with typical chernozems, the steppe of the Balti Plain, including microdistricts 3a, 3b, 3c; pedogeographical district 4 with leached chernozems, typical and gray soils of the forest-steppe of the Soroca Hills; district 5 of leached and luvic chernozems with gray soils, forest-steppe of the Rezina Hills.

For assessment were selected 20 localities, where the soil cover structure, types, subtypes, textural varieties, and soil quality score were evaluated, according to soil properties with a determining role in influencing potential and actual fertility.

The elements of potential fertility with a determining role in food security are climatic conditions and soil characteristics: texture, organic matter content (humus), nutrients - NPK, which as a whole will determine the physical, hydrophysical characteristics and the conditions for plant growth and development. These characteristics have a major role in the accumulation, mobility and storage of moisture reserves, providing the plant with water and nutrients.

In food security, the soil represents currently an important link regarding the fertility and productivity of cultivated crops. Currently, these are vulnerable to climate change and the risks that accompany them, including high temperatures during critical phases of plant development, lack of moisture in the soil due to insufficient atmospheric precipitation, lack of nutritional elements for plants and others.

Soil texture is the main physical property, with a particularly important role in determining most of the other physical properties, as well as many chemical properties. As a result, texture is of particular importance in relation to the soil's productive capacity, its agronomic and ameliorative characteristics, and the technology of superior utilization of soil resources.

Agricultural practice has proven that the most favorable soils by texture are loamy and loamy-clayey soils that contain proportionally sandy and clay particles.

Winter wheat is a strategic and food security crop. In the Republic of Moldova, the areas cultivated with winter wheat have varied over the last 45 years, between 212 and 300 thousand ha annually, and the annual global harvest has varied within very wide limits from 407 to 1300 thousand tons (statistical data, 1980 - 2024). The average weighted yield per 1 ha of winter wheat in the Republic of Moldova deviates significantly in the last five years, from 1.8 t/ha (2020) to 4.18 t/ha (2023), with maximum values of about 4.69 t/ha in 2021.

Some elements of potential and actual fertility were researched for cambic (leached) chernozems with winter wheat, Northern area of the Republic of Moldova, agricultural year 2024-2025. For comparison, some representative data for the agricultural year 2023-2024 were also included.

It was highlighted that under the conditions of the soil cover with highly fertile loamy-clay and clay-loamy chernozems, with a soil creditworthiness of over 80 points, the winter wheat harvest varied in 2025 within the limits of 6-9 t/ha, with an average of approx. 6.7 t/ha (AgroPanfil, Plop village, Dondușeni district). The 2024-2025 agricultural year was more favorable for winter wheat, compared to the 2023-2024 agricultural year, in which the harvest was 3.5-7.0 t/ha, the average of 5.5 t/ha.

The same regularities were also highlighted in pedogeographical district 2, Vasileuţi village, Rîșcani district, where in 2023-2024 the harvest amounted to 3.2 t/ha, in 2024-2025 the harvest level was 4.6 t/ha. Here the average weight of 1000 seeds in 2023-2024 was approx. 34.12 g, and in 2024-2025 this index had higher values, by 20-25% (45.55 g).

In 2025, along with production, the quality of winter wheat on loamy-clay and clay-loamy leached chernozems was also researched. The comparative evaluation on several polygons highlighted varieties with high protein content (10.5%), gluten (26%), Zeleny index (56ml), compared to agrocenoses characterized by low protein indices – 8.1%, gluten – 16%, Zeleny index – 38ml.

Qualitative research on winter wheat depending on climatic conditions highlighted better quality of winter wheat in the 2024-2025 agricultural year, compared to the current year.

16:45-17:00

RESEARCH CONCERNING THE EFFECTIVENESS OF THE PHEROMONES IN MONITORING THE PEA MOTH (*CYDIA NIGRICANA* F.) IN THE SOUTH-EAST OF ROMANIA

Emil Georgescu[1], Iuliana Vasian[2], Lidia Cană[1], Ștefania Maria Tötös[2], Monica Gorgan[2]

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The pea moth (*Cydia nigricana*) is a pest of the pea in Romania that sometimes can damage this crop. This study's purpose is to evaluate the effectiveness of the pheromones produced at the "Raluca Ripan" Institute for Research in Chemistry, Cluj Napoca, Romania, in monitoring the pea moth fly in climatic conditions from southeast Romania. The first tested variant active ingredient is (E, E)-8,10-Dodecadienyl acetate in a dose of 0.1 mg/bait, while the second variant is a mixture of two active ingredients, (E, E)-8,10-Dodecadienyl acetate in an amount of 0.1 mg/bait+(E)-10-Dodecenyl acetate in a dose of 0.9 mg/bait. The experience was carried out between 2019 and 2021 with a pea crop from the experimental field located at the National Agricultural Research and Development Institute, Fundulea, Călărași County, Romania. In 2019 and 2020, the mixture of the two active ingredients was highly effective in capturing the adults of the pea weevils, compared with a single active ingredient. In 2021, the differences between the two variants were lower. The maximum number of captures was recorded on 9 June 2020 at a variant with two active ingredients

(60.33 moths/trap). In all years from this study, the first pea moth captures appeared earlier than was mentioned in the Romanian literature.

17:00-17:15

ALTERNATIVE TECHNIQUES IN THE RACE TO MAINTAIN THE SPECIFICITY OF WINE ECOSYSTEMS UNDER CURRENT CLIMATIC CONDITIONS

Gabriel Tabaranu[1], Mihai Tudor[1], Aurel Ciubucâ[1] , Viorica Enache[1], Ionela-Daniela Ferțu[2], Alexandre Moreau[3]

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This study investigates the benefits of using eco-fertilizers and cover crops in grapevine plantations with an impact on vegetative development and phenophases. Global warming phenomena affect all ecosystems, modifying their specificity beyond their intrinsic adaptive capacity. Due to extreme drought, the Balkan region is facing an unprecedented decrease in water reserves, with negative effects on the quality of life. Implementation of innovative environmentally friendly techniques becomes the only solution that ensures sustainability. The results obtained identify some changes in the adaptability of grapevine plantations to new climatic conditions.

17:15-17:30

EFFECT OF THE BIOSTIMULANT AMINOTOP N ON MITIGATING HERBICIDE-INDUCED STRESS AND IMPROVING YIELD PERFORMANCE IN WHITE LUPIN (*Lupinus albus* L.)

Florin Velică, Ioan Puiu, Lucian Constantin Haraga, Dănuț-Petru Simioniuc, Constantin Lungoci, Carmen Simona Ghițău, Teodor Robu

"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

White lupin (Lupinus albus L.) is a valuable crop for sustainable farming, yet herbicide use often reduces growth and yield. This study evaluated the potential of the biostimulant Aminotop N to alleviate the negative effects of Challenge 600 SC (600 g/l aclonifen) pre-emergence) and Fusilade Forte (150 g/l fluazifop-P-butyl), 1 L/ha (post-emergence) herbicides. A 2×2 factorial experiment with four treatments (mechanical weed control, mechanical weed control + biostimulant, herbicides, herbicides + biostimulant) and three replications was conducted on the variety Măriuca at the Research and Student Training Station Ezareni of USV Iași, Romania. Seven morphological and yield parameters were assessed, including plant height, pod traits, seed weight, and yield. Results showed that herbicides induced phytotoxicity, significantly reducing yield and morphological performance, while Aminotop N reduced phytotoxic effects. In the herbicides + biostimulant treatment, yield approached that of the mechanical control. These findings suggest that Aminotop N enhances stress tolerance and yield stability in white lupin, supporting its use as a sustainable tool in crop management under herbicide application.

17:30-17:45

ORGANIC AGRICULTURE IN ROMANIA: STATUS AND PERSPECTIVES

Cecilia Oana Tugulia[1], Elena Leonte[1]
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Romania's organic agriculture expanded steadily between 2021 and 2024. According to MADR (2023), the Romanian Rural Network (2024), and international reports, organic farmland reached 644,520 ha in 2022, ~693,000 ha in 2023, and continued to grow modestly in 2024, approaching 710,000 ha (~4.6% of UAA). Certified operators increased to nearly 14,000 in 2023. The production mix remains dominated by cereals, oilseeds, and pastures, while horticulture and medicinal plants hold smaller but high-value shares. The operator structure shows over 95% producers and less than 2% processors, highlighting a structural bottleneck. Romania remains a net exporter of raw organic materials with a domestic market below €100 million. At EU level, organic farmland reached 17.7 million ha in 2023, with global organic retail sales estimated at €136.4 billion. These trends illustrate Romania's opportunities and gaps compared to European and global benchmarks.

POSTER SESSION

Friday, 24.10.2025 - 10:00– 16:00

THE QUALITY INDICES OF ENERGY BIOMASS FROM SOME *BRASSICACEAE* SPECIES IN MOLDOVA

Ana Guțu, Victor Ţîţei

"Alexandru Ciubotaru" National Botanical Garden (Institute), Chişinău, 18 Padurii str. Republic of Moldova

The *Brassicaceae* family includes many economically important species used as edible crops, industrial oilseeds, spices, fodder, and vegetables. This study was aimed to determine the quality indices of energy biomass from four *Brassicaceae* species - *Brassica napus*, *Bunias orientalis*, *Isatis tinctoria*, and *Sinapis alba* - grown in the experimental plots of the "Alexandru Ciubotaru" National Botanical Garden (Institute) of Moldova State University, Chișinău. The lignocellulosic composition of the harvested biomass showed that the dry matter contained 401-424 g/kg of cellulose, 191-226 g/kg of hemicellulose, and 83-88 g/kg of acid detergent lignin. The theoretical ethanol yield from cell wall carbohydrates was estimated to range from 430 to 473 L/t. The biochemical methane potential of the substrates varied from 232 to 268 L/kg of organic dry matter, indicating their suitability as co-substrates in biogas production systems.

The physical and mechanical properties of the biomass included: ash content of 5.48–6.40%, 18.34–18.60 MJ/kg higher heating value, and 17.00–17.40 MJ/kg lower heating value. These characteristics suggest that the studied species can also serve as suitable feedstock for the production of solid densified fuels such as pellets.

EVALUATION OF THE QUALITY OF FRESH AND ENSELED MASS FROM *MALVA CRISPA* AND *ALTHEA ROSEA* AND THEIR POTENTIAL APPLICATION IN MOLDOVA

Victor Ţîţei

"Alexandru Ciubotaru" National Botanical Garden (Institute), Chişinău, 18 Padurii str. Republic of Moldova

The primary goal of this study was to evaluate the productivity and quality indices of harvested whole plants and ensiled mass of Malva crispa and Althea rosea grow in experimental plots at the National Botanical Garden (Institute) of Moldova State University, Republic of Moldova. The results showed that the dry matter of the harvested whole plants contained: 159-182 g/kg CP, 9.6-10.4 g/kg ash, 308-363 g/kg ADF, 453-540 g/kg NDF, 50-51 g/kg ADL, with nutritive and energy values 60.6-64.9 % DDM, RFV=104-133, 11.98-12.75 MJ/kg DE, 9.91-10.47 MJ/kg ME and 5.86-6.49 MJ/kg NEl. The ensiled mass from the studied species is characterized by specific smell and colour and dry matter contained 176-178 g/kg CP, 132-141g/kg ash, 269-357g/kg ADF, 440-540 g/kg NDF, 24-50 g/kg ADL, with 61.1-67.9 % DMD, RFV=105-144, 9.91-10.91 MJ/kg ME, 5.93-6.93 MJ/kg NEl. The prepared substrates from studied species for anaerobic digestion had optimal carbon/nitrogen and biochemical methane potential varied from 329 to 376 l/kg VS.

The studied *Malva crispa* and *Althea rosea* species have optimal nutrient content, and they can be used as an alternative forage source for ruminant animals, or as substrates for biomethane production.

THE QUALITY INDICES OF THE BIOMASS FROM *BROMUS INERMIS* AND *PHLEUM PRATENSE* IN THE CONDITIONS OF THE REPUBLIC OF MOLDOVA

Alexei Ababii[1], Victor Ţîţei[1], Andreea Cristina Andreoiu[2], Vasile Adrian Blaj[2], Monica Tod[2], Ana Guțu[1], Paul Marian Zevedei[2]

[1]"Alexandru Ciubotaru" National Botanical Garden (Institute) of Moldova State University, 18 Padurii street, MD 2002, Chişinău, Republic of Moldova

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The aim of this study was to evaluate the quality indices of green mass and silage prepared from smooth brome, *Bromus inermis* and timothy grass, *Phleum pretense* and cultivated in the experimental plot of the "Alexandru Ciubotaru" National Botanical Garden (Institute), Chisinau. It has been determined that the dry matter of whole plants contained 99-104% CP, 33.6-37.2% CF, 9.4-11.1 % ash, 36.9-41.7 % ADF, 62.9-73.4 % NDF, 2.3-3.6 % ADL, 6.5-13.5% TSS, 33.0-39.1 % Cel, 26.0-31.7 % HC, 58.6-60.2% DDM, 9.40-9.88 MJ/kg ME, 5.24-5.79MJ/kg NEl. The biochemical composition and nutritive value of prepared silage was: 9.9-10.9 % CP, 34.5-35.6% CF, 8.8-9.8 % ash, 35.9-40.2 % ADF, 61.5-71.0% NDF, 2.3-3.3 % ADL, 32.6-37.9 % Cel, 25.6-37.9 % HC, 57.6-60.9% DDM, 9.60-10.18/kg ME, 5.41-5.90 MJ/kg NEl. The estimated biochemical biomethane potential of substrates from smooth brome and timothy grass varied from 351 to 369 l/kg ODM.

THE QUALITY PARAMETERS OF GREEN BIOMASS FROM NEW LEGUMINOUS CROP, EASTERN GALEGA IN MOLDOVA

Ana Guțu[1], Victor Ţîţei[1]

[1]"Alexandru Ciubotaru" National Botanical Garden (Institute) of Moldova State University, 18 Padurii str., MD 2002, Chişinău, Republic of Moldova

The goal of this study was to determine the quality parameters of green biomass from new leguminous crop eastern galega, *Galega orientalis* Lam. grown under the agroecological conditions of the Republic of Moldova. The new local cultivar 'Sofia', grow in monoculture in the experimental plot of the NBGI MSU Chişinău served as subject of the research. The quality parameters of dry matter from the first cut were: 172-200 g/kg CP, 114-133 g/kg ash, 333-355 g/kg CF, 335-390 g/kg ADF, 542-636 g/kg NDF, 49-58 g/kg ADL, 297-341 g/kg Cel, 187-246 g/kg HC with 58.5-62.8% DMD, RFV= 90-108, 9.53-10.16 MJ/kg ME, 5.55-6.18 MJ/kg NEl. It was established the biochemical biomethane potential of substrates from eastern galega varied from 324 to 353 l/kg VS.

The quality indices of the green mass from new local cultivar 'Sofia' of *Galega orientalis* indicated that the harvested mass can be successfully used in farm animal rations and as a substrate for obtaining renewable energy.

THE EVALUATION OF THE QUALITY INDICES OF AGRICULTURAL RESIDUES- STRAW OF SOME *POACEAE* SPRECIES

Mihai Gadibadi[1],Victor Ţîţei[1], Ana Guțu[1], Nicolae Daraduda[2]

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[2]Technical University of Moldova, Chişinău, 56 Mirceşti str., Republic of Moldova

The objective of this research was to evaluate the quality indices of agricultural residues straws of *Avena nuda*, *Dactylis glomerata*, *Lolium perenne*, *Triticum aestivum* ssp. *spelta*, *Zea mays* saccharata collected in the experimental plot of the NBGI Chişinău. It has been found that biochemical composition of the collected dry phytomass was 47-64 g/kg CP, 38-72 g/kg ash, 382-473 g/kg CF, 407-501 g/kg ADF, 692-797 g/kg NDF, 38-64 g/kg ADL, 369-437 g/kg Cel, 254-299 g/kg HC. The forage value of studied straws was 49.9-57.2% DMD, 8.26-9.37 MJ/kg ME, 4.28-5.35 MJ/kg NEl.

The substrates from studied straws achieved biochemical biomethane potential 271-309 L/kg organic dry matter and theoretical ethanol yield averaged 476-523 L/t organic dry matter. The net calorific value of studied straws varied from 14.7 to16.4 MJ/kg.

COMPARATIVE RESEARCH ON THE PLANT SPECIES *HELIANTHUS ANNUUS* L. AND *INULA HELENIUM* L. UNDER THE IMPACT OF INVASIVE DISEASES AND ENVIRONMENTAL CONDITIONS OF THE REPUBLIC OF MOLDOVA

Natalia Cîrlig[1], Elena Iurcu-Străistar[2], Alexei Bivol[2], Victor Țîței[1]
[1]"Alexandru Ciubotaru" National Botanical Garden (Institute), Chişinău, 18 Padurii str., Republic of Moldova
[2]Institute of Zoology, MSU, Chişinău

The complex comparative research on the species *Helianthus annuus* L. and *Inula helenium* L. was conducted on the experimental plots of the Plant Resources Laboratory of the "Alexandru Ciubotaru" National Botanical Garden (Institute), under natural conditions, during the growing seasons 2023-2025, analyzing the impact of the environmental conditions on these plants. The achieved results highlighted the comparative diversity and the invasive impact of the diseases detected on plants that caused considerable damage. The susceptibility of the plants to diseases and the degree of attack were reflected by the specific symptoms caused by pathogens on both sunflower and elecampane. We estimated the diversity of diseases and invasive pathogens according to the frequency and intensity of attack indices in the dynamics of phenological stages, developing under natural environmental conditions, where sunflower plants were severely affected by the aggressive attack of pathogens such as: *Plasmopara helianthi*, *Phomopsis helianthi*, *Sclerotium bataticola*, *Sclerotinia sclerotiorum*, *Botrytis cinerea*, Septoria helianthi, *Alternaria* spp., *Puccinia helianthi* including *Orobanche* spp. In *I. helenium* plants, fewer diseases were detected, but we estimated a major impact of pathogens (*Puccinia* spp., *Sclerotinia sclerotiorum*, *Botrytis cinerea*, *Fusarium* spp., *Verticillium* spp.) that caused invasive diseases characterized by such symptoms as spots, wilting, necrosis and premature drying of leaves. These comparative studies elucidated the invasive impact characteristic of various phenological stages and environmental factors and we recommend them as predictions that can be used to prevent and remediate invasive diseases affecting the studied species.

NEMATOLOGICAL FAUNA AND ITS INVASIVE IMPACT ON SOYBEAN PLANTATIONS IN THE ENVIRONMENTAL CONDITIONS OF THE REPUBLIC OF MOLDOVA

Elena Iurcu-Străistaru, Alexei Bivol, Ștefan Rusu, Natalia Cîrlig
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An essential step in improving the productivity and quality of soybean (*Glycine max* (L.) Merr.) cultivation in the Republic of Moldova is the phytosanitary control of parasitic helminthological fauna to implement appropriate protection measures. The study was conducted across 10 localities and 22 soybean fields, as well as various other Fabaceae cultivated areas. Monitoring took place within the Parasitology and Helminthology Laboratory at the Institute of Zoology, MSU, to identify harmful nematode complexes affecting all Fabaceae crops, including soybean. Through the phytosanitary biological control of nematodes, it was observed that helminthic agents of cereal crops annually induce specific helminthiases, significantly impacting plants, especially during the early phenological stages. Taxonomic analysis of nematode biological samples revealed a higher frequency of nematodes in soybean crops during the spring of 2025, with 12-16 species identified. In contrast, nematode indices in the summer were 10-30% lower. Comparative analysis was also performed across different regions and natural ecosystems, revealing that nematode

complexes with varying trophic specializations dominate, depending on environmental factors and soil structure. The analysis of parasitic nematode populations in soybean crops identified a total of 18 species, with the most prevalent invasive species belonging to 5 families (*Pratylenchidae, Hoplolaimidae, Tylenchidae, Telotylenchidae, Neotylenchidae*) and 7 genera (*Meloidogyne, Ditylenchus, Pratylenchus, Heterodera, Tylenchus, Rotylencus, Helycotilenchus*) within the order Tylenchida. Nematode complexes with parasitic specialization were more abundant in soybean plantations, with densities and frequencies of these species reaching 30-40%, compared to free-living forms.

CAUSATIVE AGENTS OF ROOT ROT IN WINTER WHEAT

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Knowledge of the composition of fungal species that cause root rot in common wheat is of great importance for the development of correct protection measures and serves as methodological support in pathogen resistance screening systems. In our research, 14 fungal species involved in the development of the disease in 2024 under the conditions of the Republic of Moldova were recorded. An increase in the frequency of the fungi Fusarium culmorum (24%) and F. equiseti (31.8%) was reported. Cluster analysis demonstrated the important role of the variety in the frequency of fungal spread. It was found that one of the most widespread causative agents of root rot – Fusarium oxysporum can cause both inhibition and stimulation of plant growth, as well as a change in the spectrum of phenotypic classes in segregating F2 populations. The orientation of the crossing of the parents when creating F1 wheat hybrids significantly influences the reaction of plants to the pathogen, but also their variability in terms of growth and development traits.

EXPRESSION OF SOME PATHOGENESIS RELATED GENES IN SUNFLOWER (*HELIANTHUS ANNUUS*) DURING INTERACTION WITH *OROBANCHE CUMANA*

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Sunflower broomrape (*Orobanche cumana*) is a root holoparasite that significantly threatens sunflower productivity in many regions. The development of resistant cultivars remains the most effective and sustainable strategy for controlling this parasite. In this context, understanding host resistance mechanisms is essential to support breeding programs aimed at achieving durable defense. In this study, we analyzed the expression dynamics of three pathogenesis-related (PR) genes (*PR5, defensin* and *HaAC1*) in two sunflower genotypes with contrasting responses to *O. cumana*: Favorit (resistant) and Performer (susceptible). Samples were collected during both early (pre-attachment) and late (post-attachment) infection phases, covering key developmental stages. Results revealed induction of all three genes in the resistant genotype, particularly during early defense activation (e.g., *PR5* upregulation at 24 hpi) and at critical stages of parasite development (e.g., 18 and 53 dpi). *PR5* expression in Favorit peaked at 18 days post-inoculation (dpi) with a 6.9-fold increase, indicating a robust defense response. In contrast, Performer exhibited inconsistent expression patterns, including repression at critical time points. *Defensin* showed a similar trend, with significant downregulation in Performer during early infection (e.g., -8.0-fold at 12 hpi), while Favorit maintained upregulation. *HaAC1*, a marker associated with oxidative stress responses, was significantly induced only at later stages in Favorit. These findings support the hypothesis that early, coordinated, and sustained activation of defense-related PR genes plays a key role in sunflower resistance to *O. cumana*.

X-RAY DOSE EFFECTS ON SEEDS GERMINATION AND SEEDLING PERFORMANCE OF EUROPEAN BEECH

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The aim of the study was to assess germination dynamics and post-germination adaptation in two populations of European beech (*Fagus sylvatica* L.) seeds collected in autumn 2023 in the Plaiul Fagului State Nature Reserve, Republic of Moldova with contrasting initial viability levels (PF-23_{high} – 97% and PF-23_{low} – 57%) under X-ray exposure at doses ranging from 25 to 300 Gy. Germination parameters, including total germination, mean daily germination (MDG), mean germination time (MGT), and germination rate index (GRI), were recorded alongside seedling development under solarium conditions. PF-23_{high} exhibited a more enhanced response: exposure to 25–125 Gy stimulated earlier and more intense germination (MDG up to 1.55; GRI up to 2.00), with a peak germination of 77.33% at 125 Gy and a 21-day advancement relative to the control. In contrast, PF-23_{low} showed only moderate stimulation at 25 Gy (germination 65.67%, 13 days earlier than control), and was markedly more sensitive to doses ≥100 Gy, with reduced germination and delayed dynamics (MGT up to 122 days; MDG and GRI consistently lower across treatments). At high doses (200–300 Gy) both populations demonstrated a pronounced decline in germination parameters. Seedling survival under solarium conditions revealed a uniformly negative impact of irradiation: both PF-23_{low} and PF-23_{high} showed rapid post-germination mortality, particularly between weeks 6 and 10 at doses ≥50 Gy. Despite the initially higher physiological resilience of PF-23_{high}, neither population exhibited stable adaptation under prolonged post-irradiation stress. These findings may suggest a high level of radiosensitivity in European beech during early ontogenetic development, regardless of initial seed viability.

ORGANIZATION OF THE BREEDING PROCESS AS A MEANS OF INCREASING THE EFFICIENCY OF OBTAINING HETEROSIS F_1 TOMATO HYBRIDS

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The article presents the results of a comprehensive approach to research using mutant tomato genotypes as source material and combining classical breeding methods with gametic technologies. It provides a description of F_1 tomato hybrids (10 combinations) obtained by crossing cultivated lines with mutant lines that carry marker genes (sp^+, $sp^{\pm}$, rin, nor, alc, u, ls, br, β, gs, Wo^m, j-2, and others) of high economic value. These are high-tech, heterotic F_1 tomato hybrids with yields ranging from 27.8 kg/m² to 36.5 kg/m² and a marketability of fruits from 89.1% to 95.6%, indeterminate (sp^+) and semi-determinate ($sp^{\pm}$) growth type, with large (120...250 g) brightly colored fruits of red, pink, and orange. The high content of dry matter (5.2…6.8%), sugar (4.2…5.5%), and vitamin C (29.0…47.4 mg/%) provides high taste qualities to the fruits. A differential reaction of F_1 tomato hybrid pollen to high and low temperatures tested in vitro has been demonstrated. The results obtained indicate the effectiveness of heterosis breeding using complementary methods with simultaneous assessment of morpho-biological, economically valuable traits, and resistance to various temperature stress factors. This has made it possible to create F_1 tomato hybrids capable of realizing their genetically determined productivity potential in climatic conditions that are far from optimal, and to recommend them for cultivation in industrial greenhouses in the Republic of Moldova.

CONTENT OF NUTRIENTS IN THE ORGANS OF VINE PLANTS DEPENDING ON THE SIMULTANEOUS APPLICATION OF BIOFERTILIZERS AND MICRO ELEMENTS

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Modern technologies for producing planting material must be supplemented with new links and new processes that will contribute to a significant improvement in the quality and quantity of planting material. This paper presents the results of a study on the effect of suspensions and metabolites of microorganisms: *Ps. aureofacens, Az. chroococcum, Ps. fluoriscens* used by application to the soil when planting vine cuttings, as well as foliar fertilization with a complex of microelements Microcom-V, on the mineral nutrition of cuttings. It was established that the application of the suspension of microorganisms *Ps. aureofacens, Az. chroococcum, Ps. fluoriscens* together with the Microcom-V microelement complex increases the availability of nutrients for plants, enhances the activity of some metabolic processes, and promotes the improvement of the quality of planting material (cuttings). When using this technology, the total potassium content in the roots of the cuttings was higher than in the control sample, by +0.8%. The same trend was observed in the nutrient content in the leaves, which was +1.2%. Positive changes were also observed in the iron content in the roots of vine cuttings, which was +2.1%. The use of microorganisms with a complex of microelements has the ability to reduce the amount of micronutrients used and reduce the chemical impact on the environment.

EVALUATION OF APPLE VARIETIES FOR INDUSTRIALIZATION IN AN INTENSIVE SYSTEM

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The purpose of this work is to identify highly productive apple varieties, adapted to the requirements of the industry, which will ensure the obtaining of high-quality fruits intended for processing. Maintaining the health of the trees and obtaining an efficient harvest are fundamental objectives of orchard maintenance. The research is carried out in the southeastern fruit-growing area of the Republic of Moldova. The apple varieties Renet Simirenco, Granny Smith, Florina, Golden Delicious, Golden Rezistent, Champion, Pinova, Mutsu, and Idared are studied, grafted on the M9 rootstock, planted in 2005 at a distance of 4×1,2 m, resulting in a density of 2083 trees/ha. Agrotechnical works (soil cultivation, irrigation, fertilization and phytosanitary protection against diseases and pests) are carried out at the optimal time. The trees are managed according to the improved natural crown system with reduced volume. The varieties analyzed were evaluated according to their specific properties, such as resistance to *Venturia inaequalis* and *Podosphaera leucotricha,* productivity and fruit quality for industrialization. All the varieties studied are considered suitable for the processing industry due to their superior agronomic and technological characteristics, such as firm pulp and pleasant taste. The varieties Renet Simirenco, Granny Smith, Florina, Pinova and Idared are particularly appreciated for their qualities in the production of juices and preserves, and the varieties Mutsu and Golden Rezistent are excellent for obtaining aromatic products and cider.

THE INFLUENCE OF PLANTING DISTANCE AND CROWN SHAPE ON THE GROWTH AND PRODUCTIVITY OF CHERRY ORCHARDS

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Cherry cropping systems are a topic of major interest in the literature and fruit growing practice. The aim of this study, conducted between 2013 and 2024, was to evaluate the impact of the variety-rootstock association, crown shape and planting distance on growth and productivity. The study included eight cherry varieties (Valerii Cikalov, Record, Ferrovia, Kordia, Regina, Skeena, Bigarreau Burlat, Lapins) grafted onto _*Cerasus mahaleb*_ *L.* and Gisela 6 rootstocks, in various combinations and at different planting distances. The productivity of the varieties on Mahaleb was evaluated over 8 years of production, and the cumulative yield was significantly higher for the Record variety. The varieties Bigarreau Burlat, Ferrovia and Lapins on Gisela 6, evaluated in the 4-7th year of vegetation, formed according to the FS (Thin spindle) system and planted at a distance of 5 x1.5 m, demonstrated superior productivity. The varieties Adriana, Ferrovia and Skeena, planted at a distance of 4x2 m, during 11 years of vegetation recorded a superior yield in the case of the FS crown shape. The FS crown shape consistently offered the highest yields compared to the "cup" and "Kym Green Bush" shapes in the varieties Samba, Early Star and Black Star on Gisela-6, planted at 4x2 m. Overall, the FS crown shape was associated with the highest yields during the analyzed fruiting period. It is worth noting that the productivity of early varieties was reduced in some years due to unfavorable weather conditions during the critical stages of flowering, fertilization and fruit setting.

THE IMPACT OF ANNUAL STEM DENSITY ON VEGETATIVE GROWTH AND FRUITING IN THE RASPBERRY VARIETY ENROSADIRA

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Field study conducted in open ground to determine how growth and fruiting vary at five levels of annual stem density and to identify the optimal density level for the raspberry variety Enrosadira. Plants were planted at a distance of 2.5 m × 0.45 m. The density of annual stems varied between 12 and 20 plants per linear meter, on a strip 0.5 meters wide, spaced approximately 20–30 cm apart. Stem density was studied per linear meter in randomized blocks with replication: V1 – 12 stems, V2 – 14 stems, V3 – 16 stems, V4 – 18 stems (control), and V5 – 20 stems. Plant height, stem thickness, yield per stem and per hectare, fruit size, sugar/acidity content, and timing of fruiting were evaluated. Yield per stem and per hectare differed significantly between densities. The highest productivity was recorded in the variant with 14 stems per linear meter, without affecting fruit quality. At densities of 12–14 stems per linear meter, a delay in fruiting by 9 days was observed compared to those with a number greater than 16 stems per linear meter. Density above this level led to a reduction in the fruiting period and a decrease in fruit quality.

AGROECOLOGICAL ELEMENTS OF CHERNOZEM IRRIGATION. A CASE STUDY OF THE CUBOLTA RIVER

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The national development strategy "Moldova 2030" includes the irrigation of agricultural land in the Republic of Moldova among the priority issues for the sustainable development of the

agricultural economic sector. The chernozem soils of the small river basins are a favorable object for irrigation, but there is a lack of good-quality irrigation water. Research on soil quality and water intended for irrigation was carried out in 2025 in the Cubolta River watershed, the upper part of the Răut basin, Bălți Plain. The research site, Chetrosu village, Drochia district, belongs to the steppe plain of the lower Cubolta basin, with an average altitude of about 160 m and gentle slopes. The research area is located in agro-climatic district 1, the summer of 2025 year·s was extremely hot and with a precipitation deficit of about 35–70% of the norm for the active vegetation period, with temperatures 1.2–2.7°C above the multiannual average. Chetrosu village has an area of approximately 5961 ha, specializing mainly in field crops, but the private vegetable-growing sector, which includes irrigation, is also developed. The ecopedological cover of the localities in the Cubolta watershed is very diverse in composition and texture, with chernozem soils characteristic of steppe and forest-steppe zones being dominant. In the research locality, highly fertile soils with high fertility scores (80–100 points) have formed, capable of producing high yields but also requiring agroecological assessment for different agricultural uses.

In Chetrosu village, the following soils are widespread:

- leached clay-loamy chernozems (fertility score: 94 points);
- typical moderately humified clay-loamy and loam-clay chernozems (100 points);
- typical moderately humified, slightly eroded clay-loamy chernozems (80 points);
- ordinary clay-loamy and loam-clay chernozems (82 points).

These soils are suitable for irrigation. In 2025, the quality of water from two sources was investigated - Cubolta River water and an artesian well (40 m depth). The analysis results showed that the water did not correspond quality standards for irrigation. While Cubolta River water had a mineralization level of about 1290 mg/dm³, the artesian well water had a higher mineralization level (1920 mg/dm³). The well water had higher contents of sodium, calcium, magnesium, bicarbonates, sulfates and hardness. The study of irrigation indices – SAR, Stebler and others – revealed unsatisfactory quality for both water samples for use in irrigation.

It was concluded that the analyzed waters do not correspond the quality requirements for irrigation according to all quality indicators. Utilization of these waters would create conditions for salinization and solonetization in some highly fertility soils. Using water would be possible after dilution of the salt, with qualitative improvement of the water.

RECOVERY OF ORGANOGENIC WASTE FROM THE WINE AND ETHYL ALCOHOL PRODUCTION INDUSTRIES UNDER THE CONDITIONS OF THE REPUBLIC OF MOLDOVA

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The purpose of the research was to assess the fertilizer potential of organogenic waste from the production of alcoholic beverages in order to utilize them as organic fertilizers and the possibility of their reintegrating into viticulture and phytotechnics. It was established that 1 ton of solid wine yeast contains a total of 48 kg of primary nutrients, 1 m3 of vinasse contains 1.8 kg, 1 m3 of cereal grains - 5.1 kg of primary elements. It was found that wine waste increased the content of humificated organic matter in the soil on average (2011-2025) by 0.24-0.36%, of mineral nitrogen - by 0.8-1.6 mg/kg, of mobile phosphorus - by 0.24-0.48 kg/100 g of soil and of exchangeable potassium - by 1.0-14.0 mg/100 g of soil. The application of wine yeast at a dose of 13 t/ha and vinasse at a dose of 300 m3/ha to grapevine cultivation, during the period 2011-2024, resulted in an average harvest of 9.8 t/ha, ensuring a specific grape yield of 7.0 kg/m3 from vinasse and 162 kg/t of wine yeast.

THE INFLUENCE OF TREATMENTS WITH VARIOUS PHYTOSANITARY PRODUCTS (FUNGICIDES) ON THE ATTACK OF SOME PHYTOPATHOGENIC FUNGI ON WHEAT HARVEST – GLOSA VARIETY - IN 2024 PEDOCLIMATIC CONDITIONS OF THE EASTERN BARAGAN

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This study aims at monitoring the dynamics of the occurrence and evolution of the attack of some pathogens to Glosa Romanian wheat variety, among which we mention: *Puccinia recondita* f. sp. *tritici* (sin. *Puccinia triticina*) which produces wheat's brown rust and *Septoria* sp. which produces wheat's brown leaf spotting (septoriosis). The influence of applying some fungicides on the harvest, as compared to the untreated control variant, has been monitored. One experiment with 7 variants (6 variants with phytosanitary treatment, plus one control variant not treated) was taken into consideration for this study, for which the following phytosanitary products were used, as follows: CYDELI TOP (125 g/l difenoconazole, 15 g/l cyflufenamid), EVALIA (250g/l azoxystrobin) and MYSTIC GOLD (250 g/l tebuconazole). The treatment variants were the following: V1 – CYDELI TOP 0.5 L/HA - treatment applied at straw's extension, V2--CYDELI TOP -0.5 L/HA - treatment applied in booting phase, V3 -EVALIA 1.0 L/HA - treatment applied at straw's extension; V4 - EVALIA 1.0 L/HA - treatment applied in booting phase, V5 - MYSTIC GOLD 1.0 L/HA - treatment applied at straw's extension, V6- MYSTIC GOLD 1.0 L/HA - treatment applied in booting phase and V7 - Control variant not treated. The experiment was placed in Latin square; the 7 variants being placed in 7 repetitions. The year 2024 was a year with a relatively wet spring and early summer for the area where the experiment was performed. The experiment was established after corn. The climatic conditions were favorable to the attacks of some wheat pathogens, especially those of *Septoria* sp. genus. The yields of the variants were as follows: V1 – 8.565 to/ha,V2 – 8.421 to/ha, V3- 8.579 to/ha, V4 – 8.351 to/ha, V5 8.584 to/ha, V6 – 8.345 to/ha and V7 (control variant not treated) – 7.587 to/ha.

THE INFLUENCE OF TREATMENTS WITH VARIOUS PHYTOSANITARY PRODUCTS (FUNGICIDES) ON THE ATTACK OF SOME PHYTOPATHOGENIC FUNGI ON BARLEY HARVEST, TEPEE VARIETY, IN 2024 PEDOCLIMATIC CONDITIONS OF THE EASTERN BARAGAN

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This study aims at monitoring the dynamics of the occurrence and evolution of the attack of some pathogens to barley, among which we mention: mildew (*Blumeria graminis* f.sp. *hordei*), leaf stripe (*Pyrenophora graminea*) and barley's rust (*Puccinia hordei*). Also, the influence of applying these fungicides on the harvest, as well as of the number of treatments/ha as compared to the untreated control variant, has been monitored. For this study, an experiment with 5 treatment variants was created (4 variants with phytosanitary treatment, plus a control variant not treated), being used the following phytosanitary products: ORTIVA TOP (200 g/l azoxystrobin+ 125 g/l difenoconazole) and MYSTIC GOLD (tebuconazole 250 g/l). The treatment variants were the following: V1- ORTIVA TOP 0.5 L/HA - treatment applied at straw's extension, V2 – ORTIVA TOP 0.5 L/HA - treatment applied at ear release phase, V3- MYSTIC GOLD 1.0 L/HA - treatment applied at straw's extension, V4 - MYSTIC GOLD 1.0 L/HA - treatment applied at ear release phase and V5 – Control variant not treated. The experiment was placed in Latin square, the 5 variants being placed in 5 repetitions. The year 2024 was a year with a relatively wet spring and early summer. The climatic conditions were favorable to the attacks of barley-specific pathogens. The experiment was not irrigated. The experiment was established after corn. Among the pathogens followed, attacks produced by fungi of *Pyrenophora* sp. *genus* were observed, fungi producing in barley diseases known as spotting and leaf

stripes. This led to obtaining a relatively different yield for the variants studied. Between the untreated control variant and some of the variants that were treated with fungicides, there were significant yield differences in the climatic conditions of 2024. The variant's yields were: V1- 7.951 to/ha, V2– 8.047 to/ha, V3-8.058 to/ha, V4–8.211 to/ha and V5–7.221 to/ha.

RESEARCH TRENDS AND DIRECTIONS ON AGRICULTURA HOLDINGS IN ROMANIA: A BOBLIOMETRIC APPROACH

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The present study aims to identify and analyze the main trends and research directions in the agricultural economics sector, with a particular focus on agricultural holdings in Romania. To achieve this objective, a research methodology based on bibliometric analysis was used, an increasingly common tool used to map the structure and evolution of scientific research in a given field. The bibliometric analysis was carried out on a sample of 176 scientific publications indexed in the Web of Science (WoS) database, selected based on the topic criterion containing the terms "agricultural holding" and "Romania". The results of the analysis highlighted a constant increase in the interest of the scientific community in Romania, but also at international level, in topics aimed at the sustainable development of agricultural holdings, especially in the context of their adaptation to the environmental, social and economic requirements imposed by European policies. A significant share of publications focuses on the analysis of the impact of the Common Agricultural Policy (CAP) on Romanian farmers, in particular on access to subsidies, economic efficiency and the process of alignment with European standards. Another topic frequently addressed in the specialized literature is the fragmentation of agricultural land, a major structural problem with historical roots, which continues to affect the competitiveness and performance of Romanian farms. Also, in recent years, there has been an increase in interest in the digitalization of agriculture, reflected in publications dealing with topics such as precision agriculture, the use of drones, IoT sensors and farm management systems based on artificial intelligence. These trends indicate a growing openness of researchers and research institutions towards innovation and technology, in response to contemporary challenges in the agricultural sector.

THE WEEDS CONTROL IN WHEAT CROP UNDER THE PEDOCLIMATIC CONDITIONS FROM NARDI FUNDULEA

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Wheat (*Triticum aestivum L.*) is an important crop affected by many weeds which, fortunately, can be effectively controlled by specific applications of herbicides. The main objective of this work was the study of the degree of selectivity and effectiveness of the application of herbicide treatments in combating weed species existing in wheat crops. This paper present the results obtained at National Agricultural Research and Development Institute Fundulea, two years 2023 and 2024, according to the herbicide treatments: Floramix (70,8 g/kg piroxsulam + 14,2 g/kg florasulam + 70,8 g/kg cloquintocet-mexil - safener) + Dasoil 26-2 N (Adjuvant); Pallas (7.5% piroxsulam + 7.5% cloquintocet-mexil safener) + Adjuvant; Omnera + Foxtrot 69 EW (135 g/l fluroxypyr + 30 g/l thifensulfuron metil + 5 g/l metsulfuron metil 69 g/l fenoxaprop-P-etil + 34,5 g/l cloquintocet mexil - safener), postemergently (BBCH -31) applied for the weeds controlling.The herbicides must be correlated with the infestation degree of weed, the spectrum and dominance of weeds, the time of application, the technical potential for efficacy and the local climatic conditions.

MPRINT CARBON: STUDY AND QUANTIFICATION OF THE MAIN AGRICULTURAL CROPS

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Agriculture is one of the essential economic sectors, but it contributes significantly to the emission of greenhouse gases (GES), which are responsible for climate change. These gases, mainly carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), are emitted at various stages of agricultural production. Determining the carbon footprint, i.e. estimating the total GES emissions, in CO_2 equivalent, associated with agricultural activities, is an important step in assessing the environmental impact and developing sustainable solutions. Agriculture generates approximately 20-25% of global GHG emissions, through activities specific to food production, land management and animal husbandry. Determining the carbon footprint in agriculture involves quantifying the GES emissions generated by each stage of the agricultural process and expressing them in CO_2 equivalents (CO_2e). This standardized equivalent allows the comparison of the impact of different GES, using carbon dioxide as a reference. This paper presents the results obtained at National Agricultural Research and Development Institute Fundulea, during 2023-2024, and considered the following crops: wheat, barley, triticale, corn, sunflower, soybean, rapeseed, alfalfa. Specific analyses to determine the amount of fixed carbon were carried out by collecting biological samples from roots, stems, leaves, inflorescences and seeds, in two distinct phases of plant evolution, namely in the vegetative phase (in early BBCH stages) and in the reproductive phase (in final BBCH stages). Comparing carbon emissions per kilogram harvested with international references highlights the efficiency of each crop. Most crops exceed the standard of 0.400 kg CO2-eq per kg harvested, which may indicate a need to optimize agricultural processes.

MULTI-ENVIRONMENT EVALUATION OF BARLEY (*HORDEUM VULGARE* L.) GENOTYPES FOR YIELD PERFORMANCE AND AGRONOMIC TRAITS ACROSS EIGHT ROMANIAN EXPERIMENTAL SITES

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Barley (*Hordeum vulgare* L.) is a crucial cereal crop for food security and agricultural sustainability. Climate variability significantly impacts crop performance, requiring a comprehensive evaluation of genotype responses to diverse environmental conditions. This study aimed to evaluate barley genotype performance across multiple Romanian environments under variable climatic conditions and identify agronomic traits associated with yield stability and adaptation.

A comprehensive field trial was conducted across eight Agricultural Research and Development Stations (ARDS) in Romania (Fundulea, Turda, Livada, Secuieni, Valul lui Traian, Teleorman, Caracal, and Brăila) during the 2023-2024 growing season. The experimental period was characterised by significant climatic variations, with temperatures averaging 3.4°C above long-term means and rainfall below multiannual averages for 6 experimental locations. Monthly average temperatures ranged from -1.8°C to 26.1°C, while rainfall varied from 0.3 to 147.2 mm, creating

diverse stress conditions for crop evaluation. Twenty-five barley genotypes (15 winter six-row barley varieties and 10 winter two-row barley varieties), including 14 commercial cultivars, 11 advanced breeding lines (of which 5 are obtained using the pedigree method and 6 using the *bulbosum* method were evaluated using a randomised complete block design with three replications per location. Six key agronomic traits were assessed: grain yield (kg/ha), thousand grain weight (g), spike density per square meter, number of grains per spike, grain weight per spike (g), and plant height (cm).Significant variations were observed among genotypes, locations, and their interactions across all measured traits. Grain yield ranged from 3518 kg/ha to 10664 kg/ha, with an overall average of 6754 kg/ha across environments. Locations with high yield performance revealed Caracal (7639 kg/ha) and Valul lui Traian (7516 kg/ha) as the most favourable environments, while at Livada (5421 kg/ha) and Turda (5908 kg/ha), the genotypes showed lower productivity, partly attributed to local climatic stress conditions. Correlation analysis revealed significant positive relationships between grain yield and thousand kernel weight ($r = 0.34$), spike density ($r = 0.28$), and grains per spike ($r = 0.42$), indicating these traits as important yield components under variable climatic conditions.

The study identified significant interactions between genotype, environment and climate, emphasising the importance of multi-location testing under diverse weather patterns. Several genotypes exhibited climate resilience, maintaining stable yields despite temperature stress and irregular rainfall patterns. Advanced breeding lines demonstrated competitive performance and superior adaptation to climatic stress compared to some commercial varieties. The climatic variability during 2023-2024 provided an excellent opportunity to assess genotype adaptability for future breeding programs.

PERSPECTIVE ON LABORATORY TESTING

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Seeds are fundamental to plant production. The seed industry and its representatives, at global, regional, and national levels, require analytical methods to meet trade requirements and manage quality-related risks. Standardized interpretation and reporting of laboratory test results are essential. Laboratory seed quality testing provides a rapid assessment of a seed lot's biological potential, specifically its cultural and utilization value. This comprehensive evaluation encompasses multiple parameters including physical purity, germination capacity, vigor assessment, and thousand seed weight determination. The aim of this paper is to describe and provide a multidisciplinary perspective on the most important seed quality indicators and the standardized tests required for commercial sowing seeds.

STUDY ON THE INFLUENCE OF INBREEDING TYPES ON THE EXPRESSION OF HETEROSIS IN SUNFLOWER (*HELIANTHUS ANNUUS* L.)

Danil-Marian Stanciu, Lizica Szylagyi, Ciontu Costică
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

The creation of stable inbred lines represents a crucial step in the genetic improvement process of sunflower, facilitating the rapid development of high-performance hybrids adapted to current technological and climatic requirements. The use of inbred lines with valuable agronomic traits plays a decisive role in the expression of heterosis, ensuring high productivity and genetic stability in hybrid crops. In this context, the rapid development of such lines is a strategic priority for plant breeders. At the Agricultural Research Company Fundulea, several inbreeding methods (self-fertilization, repeated crossings, individual selection) have been tested and applied, aiming to evaluate the efficiency of each method in generating valuable genetic lines. The present study analyzes the influence of these

methods on heterosis expression and provides recommendations for selecting the most effective breeding strategies.

SCREENING WILD SUNFLOWER SPECIES FOR RESISTANCE TO *OROBANCHE CUMANA*

Florin Gabriel Anton[1], Maria Joița-Păcureanu[1,2], Luxița Rîșnoveanu[3,4], Laura Conțescu[1], Emil Georgescu[1], Mihaela Cergan[1], Sabina Pintilia[1], Marius Bordei[1]

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In this study, wild sunflower species were evaluated for resistance to *Orobanche cumana* under artificial conditions. Broomrape seeds were collected in 2024 from seven locations in southern and southeastern Romania (Călărași 1–3, Tulcea 1–2, Constanța 1, Brăila 1), and resistance tests were performed in 2025. The annual species (*Helianthus annuus, H. argophyllus*) were the most susceptible to all broomrape populations. *Helianthus grosseserratus, H. maximiliani*, and *H. nuttallii* subsp. *rydbergii* were infested only by the highly virulent population from Tulcea 2. In contrast, the perennial species (*H. divaricatus, H. giganteus, H. mollis, H. nuttallii subsp. nuttallii, H. salicifolius, H. californicus, H. laetiflorus*) showed complete resistance to all tested populations. These results highlight the potential of perennial wild sunflowers as valuable genetic resources for breeding resistant cultivars and ensuring sustainable sunflower production.

EDAPHIC MESOFAUNA STRUCTURE AND ORIBATID MITE DIVERSITY IN TWO FOREST PROTECTED AREAS FROM NORTHEASTERN ROMANIA: ECOLOGICAL PATTERNS AND CONSERVATION RELEVANCE

Adina Călugăr, Otilia Ivan

Institute of Biological Research Iaşi, Branch of National Institute of Research & Development for Biological Sciences, Bucharest, Romania

This study was conducted within two Natura 2000 protected sites in Northeastern Romania: Mârzeşti Forest and Grasslands (ROSCI0171) and Uricani Forest (ROSCI0181), both with dominant habitat type 91I0 – Euro-Siberian steppic woods with *Quercus* spp., as defined in Annex I of Directive 92/43/EEC. The research aimed to assess the diversity of soil mesofauna, including mites from the orders Mesostigmata, Trombidiformes, and Sarcoptiformes, as well as Entognatha and other edaphic microarthropods. Oribatid mites, known for their indicator value, were identified and analyzed to species level. Findings revealed quantitative and qualitative differences in the mesofauna communities between the two forest ecosystems, shaped by local soil types, vegetation, microclimatic conditions, and anthropogenic pressures. The phaeozem at Uricani, characterized by higher humidity and organic matter input, supported greater mesofauna density and a more balanced taxonomic composition. Conversely, the cambic chernozem at Mârzești, though fertile and well-structured, showed a strong dominance of oribatids, suggesting both edaphic stability and selective conditions for more sensitive taxa. A total of 71 species, belonging to 54 genera and 37 families of the suborder Oribatida (Sarcoptiformes) were identified, including several rarely recorded species. The zoogeographic spectrum was dominated by Palaearctic and Holarctic elements, while silvicolous and forest-preferring species prevailed as ecological requirements. Structural parameters point to a favorable ecological status: high average densities, significant species richness, and well-balanced demographic composition. The high degree of similarity between communities is counterbalanced by site-specific differences in species distribution, reflecting local bioedaphic variability. This study

contributes to the broader understanding of forest soil biodiversity in Eastern Romania and supports conservation strategies within the Natura 2000 framework.

Acknowledgments: This study was carried out under the Nucleu Program within the NPRDI 2022–2027, with the support of Ministry of Education and Research, project no. PN23020402 (BIOPROTECT), Contract no. 7N/03.01.2023.

RESEARCH ON SOIL SALINITY AND HUMIDITY AND ITS CONTROL IN THE CORBU NOU AREA, BRĂILA COUNTY

Vlad Dumitru Mihăilă[1,2], Mircea Mihalache[2], Daniela Trifan[1], Victoria Amelia Anghel[3]
[1]Agricultural Research and Development Station of Brăila, Romania,
[2]University of Agriculture and Veterinary Medicine Bucharest, Romania,
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This work was established because climate change, increasingly manifested by increasing temperatures and changing precipitation patterns, can worsen erosion, by decreasing the organic matter content in the soil, salinization, loss of soil biodiversity and can accelerate aridification or desertification phenomena. Also, an important role in maintaining soil salinity is played by the relief of the area. Research will be carried out in three experimental centers within the SCDA Brăila, respectively on three different soil types from a pedogenetic point of view. This paper will focus on the soil in the Corbu Nou experimental field area, which is an alluvial soil. Pedoclimatic, hydrographic, agrochemical characterization will be carried out and in terms of soil salinization, compaction and erosion. Laboratory analyses will be carried out on the soil, at different depths, to identify the leaching of mineral elements after fertilizer application, as well as to determine how the different experimental factors influence the improvement of saline and eroded soils.

CAN REMOTE SENSING VEGETATION INDICES BE USED IN IDENTIFYING EROSION-PRONE AREAS?

Ruben Miron, Vasiliniuc Ionuț
„Alexandru Ioan Cuza" University of Iași, Faculty of Geography and Geology, Romania

In this study, six vegetation indices (NDVI, NDWI, NDII, NDMII, VHI, LST) were analyzed for the period 2014 – 2023, highlighting spatio-temporal variations in the health of vegetation, soil moisture and surface temperatures, parameters directly correlated with land susceptibility to erosion.

The methods used implies downloading Landsat 8 images covering the area of Tutova Hills, Romania. Using different scripts the indices values have been derived and further analyzed. Of the six indices, the one with the highest accuracy in detecting water stress and implicitly areas with moisture deficit was NDII. This index correlates very well with a high soil water content and the health of the vegetation, which makes it extremely accurate in estimating the risk of soil erosion.

Multiannual averages provided an overall mosaic image for the study period. The data obtained correlate with areas affected by erosion, validated by literature data. The accuracy of this dataset for general assessments is vast but limited for spatial detail. The conclusion is that such indices can be highly useful in predicting erosion-prone areas because vegetation cover plays a major role in stabilizing soil and reducing erosion risk, being frequently integrated in erosion prediction models, from estimating RUSLE C-factor to temporal analyses or machine learning programs. Still, there are limitation related to the data accuracy, but mostly to the need for an extensive field validation.

THE EFFECT OF LIQUID NITROGEN FERTILIZERS AND BIOSTIMULANTS ON THE EARLY DEVELOPMENT OF WINTER WHEAT UNDER PROTECTED CONDITIONS

Răus Lucian, Diana Bolohan, Molocea Cosmin, Mariana Volf
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The early establishment of winter wheat depends largely on nitrogen availability and the capacity of the root system to develop. A rapid and uniform emergence ensures good plant density and provides a solid basis for further growth. This study evaluated the effect of liquid nitrogen fertilizers, applied alone or in combination with starter solutions and biostimulants, on the early growth of winter wheat. The experiment was conducted in the Plant Nutrition and Soil Fertility Laboratory of USV Iași, using vegetation pots. The biological material was the winter wheat variety 'Arieșan', sown at a density of 500 viable kernels/m². Five treatments were tested: unfertilized control, UAN 150 L/ha, UAN + Starter 3 L/ha, UAN + GZ 1.0 L/ha, and UAN + GZ 1.5 L/ha. Fertilizers were applied at the end of January, and biometric determinations were carried out two weeks later. Soil analysis indicated an alkaline pH (8.38), medium nitrogen content, and high levels of phosphorus and potassium, with a silty loam texture. Results showed clear differences among treatments. The control produced abundant foliar biomass but poorly developed roots. UAN alone increased plant height and root elongation, though with reduced total biomass. UAN + Starter resulted in the lowest plant height, but roots showed better surface branching. UAN + GZ at 1.0 L/ha balanced shoot and root development, while 1.5 L/ha ensured the best root performance, with longer and more branched roots and improved lodging resistance. In conclusion, liquid nitrogen fertilizers combined with biostimulants, especially GZ at 1.5 L/ha, enhanced early establishment of winter wheat and created favorable conditions for improved crop performance under field conditions.

STATISTICAL STUDY ON THE CORRELATION BETWEEN WHEAT PRODUCTION AND PEDOCLIMATIC CONDITIONS ON SLOPING LANDS IN THE VALEA TĂRNII RIVER BASIN, IN THE AGRICULTURAL YEAR 2024–2025

Ionașcu Roxana Patricia, Daniel Bucur
"Ion Ionescu de la Brad" Iasi University of Life Sciences

This paper analyzes the relationship between wheat production and the variability of pedoclimatic conditions on sloping lands in the Valea Tărnii watershed, in the agricultural year 2024–2025. The study aims to highlight the impact of edaphic factors (soil texture and moisture, fertility and degree of erosion) and climatic factors (average temperature, precipitation regime, evapotranspiration) on agricultural yield. Climatic data were collected through meteorological stations located on the territory of the Perieni resort, and edaphic parameters were determined through laboratory analyses and field observations. Wheat yields were evaluated by standardized methods on representative experimental plots. The analysis methodology consisted of applying statistical correlation and multiple regression models, complemented by spatial and temporal variability analyses, to evaluate the interdependencies between environmental factors and the obtained production.

The results highlighted a significant positive correlation between the precipitation regime and wheat yield, especially in the critical vegetation phases (twining and grain filling). At the same time, it was found that the lands affected by moderate and severe erosion showed a high sensitivity to water deficit, which determined production decreases of up to 25% compared to slightly eroded soils.

The research results highlight the need to integrate conservative soil management and agrotechnical practices adapted to variable pedoclimatic conditions to maintain and increase productivity on sloping lands. The study contributes to strengthening the scientific basis for the adaptation of agricultural systems to climate change and to the development of sustainable strategies for rural development in the Valea Tărnii region.

CHANGES IN THE STRUCTURE OF AGRICULTURAL LAND USE CATEGORIES IN DIMĂCHENI COMMUNE, BOTOȘANI COUNTY

Saveliev Gabriel-Iustinian, Federovici Ionuț-Silviu, Bucur Daniel
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The area of agricultural land located on land with a slope greater than 5% in Botoșani County represents 285.11 thousand ha, i.e. 70% of their total. The analysis of the changes in the structure of the use categories in recent decades shows that the arable area increased by 2.8%, reaching 219.6 thousand ha. Meadows have reduced their area by more than 5000 ha, while vineyards and tree plantations have registered insignificant changes but the trend is to decrease. These changes reflect the intensification of land use for field crops, simultaneously with the reduction of livestock and the decrease in interest in measures and works for soil erosion control.

The consequence of this state of affairs is the intensification of erosion processes and the decrease in agricultural production and soil protection in the long term. The results obtained show that appropriate agricultural policies are needed to reconsider anti-erosion concerns not only due to the unfavorable evolution of agricultural exploitation but also to improve and enhance significant areas of sloping agricultural land in an advanced state of degradation.

AGRICULTURAL LANDS DEGRADATION IN BOTOȘANI COUNTY THROUGH SOIL EROSION, LANDSLIDES AND WATER EXCESS

Federovici Ionuț-Silviu, Saveliev Iustinian-Gabriel, Bucur Daniel
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

A series of natural phenomena, but especially anthropogenic intervention on some of the ecosystem components have contributed to the manifestation of processes by which soils insidiously lose their properties that make them suitable for agricultural use. Therefore, it was considered necessary to identify areas in Botoșani County with agricultural lands affected by erosion, landslides and excess humidity. Establishing the areas affected by limiting factors of fertility and the physical condition of land improvement works carried out to combat the effects of natural phenomena that negatively influence crops. These studies can provide useful information for reconsidering measures and works that can contribute to the valorization of areas with unproductive soils, increasing the productivity of lands with poorly productive soils and creating conditions for increasing the quality of life in local communities.

TRITICALE YIELD RESPONSE TO PRECEDING CROP AND VARIETY ACROSS TWO GROWING SEASONS

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To evaluate the influence of the preceding crop and genotype on grain yield in winter triticale, an experiment was conducted at ARDS Secuieni over two growing seasons (2022–2024). The study followed the randomized block design, with three replications, involving two Romanian winter triticale genotypes (Haiduc and Utrifun), grown after three preceding crops: soybean (*Glycine max* L.), maize (*Zea mays* L.), and sunflower (*Helianthus annuus* L.).

The results showed that both genotype and preceding crop significantly influenced yield. The cultivar Utrifun demonstrated better adaptability, with an average yield of 5941 kg/ha, compared to

5013 kg/ha for Haiduc. The highest yields were obtained after soybean (5929–6902 kg/ha), while the lowest yields were recorded after sunflower (4303–4554 kg/ha). The study highlights the importance of choosing the appropriate genotype and preceding crop to optimize winter triticale yield under the pedoclimatic conditions of the Secuieni area.

EFFECTS OF GROWTH REGULATORS ON CHLOROPHYLL AND PRODUCTIVITY OF SOYBEAN UNDER DROUGHT STRESS

Doru Stanciu[1,2], Andreea-Sabina Pintilie[1,2], Simona-Florina Isticioaia[2], Carmenica-Doina Jităreanu[1]

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Water stress is one of the main limiting abiotic factors in agriculture, affecting fundamental processes such as photosynthesis, transpiration, stomatal conductance, chlorophyll content, and the accumulation of osmoprotective metabolites. In addition, the adaptation of plants to water deficit depends on the root system, which determines the capacity for absorption and efficient use of limited water resources. In the case of soybeans, water deficit inhibits biological nitrogen fixation and decreases physiomorphological indicators, but additional nitrogen fertilization mitigates these effects and supports productivity.

The application of growth regulators has also proven to be an effective strategy for improving physiological processes and productivity indicators. Overall, these results emphasize that both fertilization strategies and the use of growth regulators can contribute to mitigating the effects of drought and increasing crop productivity. This paper presents the results obtained in a two-factor experiment, whose main objective was to evaluate the impact of growth regulators on chlorophyll content and soybean productivity under water stress conditions. The experiment was conducted in the experimental field of A.R.D.S. Secuieni in 2023. The studies were carried out on four soybean varieties (Eugen, Onix, Iris TD, and Ziana TD) by applying three products with specific growth regulator action, administered during the full flowering phenophase.

EFFECTS OF A SEAWEED-BASED BIOSTIMULATOR ON TOTAL CHLOROPHYL AND TOTAL SUGAR CONTENT IN BITTER CUCUMBER (*MOMORDICA CHARANTIA*)

Ștefănica Ostaci, Cristina Slabu, Alina Elena Marta, Mihaela Covașă, Carmenica Doina Jităreanu

"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The growth of the global population and the pressure on food resources require finding sustainable solutions for agriculture. Biostimulants, organic compounds with a role in stimulating the physiological and biochemical processes of plants, represent an ecological alternative for increasing productivity. In this study, the effect of the biostimulant Algevit, based on seaweed extract, on five genotypes of *Momordica charantia* was analyzed.

The experiments were carried out under controlled conditions, applying treatments with Algevit 0.5%. The determinations targeted the total chlorophyll content and the concentration of carbohydrates, essential parameters for the photosynthetic intensity and the nutritional value of the fruits. The results showed a significant increase in photosynthetic pigments in all treated genotypes, with the largest difference observed in Line 1 followed by Line 4. The sugar content also increased between 21% and 31%, with the maximum in Line 1.

Statistical analysis revealed a strong positive correlation between photosynthesis and carbohydrate accumulation.

STUDY OF THE INSTALLATION RATE OF LAWN MIXTURES

Mihaela Chirilă, Bogdan-Ioan Grigoraș, Adrian-Ilie Nazare, Costel Samuil, Vasile Vîntu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The evolution of society has led to an increase in aesthetic and functional requirements, which has transformed lawns into an essential element for enhancing everyday comfort. The considerable expansion of lawn-covered areas in recent decades reflects the reinterpretation of natural lawns in a modernized version that meets current functional and aesthetic requirements.

The purpose of this study is to monitor the establishment rate of five mixtures and two pure species for turfgrass: a_1-Speedy Green (100% *Lolium perenne*); a_2- SuperSport (50% *Lolium perenne*+50% *Poa pratensis*); a_3-RPR Sport (50% *Lolium perenne* RPR+50% *Lolium perenne*); a_4- Bar Power RPR (30% *Lolium perenne* RPR+25% *Lolium perenne*+ 30% *Festuca rubra commutata*+15% Festuca rubra); a_5- Resilient Blue Lawn (25% *Lolium perenne* + 45% *Festuca trichophylla, Festuca rubra rubra, Festuca rubra commutata* + 30% *Poa pratensis*); a_6- Resilient Blue Sport (30% *Poa pratensis* with YJWM + 46% *Lolium perenne* + 24% *Lolium perenne* RPR); a_7- Turf Clover (100% *Trifolium repens*), under the conditions of the urban area of Iași. The observations were made visually and expressed in scores, according to the NTEP (National Turfgrass Evaluation Program) rating scale. Observations were made at intervals of 20, 25, 30, and 90 days after sowing, representing the ability of species in mixtures or pure cultures to cover the entire surface in the shortest possible time. According to the observations made to monitor the rate of establishment, the best germination was recorded in variant a_7- Turf Clover (100% *Trifolium repens*), with a score of 8 at 90 days after sowing, and the slowest germination was recorded in variant a_5- Resilient Blue Lawn (25% *Lolium perenne* + 45% *Festuca trichophylla, Festuca rubra rubra, Festuca rubra commutata* + 30% *Poa pratensis*) with an average score of 2.33 at 20 days after sowing.

STUDY OF THE BEHAVIOR OF SOME SIMPLE MIXTURES OF GRASSES AND PERENNIAL LEGUMES UNDER CLIMATE CHANGE CONDITIONS

Bogdan-Ioan Grigoraș, Adrian-Ilie Nazare, Mihaela Chirilă, Vasile Vîntu, Costel Samuil
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Romania has over 4.8 million hectares of permanent grasslands. Permanent grasslands contribute little to animal feed compared to temporary grasslands because they are of poor quality and produce low yields without proper management. Sown temporary grasslands are a good alternative to degraded or deteriorating permanent grasslands, providing high-quality feed in terms of both quantity and quality. To establish the relationship between species in a given pedoclimatic area, periodic research is required to develop and standardize new mixtures of perennial grasses and legumes.

This experiment was conducted at the Ezareni farm of the University of Life Sciences from Iasi. Observations within the sown variants focused on the number of shoots per m², plant height at harvest and dry matter production per hectare. In the first year of vegetation, a single mowing was performed, and yields ranged from 2446.1 kg/ha for variant a_6 to 4653.0 kg/ha for variant a_1. The average number of shoots/m² in the first year of vegetation ranged from 632 shoots/m² in variant a_1 to 2,757 shoots/m² in the case of the mixture variant a_9. In the first year of vegetation, high yields were recorded in the variants where *Onobrychis viciifolia* Scop. accounted for more than 50% of the crop.

PHENOTYPIC EVALUATION OF SOME WHEAT GENOTYPES FROM THE SUCEAVA GENE BANK COLLECTION

Tiberiu Emilian Sârbu[1], Dănuț-Petru Simioniuc[1], Danela Murariu[2], Violeta Simioniuc[1], Iulian Gabur[1]
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Wheat (*Triticum aestivum* L.) is one of the top three most important crops worldwide due to its high carbohydrate and protein content, high nutritional values and the balance between these elements present in the kernels.

Twenty genotypes of bread wheat from the Suceava Gene Bank (SVGB) germplasm collection were analyzed for different traits between 2021 and 2023 at the IULS Ezareni Reserch Station. The study aims to highlight genotypic and phenotypic variability for different traits and to estimate the genotypic and phenotypic correlation coefficient, including grain yield, under the pedoclimatic conditions of northeastern Romania. Variability was estimated by analyzing genotypic and phenotypic variance (GCV and PCV), heritability (H^2), and genetic advance for the traits studied. Among the traits analyzed are plant height, spike density, glume color, awns, presence of hairs on glumes, and grain yield.

The results show that SVGB germplasm contains wheat genotypes with high agronomic value and high variability, which can be used as initial material for breeding programs.

BROOMRAPE (*OROBANCHE CUMANA WALLR.*) IN SUNFLOWER CROP IN DOBROUDJA REGION - ROMANIA

Minodora Filciu[1], Maria Joita-Pacureanu[2,3], Gabriel Florin Anton[3], Florin Daniel Lipșa[1], Alexandru Bran[4], Elisabeta Sava[4], Eugen Ulea[1]
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Orobanche cumana (sunflower broomrape) is an obligate parasitic plant that infects sunflower roots, causing yield losses. Dobroudja region has around 24% of the area cultivated with sunflower in Romania.

The parasite attack is frequently severe and yield losses can reach up to 50 – 90 %. In the last years, climate change has an influence on the development of this parasite, also on the host/parasite interaction. Some changes occur between parasite races, the parasite increases its attack. Our studies have demonstrated that this important parasite in sunflower has changed its behavior in different climatic conditions. The parasite is present in some cultivated areas with sunflower, in Dobroudja, where in the past it was not present. In other areas of Doubroudja region, the parasite has developed more virulent races, during the last period.

We succeeded to identify the new races present in this region, using the sunflower differentials for the parasite races.

PEAR RUST (*GYMNOSPORANGIUM SABINAE*) SPREAD AND MANIFESTATION DEPENDING ON CLIMATIC FACTORS FROM THE NE REGION OF ROMANIA

Andreea-Mihaela Florea, Andrei-Mihai Gafencu, Florin-Daniel Lipșa, Eugen Ulea
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The European Pear (Pyrus communis) is an economically significant fruit crop grown in the temperate zones of the globe. In Romania pear fruits are very popular, although orchard areas are not

very large, depending on the source (MADR, INS, research institutes, professional organizations) are cultivated around 4,000 hectars. During recent years European pear rust caused by Gymnosporangium sabinae (Dicks.) has become frequent and important in pear orchards or country house gardens from the NE region of Romania.

The aim of this study was field evaluation of the disease severity depending on agro-ecological factors from "Vasile Adamchi" Horticultural Research and Student Practice Station of Iasi University of Life Sciences (IULS), located in Iasi city, Romania. The spread of the disease was traced out on the leaves of Red Williams, Clapp's Favourite and Curé cultivars.

Even if the symptoms of the disease were rarely observed or were almost missing to some cultivars is very important to take into account the presence of this disease because in some agro-ecological factors can become a severe epidemic disease.

Beside on the evaluation of the disease severity also a morphologically description of Gymnosporagium sabinae fungus development stage cycle on two different plants of pear and juniper was accomplished in this study.

EVALUATION OF THE IMPACT OF CLIMATE VARIABILITY ON THE DYNAMICS OF INFECTIONS PRODUCED BY PHYTOPHTHORA INFESTANS IN POTATO CROP IN SUCEAVA COUNTY

Nichita Negrușeri[1,2], Ioan-Cătălin Enea[2], Andrei-Mihai Gafencu[1], Andreea-Mihaela Florea[1], Florin-Daniel Lipșa[1], Eugen Ulea[1]

[1] "Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

[2] Agricultural Research and Development Station Suceava

The study aimed to analyze the influence of climate variability on the evolution of infections caused by Phytophthora infestans (Mont.) de Bary in potato crops, under the pedoclimatic conditions of Suceava County during the 2022 agricultural year. The experiment was conducted on four potato genotypes (Darilena, Red Lady, Riviera, and Temerar) and five treatment schemes, one of which served as an untreated control. Weekly climatic monitoring included air and soil temperature, relative humidity, precipitation, cloud cover, and sunshine duration, and the results were correlated with phytopathological parameters such as incidence, intensity, degree of attack, severity, and AUDPC. Based on these data, a Disease Pressure Index (DPI) was calculated to integrate the combined effects of the main climatic factors influencing the infection potential. The DPI value from the previous week was also considered to capture the dynamics of the pathogen's incubation period. Significant correlations between DPI, relative humidity, and precipitation with disease severity and incidence confirmed the existence of a 5–7-day delay between favorable weather conditions and symptom appearance. The analysis of AUDPC values indicated a significant reduction in cumulative severity in the treated variants, particularly in the systemic treatment schemes applied at regular intervals. The results confirm the decisive role of climatic conditions in disease dynamics and support the use of composite climatic indices in early warning systems and in the scheduling of phytosanitary treatments for potato crops.

SECOND SECTION
AGRIBUSSINES AND RURAL DEVELOPMENT

➔ 3rd Lecture room (A3), second floor

Secretary: Lecturer Eduard BOGHIȚĂ, PhD
Lecturer Ștefan VIZITEU, PhD

PLENARY SESSION

14:00 – 16:00

Chairpersons: Prof. Carmen COSTULEANU, PhD
Prof. Stejărel BREZULEANU, PhD

14:00-14:15

THE PROGRAM TO ENCOURAGE ACTIVITIES IN THE MOUNTAIN AREA, SUPPORTING INVESTMENTS AIMED AT RETAINING THE POPULATION AND DEVELOPING LOCAL COMMUNITIES

Dănuț Ungureanu
Romanian Academy, Center for Mountain Economy – CEMONT, Romania

The Romanian Mountain Law (197/2018) aims to promote the sustainable and inclusive development of mountain areas. This entails initiating a process led and controlled by the local population, supported by the Romanian state, through the development of specific economic activities. These activities ensure the preservation of traditions, cultural identity, and cultural heritage, while maintaining biodiversity, protecting nature and landscapes, and enhancing the quality of life and attractiveness of mountain areas. Chapter 9 of the Mountain Law provides the implementation of a Program to encourage activities in the mountain area. Under this program, 1 billion euros are allocated over a 10-year period, starting from the law's enactment, funded by the state budget through the Ministry of Agriculture and Rural Development.

The program serves as a source of support for performance in both the agricultural and non-agricultural sectors. The funds required for the aid schemes are provided from the state budget through the budget of the Ministry of Agriculture and Rural Development (MADR). MADR will allocate budgetary credits for this purpose to the National Agency for the Mountain Area (NAMA), which acts as the program's implementing authority. The funding is categorized under chapter 83.01, "Agriculture, forestry, fisheries, and hunting," article 40.15, "Support for agricultural producers". In 2022, three investment programs were developed under state aid schemes, in compliance with European Union legislation on state aid.

The National Agency of the Mountain Area, implemented 113 projects in the mountainous region of Romania. The total value of public support for the projects was 8,800,000 euros.

The situation regarding these, categorized by investments, is as follows:

Center for the collection for forest fruits, mushrooms and/or medicinal and aromatic plants from wild and/or cultivated flora in the mountain area – 58 projects; Center for the collection and processing of forest fruits, mushrooms and/or medicinal and aromatic plants from wild and/or

cultivated flora in the mountain area – 4 projects; Milk collection center in the mountain area – 43 projects; Milk processing center in the mountain area – 1 project; Milk collection and processing center in the mountain area – 2 projects; The establishment of mountain sheep yards – 5 projects.

14:15-14:30

PROGRESS IN THE SUSTAINABLE DEVELOPMENT OF THE MOUNTAIN AREAS IN ROMANIA, IN THE LAST DECADE

Dănuț Ungureanu
Romanian Academy, Center for Mountain Economy – CEMONT, Romania

The mountainous region of Romania constitutes a territory of special national interest, with strategic, economic, social, and environmental significance. Due to factors such as altitude, climate conditions, steep slopes, geological substrate, high construction costs, living conditions, infrastructure limitations, the business environment, and access to education and medical services, this area is considered disadvantaged. The mountainous area is ecologically fragile, requiring substantial efforts.

By Law No. 139 of October 15, 2014 on some measures for the reorganization of the Ministry of Agriculture and Rural Development, as well as some structures subordinated to it, the Mountain Area Agency was established. a specialized public governamental institution for the development of the mountainous area. By Government Decision 1036 of December 21, 2018, for the organization and functioning of the National Agency of the Mountain Area by reorganizing the Mountain Area Agency, as well as for establishing some measures regarding regional centers and mountain development offices, the National Mountain Area Agency was created.

During the period 2015-2025, the (National) Agency of the Mountain Area achieved several results, including: Drafting the Mountain Law (No. 197/2018); Establishing a new delimitation of the mountain area; Drafting normative acts affecting the mountainous area; Registering of agri-food products under the „mountain product" quality scheme; Developing and implementing of Investment Programs for the Mountainous Area; Establishment of Massif Committees and the National Mountain Council; Organizing professional training courses and programs for farmers, future entrepreneurs, specialists, and other relevant categories in the mountainous area, and nationwide; Providing expertise in the development of the Strategy for the Integrated Development of the Mountain Area.

14:30-14:45

THE LIVING EPISTEME: PRELIMINARY CONCEPTUAL FRAMEWORK

Dan Bodescu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

This research responds to deep social needs of reconnecting knowledge with lived meaning, human relationship, and authentic transformation of life – both individually and collectively. Its aim was the formulation of an epistemological framework based on relation and becoming. The research methodology integrated conceptual analysis, autoethnography, validation through resonance, and dialectical confrontation, within a transdisciplinary approach. The results included: (1) the formulation of a new epistemological framework – the Living Epistema – which proposes a balance between scientific rigor and human, ethical and reflexive engagement; (2) the configuration of 8 principles of this episteme which reflect the values: dignity, contextualization of truth, relation as a way of knowing, validation through practice and transformation through learning. The originality of the approach lies in the way it interweaves traditional perspectives into a relational, contextualized and transformative vision.

14:45-15:00

A CIRCULAR ECONOMY MODEL FOR THE COMMERCE CHAINS: A MULTIPLIER EFFECTS PERSPECTIVE

Andy-Felix Jităreanu, Elena Leonte, Mioara Mihăila
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The expansion of commercial chains, vertically and horizontally, is a current reality of the socio-economic areas marked by progress. This expansion, however, is accompanied by major transition requirements from the linear economy to the circular economy, because the increasing consumption, although it has beneficial effects in monetary terms, attracts unfavorable effects for the security of resources and future generations.

This paper considers two apparently opposite directions for which we identify and analyze common directions. The aim is to highlight the functionality of an economic model based on the circular economy functionality. The presented model, built through indicators for quantifying the multiple effects of commerce, starts from the Pearce&Turner Model (1990) which substantiates the relationship between economy and environment, and the MacArthur Model (2013) oriented towards reducing the resources consumption. It is considered that participants involved in the supply chain have a fundamental role in the transition to the circular economy, being responsible for the commercial circuit of over 100 billion tons of materials annually - World Economic Forum Report, 2020. The implicit values of the model we propose are: planned value, created value and resulted value. All of these must become circular, to obtain beneficial multiplier effects. The indicators used for the model representation are from four categories: economic, environmental, social, protection of future generations. The practical references are for the commercial chains of agri-food products in Romania, starting with 2023 year. The results of the proposed model indicate that the circular economy strengthens commerce and supply chains, and forms the circularity and sustainability trends in trade.

15:00-15:15

LEARNING RESILIENCE FROM RESURRECTION PLANTS – A BOTANICAL, LITERARY AND PSYCHOLOGICAL APPROACH TO POEMS FROM AMERICAN, AUSTRALIAN AND GERMAN LITERATURE

Raluca Ștefania Pelin, Cristina Slabu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The concept of resilience is constantly making the headlines with regard to every aspect of life spanning from the environmental and economic areas to the fundamentally social and personal spheres of our existence. It becomes even more striking when it is represented by plants, the Resurrection plants, and becomes the core muse for poetry – the public artistic manifestation of the inner workings of the hearts and minds of people pondering on relationships and life issues. The present study aims at pinpointing the essential traits of these plants from the botanical perspective, reflected in several American, Australian and German poems and echoing in the much desired emotional intelligence competences that people need to acquire nowadays. The conclusion that can be drawn is that the environment plays a crucial role both in ensuring the survival conditions of plants and humans as well as in facilitating the acquisition of essential adaptive mechanisms and the mastery of resilience which culminates in the preservation of life and hope.

15:15-15:30

EXAMINING STUDENTS' MOTIVATION FOLLOWING PEDAGOGICAL MODULE: A CASE STUDY FROM IULS IASI

Alina Sîrghea, Ana-Nicoleta Grigore
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The present study aims to investigate the reasons of choosing the pedagogical courses by students enrolled at University for Life Sciences, Iasi. Existing research has highlighted the crucial role that intrinsic motivations plays in decision to pursue a teacher training program.

This study was conducted at university, focusing on a cohort of undergraduate students enrolled in second year of study following the optional pedagogical courses. Drawing upon a mixed-methods approach, we collected both quantitative and qualitative data to gain a comprehensive understanding of the phenomena. this, we conducted in-depth interviews with a representative sample of students to elicit their lived experiences, insights, and perspectives of the teaching career in shaping their academic motivation.

The findings of the study reveal that the main reason for choosing pedagogical module is represented by the future job safety, work-life balance, salary expectations, but also intrinsic and altruistic motivation.

15:30-15:45

AN INTEGRATED APPROACH TO EVALUATING THE FINANCIAL PERFORMANCE OF AGRICULTURAL ENTITIES: A COMPOSITE SCORING MODEL

Mihaela – Cătălina Froicu, Ștefana – Beatrice Păduraru, Gabriela Ignat, Carmen Luiza Costuleanu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The economic performance of agricultural entities has recently been analyzed in the context of increasing pressures caused by economic instability, climate change, and sustainability requirements promoted by the European Union, international organizations, and financial institutions. Financial assessment can no longer be limited to traditional indicators, requiring an approach that combines financial soundness with resource-use efficiency.

This paper proposes an analytical model based on the construction of a composite financial performance index. The main objective is to provide a simple yet useful tool for understanding the overall performance of agricultural enterprises.

Although numerous financial indicators are commonly used to assess agricultural performance, they are typically analyzed individually, and aggregation into a unified score is rarely applied in Romania's agricultural sector.

Indicators such as return on assets, return on equity, current ratio, debt ratio, and asset turnover were included. A sub-index of economic sustainability was calculated based on profit per hectare and income per employee. All values were normalized and combined into a general score, scaled from 0 to 100.

The model was applied to a sample of three agricultural farms, using data for the year 2024. The results were graphically represented, allowing for an intuitive interpretation of the scores. The findings confirm the relevance of a synthetic evaluation method that is easy to apply and adaptable to various agricultural contexts.

15:45-16:00

MODELS FOR ORGANIZING ORGANIC FARMS IN SUSTAINABLE AGRICULTURAL DEVELOPMENT

Monica Chihulcă, Cristian Constantin Boicu, George Ungureanu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The organizational models of organic farms play a crucial role in the transition towards sustainable agriculture, providing solutions tailored to current requirements for environmental protection, food security, and farmers' economic viability. In the context of climate change, natural resource degradation, and the increasing demand for healthy products, the analysis of functional models for organic farms has become strategically important. This paper examines different organizational forms — individual, associative, and cooperative — in relation to farm size, production type (crop and/or livestock), market access, and integration into sustainable value chains. Moreover, the benefits of implementing these models are evaluated within the framework of the Common Agricultural Policy (CAP), which supports farmers through subsidies, agri-environmental measures, and incentives for regenerative practices. The findings demonstrate that efficient organizational models can enhance economic profitability, strengthen resilience to climate risks, and foster technological innovation in agriculture. The study underlines the importance of adapting these models to local socio-economic and agroecological conditions in order to advance the sustainable development of organic farming.

COFFEE BREAK
$16^{00} – 16^{15}$

16:15-16:30

FROM CABI TO CONSENSUS, VIA CHAT MISTRAL: HOW TRADITIONAL DATABASES AND AI TOOLS SHAPE SCIENTIFIC DOCUMENTATION SKILLS

Elena Petrea
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The arrival of artificial intelligence (AI) tools within academic research has had a transformative effect on research and documentation practices. However, their relevance for undergraduate students, particularly in the development of rigorous documentation skills, remains to be clarified. This study offers a comparative analysis between generalist AI tools (such as Chat Mistral), AI tools specialised in academic research (such as Elicit) and traditional databases (such as CABI). General-purpose AI tools, although accessible and effective for synthesising information, have major limitations: lack of source validity, inadequate or fabricated references, and variability in scientific rigour. Meanwhile, specialised AI tools, designed for literature reviews and data analysis, offer greater transparency, increased academic validity, and consistency of results, although access to them may be restricted by technical or financial constraints. Traditional databases, such as CABI, remain benchmarks for reliability, but their use requires advanced research skills, which can be a barrier for undergraduate students. Recent studies (Pizarro Romero, 2024; Ferdousi, 2025; Santos Solórzano & Bonilla Cerquedo, 2025) highlight the transformative potential of AI in terms of research efficiency, while also pointing out ethical and methodological issues, such as the risks of hallucinations or ambiguities related to the attribution of content authorship. This analysis suggests that a hybrid approach, combining the use of AI tools with structured training in digital literacy, could

optimise the development of research skills. The results argue for critical evaluation frameworks to guide the tool choice, whilst ensuring alignment with academic integrity requirements.

16:30-16:45

BENEFITS AND CHALLENGES OF WOMEN'S INVOLVEMENT IN AGRITOURISM ENTREPRENEURSHIP

Radu-Adrian Moraru, Dan Bodescu, Dan Constantin Șumovschi
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Agritourism is one of the strategies available to farmers to improve their livelihoods, with women play an essential role in maintaining, developing and innovating agritourism businesses. The study aims to identify, based on a systematic analysis of academic literature, the impact of rural women's involvement in agritourism, both at the individual and rural community level. At the same time, various restrictions and challenges they face as farmers, entrepreneurs and professional women are highlighted. Agritourism entrepreneurship provides many benefits to rural women, appearing as a catalyst for their socio-cultural and economic empowerment: achieving financial independence, improving visibility and social status, new entrepreneurial opportunities and skills, personal development, etc. The findings indicate that the constraints they encounter are determined by the political-institutional and socio-cultural contexts in which operate. In addition to individual and tourism industry-related factors (which traditionally influences the business potential of all farmers), gender inequality is the most limiting factor for women's empowerment and their entrepreneurial performance. Four main factors are influencing female's empowerment: women's entrepreneurship, education, human capital and social capital. Subjected to discrimination not only from other male farmers, but also from customers and suppliers, women farmers have limited access to essential resources (capital, credit, land, technology), vocational training, education and business networks. They often deal with insufficient decision-making power and struggle to find a balance between managing agritourism operations and domestic responsibilities. Overcoming these barriers and challenges requires policies to promote gender equality, specific support programs and facilitating access to markets and technology.

16:45-17:00

KEY CHALLENGES AND TRENDS IN THE SUSTAINABLE DEVELOPMENT OF AGRITOURISM

Radu-Adrian Moraru, Alexandru-Dragoș Robu, Ștefan Viziteu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Agritourism, a niche sector that integrates agriculture with tourism activities, has become a significant part of the global economy in recent years, with its market expected to continue to expand in the coming decades. Growing urbanization and increasing tourists interest for authentic experiences and sustainable and ethical travel are making this form of tourism more and more popular. Despite its essential contribution to ensuring the sustainability and stability of rural areas and communities, the development of agritourism is linked to a series of challenges. that target economic, operational, ecological and regulatory aspects. This paper presents a review of the scientific literature on the elements that may contribute to limiting the growth potential of agritourism, while also highlighting the current trends shaping the sector. There are significant regional differences due to local economic, cultural and geographical factors. Agritourism entrepreneurs must adapt to changes in consumer preferences, use modern marketing and promotion technologies and implement practices focused on sustainability. The success and expansion of agritourism businesses are conditioned by the application

of effective marketing, reducing the effects of seasonal fluctuations in demand, overcoming infrastructure limitations, adequately managing the impact of tourists on farms and rural communities, promoting an appropriate policy in the field, etc. Knowing and understanding of interactions and constraints operating in this area helps stakeholders and policymakers to create the suitable framework for the specific needs of agritourism.

17:00-17:15

UNDERSTANDING TOURISTS MOTIVATIONSTO ENHANCE TOURISM COMPETITIVENESS

Dan Constantin Șumovschi[1], Radu-Adrian Moraru[2]

[1] Mountain Economy Center CE-MONT/National Institute for Economic Research (INCE), Romanian Academy
[2] "Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

This study investigates tourists' motivational factors as a central element in enhancing the competitiveness of Romanian tourism, examining both declared behaviors and actual consumption patterns. The research is based on a structured questionnaire administered to tourists, capturing socio-demographic profiles, types of purchased tourism packages, motivations and decision-making factors, the influence of social networks and word-of-mouth marketing, as well as satisfaction levels and loyalty intentions.

The findings reveal notable discrepancies between tourists' stated preferences and the attributes they actually value in their experiences. Perceptions of quality are shaped by tourists' cultural background and by price, while a growing trend emphasizes the visual appeal of experiences and their potential for generating social media content ("Instagrammable" experiences), reflecting behavior that diverges from declared motivations. Although characteristic of a relatively small segment, these tourists exert a disproportionate influence on market perceptions and emerging trends.

The study concludes that a nuanced understanding of tourists' motivations and actual behaviors provides a strategic tool for tailoring tourism offerings and enhancing the competitiveness of Romanian tourism, offering both theoretical insights and practical guidance for industry stakeholders.

17:15-17:30

SUSTAINABLE TOURISM THROUGH INTEGRATED LOCAL EXPERIENCES

Dan Constantin Șumovschi

[1] Mountain Economy Center CE-MONT/National Institute for Economic Research (INCE), Romanian Academy

This study explores strategies to enhance tourism sustainability by leveraging local experiences. It examines how the combination of active tourism, culinary tourism based on products from local markets with short supply chains and accommodation facilities applying sustainable practices generates notable economic, social and cultural benefits for mountain communities, while maintaining a stable ecological footprint per unit of value. The analysis relies on data from two Sustainability Innovation Projects (SIPs) developed within the ETSM 2030 framework, which enabled the design of digitized, integrated, and sustainability-focused tourism packages, placing local communities at the heart of the visitor experience. Member companies of these SIPs centralized and monitored data on tourists, local producers, accommodations, and client feedback, optimizing interactions among stakeholders and enhancing economic and environmental efficiency. Findings indicate that promoting authentic experiences, supported by digital tools and continuous evaluation

of visitor satisfaction, increases community income, strengthens social cohesion, and protects cultural heritage, while effectively utilizing natural resources and local traditions. This approach provides a replicable model of sustainable tourism capable of balancing economic development, environmental conservation, and community identity, offering an innovative framework for optimizing integrated and digitized tourism offerings.

17:30-17:45

PUBLIC POLICIES FOR GOVERNANCE OF THE FORESTRY SECTOR

Carmen Diaconu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The rule of law presupposes, above all, a state order and a legal legitimation of the order of human nature, which is imprinted with a lawful conduct by the way in which the legal consequences of his actions or inactions are exposed to the possible perpetrator.

Forests, along with gas, oil, gold, coal, appear as a wealth of Romania and unlike the natural resources that are found in the country's subsoil and which are only public property, they are the prerogative of both the public and private domain, the owners of which can be not only the Romanian state through representative state entities based on the principle of decentralization, but also individuals - natural persons or legal entities.

In order to understand the legal radiography of the current forestry code, namely Law no. 331 of 2024, a brief presentation of the legislation that preceded it, of the desired outcome and their impact is required, the law being a phenomenon as alive as the social values that it seeks to protect.

17:45-18:00

ETHICAL FOUNDATIONS IN THE DEVELOPMENT OF CONTEMPORARY MARKETING STRATEGIES

Bianca Antonela Ungureanu, Andy Felix Jităreanu, Mioara Mihăilă, Tatiana Baltag, Elena Leonte
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

This paper examines how ethics influence contemporary marketing strategies in a context characterised by the intensive use of digital data (Big Data). Modern businesses grapple with the dilemma of maximising profits while maintaining customer trust.

Key ethical risks emerge from opaque decision-making algorithms, including unauthorised access and misuse of personal data, hyper-targeting and manipulation of consumer behaviour, exploitation of vulnerable groups, economic discrimination through unfair offers, and misleading advertising.

To explore these issues in practice, the study includes a case analysis of a digital marketing campaign. Ethical compliance was assessed using a model built around five relevant criteria, revealing both notable strengths and areas for improvement.

Introducing the concept of ethical capital—regarded as a strategic asset—this paper demonstrates that embedding ethics into marketing reduces vulnerability, strengthens customer loyalty, and lays the groundwork for long-term credibility and sustainability.

POSTER SESSION

Friday, 24.10.2025 - 10:00– 16:00

ECONOMIC ANALYSIS OF ORGANIC CARROT CULTIVATION IN PROTECTED AREAS: ESTIMATES FOR 2025

Rozi Liliana Berevoianu[1], Diana Maria Ilie[1]

[1] Research Institute for Agricultural Economy and Rural Development, Bucharest, Romania

The paper aims to evaluate the economic viability of organic carrot cultivation in protected areas, based on the estimation of the revenue and expenditure budget for 2025. The methodology applied focused on the analysis of key financial indicators: production value, the structure of variable and fixed costs, taxable income and net income, profitability rate, production cost, and domestic market price. The results show that the high share of variable costs reflects the dependence of the crop on ecological inputs and labor resources, while subsidies play a decisive role in strengthening revenues and reducing economic risks. The break-even analysis confirms the capacity of this crop to generate profit and to maintain financial stability under the specific conditions of organic farming. The study demonstrates that organic carrot cultivation in greenhouses constitutes a sustainable and competitive option for Romanian farmers, with favorable prospects for integration into the certified products market. Moreover, the research highlights the contribution of this production system to enhancing resilience and supporting the long-term sustainability of organic agriculture.

TOURISM SERVICES IN THE CONTEXT OF SUSTAINABLE ECONOMY

Natalia Mocanu

Doctor of Economics, Professor, State University of Moldova, Chisinau, Republic of Moldova

Tourism services play an important role in the context of a sustainable economy, as they can contribute both to the economic prosperity of a destination and to the protection and conservation of natural and cultural resources. A responsible and sustainable approach within the tourism industry is fundamental to ensuring sustainable and equitable tourism in the long term. Sustainable tourism economy refers to the integrated and balanced approach to tourism development, which takes into account three fundamental dimensions: economic, social and ecological. The aim is to ensure that tourism development does not compromise natural and cultural resources, while contributing to improving the quality of life of local communities and generating income and jobs. The socio-economic changes of the contemporary era have created and dynamically developed tourism. In turn, this sector of the world economy stimulates the development of other branches and economic activities, such as: transport, trade, information technologies, industry, construction. Tourist services represent those activities that aim to satisfy all the needs of tourists, both during the period of travel and in connection with it. Consequently, some of the activities that are part of the tourist service aim to cover common, everyday needs (rest, food), while others present characteristics specific to tourism.

By its nature, tourist services must lead to the restoration of work capacity simultaneously with a pleasant and instructive spending of free time, and must also contribute to enriching the tourist's information, knowledge and skills, which imprints the character as an important tool in achieving a new quality of life.

SUBSIDY PRACTICE IN THE REPUBLIC OF MOLDOVA

Natalia Mocanu [1], Nadiia Davydenko[2], Nicoleta Mateoc-Sîrb[3], Tatiana Bujor[4], Dragoș Cimpoieș[5]
[1]Doctor hab., of Economics, Professor, State University of Moldova, Moldova,
[2]Doctor of Economics, Professor, State Tax University, Ukraine,
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[4]Doctor of Economics, State University of Moldova, Moldova,
[5]Doctor hab., Professor Moldova State University, Moldova

Subsidies are a complex economic and political concept, representing non-repayable financial aid granted by the state or other public authorities to specific economic sectors or activities, in exchange for compliance with certain conditions. In the work of economist Paul Bran, this support aims to support economic development, stimulate certain branches of the economy or protect vulnerable groups from negative market effects.

Typically, subsidies can take various forms: direct subsidies, in the form of cash payments or financial aid, or indirect ones, such as tax exemptions, research grants or preferential access to certain resources. According to interventionist theory, subsidies are essential to remedy market defects, especially in sensitive sectors, such as agriculture or industries that have a strategic role in the national economy. Subsidies are a necessary tool to protect and support economic sectors that are affected by unfavorable market conditions, as well as price fluctuations or climate risks - the author emphasized this. In agriculture, for example, subsidies can offset losses caused by seasonal variations or lack of adequate infrastructure, allowing producers to continue operating.

According to the Keynesian view, subsidies are a temporary tool to stimulate demand and counteract the negative impact of an economic recession. John Maynard Keynes proposed that in times of crisis, the government should act through fiscal policies, including subsidies, to boost production and create jobs. For example, the agricultural sector could be subsidized to maintain production, which would stabilize prices and protect farmers from economic shocks. Such aid, applied over several stages, has a multiplier effect that generates demand for related goods and services and, at the same time, supports the overall economic recovery.

STRATEGIC AND FINANCIAL ANALYSIS OF G.C.C.-SECURITATE S.R.L.: TECHNOLOGICAL MODERNIZATION AND DEVELOPMENT PROSPECTS

Tatiana Bujor[1], Boris Coreţchi[2], Natalia Mocanu[3]
[1]PhD., Associate professor, State University of Moldova,
[2]PhD. Associate professor ,State University of Moldova,
[3]Doctor of Economics, Professor, State University of Moldova

This study examines the strategic and financial situation of G.C.C.-SECURITATE S.R.L., one of the leading entities in the security services sector in the Republic of Moldova. The main objective of the research is to evaluate the company's financial performance for the period 2021–2024 and to identify technological modernization solutions designed to strengthen its market position and ensure long-term sustainability.

The novelty of the study lies in combining the analysis of financial indicators with an examination of the company's revenue and expenditure structure, thus providing a comprehensive perspective on its current state and development prospects.

Based on the results obtained, strategic recommendations are proposed, focusing on the implementation of advanced technologies—artificial intelligence, drones, automated systems—and on the diversification of the service portfolio, in order to reduce risks and capitalize on growth opportunities.

ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION AND TEACHER TRAINING (DPPD): RESPONSIBLE INTEGRATION AND IMPACT

Carmen- Olguța Brezuleanu[1], Iuliana Roată[2], Raluca Sînziana Zaharia[1], Florin Andrei Păduraru[1], Alin Mihnea Lupașcu[1], Mădălina-Maria Brezuleanu[3]

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[3]"Gheorghe Asachi Technical University", Iasi, Romania

This paper aims to investigate the impact of artificial intelligence (AI) on higher education and teacher training with a focus on responsible integration and ethical implications. The study was conducted at the university level and combined the application of a questionnaire to a sample of respondents: students, doctoral students, DPPD students, teachers, and case studies. This study showed that AI is mainly perceived as a tool to support documentation, personalization of learning, and data analysis, but there are also challenges such as lack of staff training, digital dependency, and reduced critical thinking. The results highlight both the perceived advantages (quick access to resources, personalization, research support) and the main barriers (insufficient resources, cultural reluctance, ethical issues). At the same time, the analysis highlights the importance of respecting the principles of digital ethics and promoting good academic practices as essential benchmarks for the responsible integration of AI. The conclusions emphasize that AI can contribute significantly to the modernization of the educational process and the training of future teachers, provided that it is integrated in an ethical, equitable, and didactically guided manner, in support of smart agriculture and sustainable development.

FOSTERING INTERDISCIPLINARY LANGUAGE LEARNING WITH AI: LESSONS FROM THE LANGVET-IA PROJECT

Elena Velescu

"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The integration of artificial intelligence (AI) into language education is reshaping the way languages for specific purposes (LSP) are taught and learned. The LANGVET-IA project, conducted from July 2024 to July 2025 across four partner countries (Romania, Moldova, Georgia, and Croatia), provides a unique case study of how interdisciplinary collaboration can enhance the design and implementation of AI-assisted language learning resources in the field of veterinary medicine. This article examines the pedagogical, technological, and terminological dimensions of the project, highlighting how experts in linguistics, veterinary science, and computer science jointly developed interactive manuals and multilingual terminological databases with the support of generative AI tools. The co-creation process involved the extraction and validation of specialized terminology, the design of adaptive learning activities, and the production of digital textbooks in French, English, and Romanian. The study argues that interdisciplinary approaches, when supported by intelligent technologies, offer fertile ground for reimagining LSP instruction and advancing inclusive, responsive, and forward-looking language education practices.

COLOUR AND CULTURE IN ESP: USING PURPLE BRANDING TO TEACH ENGLISH FOR FOOD ENGINEERING

Roxana Mihalache, Elena Velescu

"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

This paper examines the pedagogical value of integrating colour symbolism—focusing specifically on the colour purple—into English for Specific Purposes (ESP) instruction for students of food engineering. Across cultures, purple is often associated with creativity, luxury, innovation,

and health, making it an effective tool for teaching technical terminology and developing intercultural competence in a sector where branding and sensory perception are crucial. This study proposes a chromatic approach to ESP, incorporating authentic international advertising campaigns for purple-coloured food products to enhance learners' linguistic and cultural proficiency. The interventions included the analysis of marketing materials, targeted vocabulary development, and intercultural discussions on the cultural connotations of purple in global food markets. Findings indicate that the integration of visual and symbolic cues not only supports vocabulary acquisition but also fosters interdisciplinary links between engineering, sensory science, and language learning. The study argues that ESP courses in technical disciplines benefit from innovative approaches that extend beyond text-heavy resources, utilising visual communication and symbolic associations to contextualise technical concepts.

ECONOMICS AND ASYMMETRIC WARFARE

Donosă Dan, Boghiță Eduard, Viziteu Ștefan
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

In recent decades, the dynamics of armed conflicts have undergone a profound transformation, marking a shift from conventional wars between states to increasingly frequent forms of asymmetric warfare, in which unequal actors – whether state or non-state – confront each other through unconventional tactics. Economy and asymmetric warfare are two concepts that may seem to be from different worlds – one belongs to economic sciences, the other to the military and geopolitical fields – but in reality they are often closely interconnected. This type of conflict is no longer determined exclusively by brute military power, but also by economic, technological and informational factors. The economy thus becomes a central actor in the strategy and conduct of asymmetric warfare. While states invest billions in security, insurgent or terrorist groups operate with reduced budgets but with high efficiency, using informal financial networks and cutting-edge technology. The purpose of this paper is to analyze the complex interaction between the economy and asymmetric warfare, through an interdisciplinary approach, from relevant specialized literature. The paper shows that success or failure in an asymmetric conflict is decisively influenced by economic capacity for support, adaptation, and resilience.

GLOBAL FOOD SECURITY AND THE WORLD ECONOMY: INTERCONNECTIONS AND IMPLICATIONS

Eduard Boghiță, Dan Donosă, Ștefan Viziteu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

This paper examines the interconnections between **global food security** and the dynamics of the contemporary **world economy**, highlighting how access to safe, sufficient, and sustainable food resources influences economic growth, social cohesion, and political stability. **Food security**, defined through availability, accessibility, utilization, and stability, is increasingly recognized not only as a humanitarian concern but also as a strategic determinant of global economic development. The study analyzes recent trends in food production and consumption, emphasizing the impacts of **climate change**, urbanization, and population growth on global markets. It also explores the role of international trade and the effects of price volatility in exacerbating food insecurity, particularly in vulnerable regions. The paper further highlights the economic consequences of malnutrition on **human capital**, showing its direct influence on labor productivity, educational outcomes, and long-term development. Additionally, the fiscal burdens of emergency interventions and subsidy programs are discussed, demonstrating how they can constrain national budgets and limit investment in sustainable economic growth.The study also identifies opportunities arising from sustainable agriculture, digitalization, and technological innovation, which can strengthen the resilience of food

systems and promote equitable access.The main conclusion is that **global food security** and the **world economy** exist in a mutually interdependent relationship: economic performance shapes the ability of states to produce, distribute, and secure food, while equitable access to food is essential for economic stability and social well-being. Addressing these interdependencies is critical for building resilient, inclusive, and sustainable food systems capable of supporting long-term global economic growth.

AGRICULTURE DYNAMICS ACCORDING TO SUSTAINABLE DEVELOPMENT GOALS

Ștefan Viziteu, Stejărel Brezuleanu, Eduard Boghiță, Dan Donosă, Radu-Adrian Moraru
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The scientific paper aims to assess the transformations within the agricultural sector in the context of the implementation of the 2030 Agenda and its Sustainable Development Goals (SDGs). The research adopts an integrated approach, examining agriculture from economic, social, and environmental perspectives, with a focus on resource efficiency, reduction of ecological impact, and increased farm resilience. Using sustainability indicators the paper analyzes the progress achieved in Romanian agriculture, highlighting trends in productivity, digitalization, and the transition toward green farming practices. Furthermore, the study explores the role of agricultural management in implementing sustainable strategies, as well as the importance of public policies and European funding mechanisms in supporting farmers. The comparative analysis between regions and time periods reveals both best practices and persistent challenges related to climate change adaptation and social equity. The conclusions emphasize the need for an integrated managerial vision oriented toward innovation, efficiency, and responsibility, as a foundation for a real transition toward a sustainable and competitive agricultural system.

THE CONCEPT OF CARBON CREDITS IN AGRICULTURE: A REVIEW OF LITERATURE

Constantin Dragoș Dumitraș, Alexandru Sorin Tudoran, Gavril Ștefan
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

One of the major concerns of the 21st century is climate change, which has a significant impact on sustainable development strategies and the global economy. In this regard, the carbon credit market has become a key tool in efforts to reduce greenhouse gas emissions and accelerate the shift towards a low-carbon economy.

This work presents a literature study that emphasizes the discrepancies in the current understanding of carbon credits in agriculture. The approach will focus on a detailed analysis of the relevant terms and concepts, highlighting the connections and interdependencies among them and emphasizing their importance within the carbon market framework. Thus, carbon credits are primarily intended to provide businesses with a financial motivation to implement strategies to reduce greenhouse gas (GHG) emissions and to switch to environmentally friendly and more sustainable operations in industries like manufacturing and agriculture.

The paper's findings highlight the three key areas of study for experts in the field of carbon credits: carbon trading, carbon markets, and carbon sequestration.

EVOLUTION OF RESEARCH ON SUSTAINABLE AGRICULTURAL POLICY IMPLEMENTATION IN THE EUROPEAN UNION

Ioan Prigoreanu, Andreea Grigore-Sava, Gabriela Radu, Gabriela Ignat
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The study examines the evolution of research on the implementation of sustainable agricultural policies in the European Union, focusing on the central role of the Common Agricultural Policy, which addresses key issues such as agricultural sustainability, agri-environmental policies, eco-conditionality, rural development, and financial support mechanisms, highlighting both the progress made and the structural limitations. The analysis focuses on three main dimensions. In terms of impact, the studies reveal persistent difficulties for the CAP in halting biodiversity loss, preventing soil degradation, and adapting to climate change. Thus, greening measures have had limited effects, and uniform direct payments have contributed to a decline in cultural diversity and an increase in the value of agricultural land. However, agri-environmental instruments and organic farming schemes have demonstrated clear benefits for environmental protection. In terms of design, the literature highlights the relevance of instruments such as eco-conditionality, farm typologies, and LEADER programs, which allow policies to be adapted to the structural diversity of farms. Thus, targeting payments towards verifiable environmental outcomes, strengthening producer organisations and integrating technological and behavioural data are considered mechanisms for increasing the relevance and resilience of European agricultural policies. In terms of efficiency, econometric and experimental evaluations indicate divergent effects: investment subsidies and agri-environmental schemes support eco-efficiency and, to some extent, total factor productivity, while decoupled or coupled direct payments generate modest or negative results. The overall conclusion highlights the need for a transition from area-based payments to schemes geared towards results and public goods, by integrating agroecological principles and strengthened evaluation frameworks.

ORGANIC FARMING IN THE NORTH-EAST REGION OF ROMANIA – A VECTOR OF SUSTAINABILITY AND RURAL DEVELOPMENT

Constantin Cristian Boicu, George Ungureanu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

This research aims to contribute to the understanding of organic agriculture as a strategic component of sustainable development, highlighting its positive impact on the environment, public health, and rural economies. In the context of climate change and natural resource degradation, the study explores the principles, benefits, and challenges of transitioning to ecological farming systems, with a focus on the support mechanisms provided by the Common Agricultural Policy (CAP). The analysis is centered on the North-East Region of Romania, a territory with significant agricultural potential, where organic practices can serve as a catalyst for rural revitalization. The paper investigates historical constraints that hindered the development of organic agriculture, while also identifying current opportunities for renewal through adapted policies and targeted investments. The research concludes with strategic recommendations aimed at empowering farmers and local authorities to strengthen the performance of the organic sector. Its relevance lies in offering a sustainable, regionally adapted agricultural development model that addresses present and future challenges.

STUDY ON THE LAG APPROACH IN ROMANIA

Andrei Prigoreanu[1], Ion Verzea[2], Stejărel Brezuleanu[1]
[1] *"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania*
[2] *"Gheorghe Asachi" Technical University of Iasi, Iași, Romania*

The study analyses the implementation of the LEADER approach and Local Action Groups in Romania, in the European context, for the 2007–2013 and 2014–2020 programming periods, with an outlook on the 2021–2027 framework. Using a mixed methodology, the research integrated official statistical data, European Commission reports, and national evaluations, tracking financial allocations, expenditure structure, and performance indicators. The results show that Romania stood out for the speed of LAG approval, averaging five months, in contrast to delays of over two years in some Member States, and financial execution showed that over 77% of expenditure was directed towards local projects, with administrative costs at 22%, reflecting a balanced use of resources. However, cooperation projects accounted for less than 1% of the total, indicating limited integration into transnational networks. At European level, over two-thirds of LAGs used single fund financing, in particular the EAFRD, while only 24% applied the multi-fund model, including Romania. The comparative analysis showed that, although Romania exceeded the target for covering the rural population through local development strategies, it performed modestly in improving services and infrastructure, as well as in creating jobs. The conclusions suggest that the LEADER approach has contributed to mobilizing rural communities and strengthening local governance, but needs a stronger focus on measurable socio-economic impacts and inter-territorial cooperation in the current programming exercise.

THIRD SECTION
FOOD ENGINEERING

➔ 3rd Lecture room (TPPA_A3), third floor, TPPA building

Secretariat: Asist. Prof. Ioana CRIVEI, PhD
Eng. Ionuț–Dumitru VELEȘCU, PhD

14:00 – 16:00

PLENARY SESSION
Chairpersons: Prof. Petrică CÂRLESCU, PhD
Assoc. Prof. Roxana RAȚU, PhD

14:00-14:15

SUNFLOWER (*HELIANTHUS ANNUUS* L.) PETALS AS A SOURCE OF TERPENES

Maria Duca[1], Steliana Clapco[1], Alexandru Ciocarlan[1], Elena Iulia Oprita[2], Oana Iulia Craciunescu[2]

[1]Moldova State University, M. Kogalniceanu Str., 65A, MD-2009, Chisinau, Republic of Moldova
[2]National Institute of Research and Development for Biological Sciences, Splaiul Independenței 296, 060031, Bucharest, Romania

Sunflower (*Helianthus annuus* L.), a globally important oilseed crop, is also a rich source of bioactive phytochemicals such as phenols, terpenes, flavonoids, tannins, alkaloids, saponins, and carbohydrates. These compounds are associated with a wide spectrum of pharmacological activities, including anti-inflammatory, antioxidant, anticancer, anti-asthmatic, antigenic, antipyretic, astringent, antihypoglycemic, antifungal, and antibacterial effects.

In this study, the volatile oil from sunflower petals, collected from the experimental fields in Visoca (Republic of Moldova), was analyzed using gas chromatography-mass spectrometry (GC-MS). The analysis revealed a phytochemical composition dominated by monoterpenes and sesquiterpenes.

The major component was α-pinene (67.42%), a bicyclic monoterpene widely found in essential oils. α-Pinene is known for its anti-inflammatory, bronchodilator, antimicrobial, and antinociceptive properties, and has also demonstrated anti-osteoarthritis, anti-ulcerogenic, and gastroprotective effects, highlighting its broad therapeutic potential.

The second most abundant compound was β-phellandrene (9.11%), a monocyclic monoterpene recognized for its role as a natural insecticide in grain and food preservation. It also exhibits antibacterial, antifungal, and insect-repellent activities, contributing to plant defense mechanisms.

γ-Terpinene (4.04%), another significant constituent, is noted for its antioxidant and anti-inflammatory properties and is known to synergize with other terpenes and phenolics to enhance antimicrobial and anticancer effects.

These findings emphasize the therapeutic and ecological value of sunflower petal essential oils and suggest their potential application in pharmaceutical, cosmetic, and agricultural industries.

14:15-14:30

THE QUALITY OF SOME ASSORTMENTS OF RIPENED SOFT CHEESES WITH WHITE MOLD SOLD IN ROMANIA

Gabriela Frunză
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The purpose of this paper was the comparative assessment of the quality of some assortments of ripened soft cheeses sold in Romania. Two batches of four varieties of ripened soft cheeses with white mold (Brie cheese) were taken in the study: Ile de France, Alpenhain, President and Paysan breton, coded from A to D. Sensory (five-point scale method) and physico-chemical properties were analyzed. Were determined the treatable acidity (by Thörner metod), the pH (with Hanna cheese pH tester), the lipids (by the acid-butyrometric method), and salt content (by titration with silver nitrate) of the products. The results showed high differences between products in terms of fat content: the highest values were obtained for product C (29.00% determined and 31.00% on the label) and the smallest values were found for product A (23.50% determined and 25.00 on the label), with differences of 5.5 percentage points for the values determined in the laboratory and 6.0 percentage points for the values declared on the product label. The highest salt values were obtained for product A (2.89%) and the smallest values were found for product C (1.44%), with differences of 1.35 percentage points.

The results of the sensory analysis revealed a minimum score for product C (14.17 points- "satisfactory product" according to quality standards), compared to product A which obtained the best score among all the analyzed assortments (18.77 points- "very good product"). Following statistical processing, predominantly significant differences ($p < 0.05$) were observed for the most of the quality parameters analyzed.

14:30-14:45

NUTRITIONAL AND SENSORY EVALUATION OF WHEY CHEESE PRODUCED WITH DRIED BLACK CHOKEBERRY POMACE

Florina Stoica[1], Roxana Nicoleta Rațu[1], Florin Daniel Lipșa[1], Irina Gabriela Cara[1], Denis Țopa[1], Gerard Jităreanu[1]
[1] *"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania*

The integration of fruit by-products into dairy products is a chance to improve nutritional value and sensory attractiveness while promoting sustainable food production. This study examines the nutritional and sensory assessment of cheese made with the incorporation of dried black chokeberry (*Aronia melanocarpa*) pomace. Nutritional analyses concentrated on proximate composition, dietary fiber, phenolic compounds, and antioxidant capacity, contrasting enriched cheeses with control samples.

The results revealed a substantial enhancement in total polyphenols (4.45 ± 0.27-9.13 ± 0.31 mg GAE/g dw), dietary fiber, and antioxidant activity (26.43 ± 0.24-48.94 ± 0.34 µmol TE/g dw) in cheeses enriched with chokeberry pomace, underscoring its potential as a functional ingredient. Sensory evaluation demonstrated that moderate incorporation of pomace was positively perceived, particularly through improvements in colour and appearance, whereas higher inclusion levels were associated with a slight reduction in overall flavour acceptability. The results indicate that dried black chokeberry pomace can be effectively employed in cheese production to enhance nutritional attributes while preserving acceptable sensory qualities, hence facilitating the creation of value-added functional dairy products.

14:45-15:00

EVALUATION OF FOOD SAFETY IN A WHEY-BASED FERMENTED PRODUCT

Andreea-Bianca Balint[1], Florin- Daniel Lipșa[1], Ionuț- Dumitru Velescu[1], Sandu Talpă[1], Roxana Nicoleta Rațu[1]
[1] "Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Although long considered a by-product of cheesemaking, whey has been proven by this study to be a resource with high nutritional and functional value. Its utilization in the form of a fermented beverage, plain or enriched with elderberry extract, has been confirmed as an efficient strategy both technologically and sensory-wise.

The study confirmed the potential of acid whey as a substrate for functional fermented beverages, with physicochemical values showing a low pH (4.45 ± 0.00), high titratable acidity and a nutritional composition characterized by 1.02% protein, 3.74% lactose and 0.72% ash.

Microbiological analyses showed a low microbial load (NTG ~2 × 10^4 UFC/mL), below the limit set by EC Regulation no. 1441/2007, and the absence of E. coli and coliform bacteria colonies confirmed the safety of the sample. From a sensory point of view, the variants with the addition of elderberry extract were the best appreciated, due to their balanced taste, natural aroma and pleasant appearance. The results obtained indicate that fermented whey beverages can be classified as safe, nutritious and attractive products, with potential for use in the functional food industry and within the circular economy.

15:00-15:15

CRITICAL ANALYSIS OF HEAVY METAL NOTIFICATIONS IN RASFF: ADVANCING FOOD AND FEED SAFETY MEASURES

Ioana Cristina Crivei[1], Bogdan Ionel Cioroiu[1], Roxana Nicoleta Rațu [1], Florina Stoica[1], Ionuț Dumitru Velescu [1], Andreea Paula Cozma[1], Florin Daniel Lipșa[1]
[1] "Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Heavy metal contamination of food and feed is a major global concern, posing significant public health risks and necessitating robust monitoring methods. The present study has as its focus the Rapid Alert System for Food and Feed (RASFF) as the main tool for the identification, assessment and notification of heavy metal contamination of products in food supply chains at European level.

Analyzing RASFF notifications over a 12-year period and using statistical evaluation methods, the present study aimed to elucidate patterns of heavy metal contamination. The analysis carried out reveals a significant increase in notifications related to these heavy metals, such as fishery products or food contact materials but also other imported food products, highlighting vulnerabilities in both domestic and international supply chains.

The presence of heavy metals in food and feed poses considerable dangers to human health, especially among high-risk groups such as infants and pregnant women. Finally, these findings emphasize the necessity of strong regulatory frameworks and effective supervision techniques to mitigate these risks, promoting also more informed policy decisions to safeguard consumer health.

15:15-15:30

ESSENTIAL OILS FROM ACHILLEA MILLEFOLIUM L. AND HYPERICUM PERFORATUM L. AS PROMISING ANTIMICROBIAL AGENTS FOR THE FOOD INDUSTRY

Carmen R. Pop[1], Ancuța M. Rotar[1], Liana C. Salanţă[1], Teodora E. Coldea[1], Anca Fărcaş[1], Oana M. Grigor[1], Alina L. Nistor[1]
[1]University of Agricultural Science and Veterinary Medicine, Cluj-Napoca

Rising demand for natural products has highlighted essential oils (EOs) as alternatives to synthetic preservatives. *Achillea millefolium* L. and *Hypericum perforatum* L. produce EOs with antimicrobial and antioxidant properties that may support shelf-life extension. This study evaluated the effectiveness of EOs against common food-contaminating pathogens. The EOs were extracted from dried aerial parts using microwave-assisted extraction and tested via the microtiter plate method. EOs demonstrated antibacterial activity against both Gram-positive and Gram-negative strains (*Streptococcus pyogen*es – 0.095±0.049 µL/mL, and 1.17±0.431 µL/mL respectively; *Pseudomonas aeruginosa* – 5.14±0.000 µL/mL, and 10.8±0.000 µL/mL respectively). Both essential oils showed better antifungal activity against *Candida albicans* (2.45±0.000 µL/mL, and 3.795±1.902 µL/mL respectively). These results suggest that yarrow and St. John's wort EOs may be considered for food industry applications to enhance product shelf life.

COFFEE BREAK
15^{30} – 16^{00}

16:00-16:15

SHEEP WHEY VALORIZATION: TECHNOLOGICAL ADVANCES, FUNCTIONAL POTENTIAL, AND CIRCULAR ECONOMY PERSPECTIVES

George Scarlat, Roxana Elena Vasiliu, Carina-Florina Milos-Lazar, Aida-Maria Bengea, Elena Narcisa Pogurschi
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

Sheep's milk whey is one of the most significant by-products of dairy processing and is often regarded as waste, despite its considerable functional and nutraceutical potential. Recent advances in enzymatic hydrolysis, membrane filtration, and fractionation technologies have shifted the paradigm toward the production of high-value products such as functional beverages, nutraceuticals, protein isolates, and bioactive peptides.

This review provides an overview of sheep whey valorization, with a particular focus on its biofunctional applications and sustainability implications. Special attention is given to closed-loop models, where the transformation of waste into health-promoting food innovations is emphasized.

Challenges related to scalability, economic feasibility, and regulatory constraints are critically discussed as key barriers to large-scale industrial adoption. Ultimately, sheep whey valorization is aligned with sustainable development goals and offers significant opportunities for improving food system resilience and public health.

16:15-16:30

ALLICIN FROM GARLIC (*ALLIUM SATIVUM* L.)

Antoneta-Elena Sima[1], Elena Raducanu[1], Alexandru-Ionut Stefan[2], Ioana-Alexandra Alexe[1], Elena-Narcisa Pogurschi[1]
[1]University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
[2]ICA Research & Development, Bucharest, Romania

Garlic (*Allium sativum L.*) is a common plant valued for its culinary and medicinal uses. It contains numerous bioactive compounds, including sulfur-containing compounds, polysaccharides, saponins, flavonoids, vitamins, and minerals, which contribute to its health benefits. Among these, allicin—a sulfur-containing compound formed when garlic is crushed or chopped—is considered the main bioactive agent responsible for garlic's therapeutic effects. Alicin gives garlic its characteristic aroma and shows strong antimicrobial activity against a wide range of bacteria, including both Gram-positive and Gram-negative species. In addition to its antimicrobial properties, allicin exhibits antioxidant, anti-inflammatory, immunomodulatory, cardioprotective, anticancer, and neuroprotective effects. This review emphasizes allicin's chemical structure, formation, mechanisms of action, and biological activities, demonstrating how it underpins the health-promoting properties of garlic.

16:30-16:45

FOOD ADDITIVES IN ICECREAM: BENEFITS AND RISKS

Aida-Maria Bengea, George Scarlat, Carina-Florina Miloș-Lazăr, Maria-Luiza Mircea, Elena Narcisa Pogurschi
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

Food additives play a crucial role in the production of ice cream, significantly influencing the texture, stability, and shelf life of the final product. However, their use has raised concerns regarding their potential impact on consumer health. Among the most commonly used additives are stabilizers and emulsifiers, which help maintain consistency and enhance the sensory properties of ice cream. Recent studies, however, have shown that certain additives, such as carrageenan, can negatively affect gut microbiota and trigger inflammatory processes, directly impacting digestive health. Synthetic emulsifiers, such as polysorbate 80, have been linked to changes in gut flora, which may lead to long-term health risks, including chronic conditions. In contrast, natural emulsifiers like lecithin have a much lower impact on microbiota and are considered safer for gut health. In conclusion, this paper aims to highlight both the benefits and potential risks associated with the use of food additives in ice cream production.

FRIDAY, OCTOBER 24th, 2025

WORKSHOP SESSION

➔ 5th Lecture room (A5), first floor

Chairperson: Assoc. Prof. Iulian GABUR, PhD

10:00 – 10:45

ELECTRICAL CURRENT-MEDIATED TRANSFORMATION: A SIMPLE AND EFFICIENT GENOME EDITING STRATEGY FOR FABA BEAN

Sruthy Maria Augustine
Department of Plant Breeding,, IFZ Research Centre for Biosystems, Justus Liebig University Gießen, Germany

Plant innovation, IP and NGTs

Andrei Măruțescu
President of the Romanian Seed Industry Alliance (AISR), Romania

10:00 – 10:45

➔ Microbiology laboratory (A122), first floor, main Buiding

Chairperson: Prof. Florin-Daniel LIPȘA, PhD

Assessment of mycorrhizal status in the context of optimizing soil-microbiome-plant interaction: symbiotic root mapping using the MycoPatt method

Vlad Stoian
University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Romania

10:45 - 11:00

COFFEE BREAK

11:00 – 16:00

POSTER SESSIONS

➔ 5th Lecture room (A5), first floor: SOIL, WATER, AGRICUTURAL TECHNOLOGIES

➔ 3rd Lecture room (A3), second floor: AGRIBUSSINES AND RURAL DEVELOPMENT

➔ 3rd Lecture room (TPPA_A3), third floor, TPPA building: FOOD ENGINEERING

FACULTY OF HORTICULTURE

THE ART OF NATURE - HORTICULTURE

THURSDAY, OCTOBER 23rd, 2025

FIRST SECTION
FUNDAMENTAL SCIENCES, ENVIRONMENTAL ENGINEERING AND AGRICULTURAL BIOTECHNOLOGIES

➔ A235, third floor of the main building

PLENARY SESSION

Chairpersons: Assoc. prof. Camelia Elena LUCHIAN, PhD
Assoc. prof. Raluca Maria HLIHOR, PhD
Lecturer Ilie BODALE, PhD

Secretariat: Lecturer Diana GABUR, PhD
Assistant Ina ȚURCAN, PhD

14:00-14:10

APPLICATIONS AND IMPLICATIONS OF QUANTUM TECHNOLOGY IN FOODS

Lucia-Carmen Trincă, Andrei Alexandrov, Andreea Paula Cozma, Elena Cristina Scutarașu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Quantum technology is emerging as a groundbreaking innovation in the food industry, revolutionizing food processing, preservation, and safety. By leveraging principles such as superposition, entanglement, and quantum computing, this technology enhances efficiency and precision in food formulation and the interactions between ingredients. Quantum sensors enable molecular-level detection of contaminants, improving food safety and traceability. Additionally, quantum dots contribute to longer shelf life and smart packaging solutions. These advancements optimize food quality, enhance flavor profiling, and reduce waste. Despite challenges such as high costs and regulatory concerns, ongoing research indicates significant potential for future breakthroughs. This article examines the transformative potential of quantum technology by reviewing its key applications and implications for the field of food science. Thus, the various applications of quantum sensors that contribute to food safety testing (smart packaging, real-time detection of contaminants, verification of ingredient purity) require both a review of the quantum sensors developed and consideration of the main challenges related to their use. Recently, the development of quantum spectroscopy for food analysis has led to the emergence of high-performance devices with diverse applications that either optimize classical chemical analyses or provide a fast and efficient innovative response to food fraud/counterfeiting. Furthermore, the application of quantum cryptography for food traceability will contribute to the protection of databases and the elimination of product counterfeiting. The application of quantum artificial intelligence for personalized nutrition through DNA-based diets, the optimization of intestinal health, and the prevention of diseases induced by poor nutrition will contribute to the promotion of public health through personalized dietary interventions and the prevention of chronic diseases.

14:10-14:20

AN EFFECTIVE CIRCULAR ECONOMY SOLUTION TO REDUCE FOOD WASTE: JELLY CANDIES WITH APPLE POMACE EXTRACT

Iuliana Maria Enache, Liliana Ciurlă, Simona Mogoș, Antoanela Patraș, Liviu-Mihai Irimia
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Apple pomace is a by-product of apple juice production, and is considered to cause significant pollution issues. Although, apple pomace contains useful compounds that can be recovered and reused to create new food products. This helps the environment, the population, and the circular economy. apple pomace is a rich source of bioactive substances such as vitamins, minerals, dietary fibers, and phenolic compounds. Apple pomace jelly candies are suggested as a creative method to value this by-product in the current study. The carbon footprint (CF), which was computed based on the materials and equipment, was used to evaluate the jelly candy's environmental impact. The results highlighted the jelly's little environmental impact with a modest CF value of 1.3946 kg CO_2 for 1 kilogram of jelly.

14:20-14:30

AGRICULTURAL CROPS: A CHEMICAL APPROACH TO SUSTAINABLE VALUE

Bogdan Marian Tofănică, Elena Ungureanu, Alina Trofin
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Romanian agriculture presents a significant structural imbalance, characterized by a large share of the national workforce contributing a disproportionately small share to the GDP. This productivity gap highlights a need for new added value pathways beyond conventional food production. This report investigates the potential of lignocellulosic agricultural residues as a strategic, underutilized feedstock for the national bioeconomy. The methodology involves a quantitative analysis of public statistical data for eight major crops which collectively occupy over 80% of Romania's cultivated land. This paper concludes that the chemical valorization of this vast feedstock for energy generation, bio-based materials, and green chemicals represents a tangible opportunity to close the productivity gap, drive rural industrial innovation, and accelerate Romania's transition towards a resilient and circular economy.

14:30-14:40

ANALYTICAL OPTIMIZATION AND VALIDATION OF AN HPLC METHOD FOR ISOTHIOCYANATES QUANTIFICATION IN *BRASSICACEAE* VEGETABLES

Liliana Ciurlă, Iuliana-Maria Enache, Ioana Buțerchi, Alexandra Aruștei, Antoanela Patraș
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Isothiocyanates are sulfur-containing metabolites generated by glucosinolate hydrolysis, predominantly found in cruciferous vegetables (Brassicaceae), where they contribute characteristic spicy and bitter flavors. Isothiocyanates exhibit diverse bioactivities, including anticarcinogenic, anti-inflammatory, antioxidative, neuroprotective, and antimicrobial effects, attributed to their unique chemical reactivity. The quantification of these compounds in cruciferous vegetables is essential to

evaluate their nutritional and health-promoting properties. This study describes the optimization and validation of a high-performance liquid chromatography (HPLC) method for the simultaneous determination of five isothiocyanates. Chromatographic parameters were optimized to maximize resolution and sensitivity, and the method was validated following international guidelines. The method demonstrated satisfactory specificity, linearity, precision, and accuracy. It was subsequently applied for the identification and quantification of isothiocyanates in broccoli (*Brassica oleracea* var. italica), cauliflower (*Brassica oleracea* var. botrytis), and white cabbage (*Brassica oleracea* var. capitata f. alba).

14:40-14:50

THE STUDY OF THE AHP METHOD APPLIED TO GREEN VERTICAL WALLS

Andromeda Pătrașcu Sonea, Ciprian Chiruță
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Originally developed by Thomas Saaty in 1971, the Analytic Hierarchy Process (AHP) divides complex decision-making into a hierarchy of goals, criteria, and alternatives. By using paired comparisons, it quantifies the relative importance of each element, calculates weights for every criterion, and ranks the available alternatives, thus offering a structured framework for complex decisions. AHP is generally regarded as a subjective, fuzzy method. Our goal is to reduce this subjectivity by using Pareto diagrams, which reveal the influence of one parameter on another. This influence is essential for building the pairwise comparison matrix within AHP.

In this study, we apply the AHP method together with Pareto diagram analysis to investigate a green wall system planted with various species. Our objective is to answer the question: "Does the type of plant coverage in the system influence its internal temperature?"

14:40-15:00

FROM SEED TO STRESS: BASIL'S ECOTOXICOLOGICAL RESPONSE TO INDIVIDUAL AND COMBINED Pb^{2+} AND Cd^{2+} EXPOSURE DURING EARLY DEVELOPMENT

Raluca-Maria Hlihor, Isabela-Maria Simion, Maria Apostol, Petronela Cozma
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
"Gh. Asachi" Technical University of Iasi, Romania

Heavy metals exert significant abiotic stress on plants, especially when present as mixtures with complex toxicological interactions. Single-metal studies often fail to capture the cumulative effects observed under co-contaminant conditions. This study explores the ecotoxicological impact of Pb^{2+} and Cd^{2+}, individually and combined, on *Ocimum basilicum L.* Ten seeds were exposed in vivo to eight single-metal treatments (5-100 mg/L) and one binary mixture (50 mg/L Pb^{2+} + 2.5 mg/L Cd^{2+}), alongside controls. Morphological responses were assessed, with toxicity primarily affecting the radicle and hypocotyl. In the binary system, toxicity indices were -1.6% for the radicle, 30.5% for hypocotyl, and 39.2% for leaves. The negative index obtained for the radicle suggests a mild stimulatory effect, possibly linked to hormesis. Basil leaves showed greater tolerance to single-metal stress, while the binary mixture induced visible damage in aerial tissues and promoted root elongation. These findings highlight organ-specific sensitivity and adaptive responses under mixed-metal exposure, supporting basil's potential role in phytomanagement strategies.

Acknowledgment: 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.

POSTER SECTION
FUNDAMENTAL SCIENCES, ENVIRONMENTAL ENGINEERING AND AGRICULTURAL BIOTECHNOLOGIES

15:00-15:05

CHANGES IN NUTRIENT STATUS AND PRODUCTIVITY OF TREATED CUCUMBER PLANTS WITH POTASIUM PHOSPHATES AND NEEM OIL EMULSION AGAINST POWDERY MILDEW

Vladimir Rotaru
Institute of Genetics, Physiology and Plant Protection, Moldova State University, Republic of Moldova

A greenhouse experiment was carried out to evaluate the changes in nutrient status and productivity of cucumber plants treated with monopotasium phosphate, dipotasium phosphate and neem oil applied against powdery mildew. All treatments resulted in different changes of nitrogen, phosphorus and potassium contents in leaves. The application of neem oil emulsion alone recorded the lowest influence on nutrient status of cucumber plants. The most significant increase of phosphorus and potassium concentrations in leaves was registered in treatment with integrated use of dipotassium phosphate (1%) and emulsion of neem oil (0.5%). There was significant negative correlation between the phosphorus concentration in leaves and disease severity of powdery mildew.

Thus, this study revealed that the integrated use of potassium phosphates and emulsion of neem oil, applied against powdery mildew, changed the contents of nutrients in cucumber leaves and improved yield of cucumber plants.

15:05-15:10

MICROPLASTIC DETECTION IN DANUBE DELTA AQUATIC SYSTEMS: METHODOLOGICAL INSIGHTS AND SUSTAINABILITY PERSPECTIVES

Marius-Petruț Bujor, Darmina Niță, Gabriel Mihai Maria, Emilia Radu, Ioan Păceșilă, Carmen Postolache
University of Bucharest, Romania
Safetymed, Ilfov, Romania
Institute of Biology - Romanian Academy, Bucharest, Romania
University of Bucharest, Romania

Microplastics represent an emerging contaminant of concern, increasingly detected in both aquatic and terrestrial environments. The Danube Delta, a UNESCO World Heritage site and one of Europe's most complex ecological systems, is particularly vulnerable to plastic pollution due to its hydrological connectivity and multiple anthropogenic pressures. In this study, we analyzed sediments samples collected from lakes and the Danube River within the delta to detect and characterize microplastics using different methodological approaches, including optical microscopy and scanning electron microscopy (SEM).

The comparison of detection techniques revealed significant differences in particle size resolution and material identification, underlining the risk of underestimating contamination when relying solely on classical microscopy. Although our samples were exclusively from aquatic systems, the implications extend to agricultural systems in the region, as irrigation, sedimentation, and trophic transfer may represent indirect pathways of microplastic input into agro-ecosystems.

These methodological insights are critical for accurate risk assessment and for guiding sustainable practices in agriculture and environmental management. Our findings highlight the

necessity of adopting complementary detection methods and developing standardized protocols, which are essential for both scientific consistency and for informing policies aimed at protecting biodiversity and ensuring long-term agro-environmental sustainability in the Danube Delta.

15:10-15:15

ASSESSING TEMPORAL VARIATION IN FISH COMMUNITIES IN THE LESPEZI SECTOR OF THE SIRET RIVER (2021–2025)

Maria Desimira Stroe, Angelica Dobre, Gabriel Ion, Mirela Crețu, Magdalena Tenciu, Floricel Maricel Dima

Institute of Research and Development for Aquatic Ecology, Fishing and Aquaculture, Galati, Romania
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
"Dunărea de Jos" University of Galați, Romania

This study evaluates changes in fish biodiversity in the Lespezi sector of the Siret River by comparing data collected in 2021 and 2025. Abundance data, derived from scientific fishing surveys, were used to calculate multiple biodiversity indices, including Margalef's richness, Shannon–Wiener diversity, Simpson's dominance, and McIntosh's evenness, providing a comprehensive assessment of community structure. Although the results are subject to some limitations, as the captures reflect only those individuals caught during scientific fishing, the analysis highlights temporal variations in species richness and abundance over the two-year period, reflecting potential influences of environmental factors, anthropogenic pressures, and habitat changes.

These findings offer insights into the ecological status of the Siret River fish communities and support sustainable management and conservation strategies for freshwater ecosystems.

15:15-15:20

SUNFLOWER (HELIANTHUS ANNUUS L.) TISSUE CULTURE: TRENDS AND ADVANCES

Sabina Pintilia, Gabriel Anton, Elena Petcu, Marius Bordei

National Agricultural Research and Development Institute Fundulea, Romania

Between 2020 and 2025, research on in vitro culture of sunflower (Helianthus annuus L.) has led to the refinement of explant use, including cotyledons, cotyledonary nodes, and immature embryos. Murashige and Skoog (MS)-based media, supplemented with specific combinations of auxins (IAA, NAA) and cytokinins (kinetin, 6-BA), have been optimized to enhance organogenesis—the main regeneration pathway. Somatic embryogenesis remains difficult and inconsistent. A major limitation is the genotype-dependent response and the generally low regeneration efficiency.

These challenges are being addressed through genotype-specific protocols and by investigating the expression of key genetic regulators of totipotency, such as SERK and BBM. Improved in vitro systems now allow efficient genetic transformation, particularly through Agrobacterium tumefaciens-mediated methods, facilitating the development of transgenic or genome-edited lines.

Moreover, these technologies support the conservation of genetic resources from wild Helianthus species and the rapid clonal propagation of elite agronomic genotypes. Overall, these advances underpin the development of cutting-edge biotechnological strategies in sunflower breeding, with applications in sustainable production and improved tolerance to biotic and abiotic stress factors.

15:20-15:25

THE ANALYSIS OF CHLOROPHYLL, CAROTENES AND ANTHOCYANINS EXTRACTS AS FOOD COLORINGS

Alina Elena Trofin, Elena Ungureanu, Bogdan Marian Tofănică
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The dyes used in the food industry are mostly synthetic, due to their low cost and accessibility. However, natural dyes increase the quality of the products and represent an important selection factor among informed consumers. From the large number of natural dyes, we selected chlorophylls extracted from mint leaves, carotenes extracted from carrots and anthocyanins extracted from blackberries and blueberries. The extracts were made in 70% ethanol and the pigment content was determined spectrophotometrically. The change in values and colour in samples in acidic (lemon juice) and basic (sodium bicarbonate) mediums was monitored, considering the use of these dyes in acidified soft drinks or in pastry products. It was found that the extracts obtained from fresh material have higher levels of pigments than those obtained from dry material, except for those from carrots. The influence of the medium manifested differently, with chlorophyll extracts being more intense in alkaline solution, carotene extracts having comparable values in both mediums and anthocyanin extracts having values twice as big in acidic medium, in both blackberries and blueberries extracts.

15:20-15:25

INSULIN RESISTANCE: A METABOLIC KEY TO THE NEURODEGENERATIVE DISEASES

Andreea Paula Cozma, Mihaela Anca Dascălu, Ioana Cristina Crivei, Ivona Popovici, Șerban Moroșan, Lucia Carmen Trincă
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Type 2 diabetes mellitus is increasingly recognized as a significant risk factor for the onset and progression of Alzheimer's disease, conditions that share both metabolic and neurodegenerative features. Insulin resistance and chronic hyperglycemia promote oxidative stress, neuroinflammation, and β-amyloid accumulation, all of which contribute to neuronal damage. In addition, vascular impairment and disrupted cerebral energy metabolism accelerate cognitive decline in diabetic patients.

This study aims to explore the mechanistic links between type 2 diabetes and Alzheimer's disease, emphasizing how metabolic dysfunction may drive neurodegeneration. Understanding these interactions could support the development of early preventive strategies, improved glycemic control interventions, and novel therapeutic approaches targeting both disorders.

15:25-15:30

POLYPHENOLIC COMPOUNDS FROM WASTES RESULTING FROM INDUSTRIAL PROCESSING OF TOMATOES, APPLES AND GRAPES

Iuliana Maria Enache, Liliana Ciurlă, Maria-Elena Țepeș-Piser, Antoanela Patraș, Liviu-Mihai Irimia
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Apples (*Malus domestica*), tomatoes (*Solanum lycopersicum*), and grapes (*Vitis vinifera*) are among the top horticultural sources consumed globally, used predominantly in the food and beverage industry. Their processing results in significant quantities of by-products rich in biologically active compounds (such as polyphenols, carotenes, etc.), antioxidants, vitamins, fiber, carbohydrates, natural colorants, etc. For this reason, the raw materials used in this study were: apple pomace, grape pomace, and tomato pomace. The total polyphenol content (TPC) was determined using the Folin-

Ciocalteu method, and the total antioxidant activity (TAA) was tested using the ABTS method. High-performance liquid chromatography (HPLC) was used to analyze the individual polyphenolic compounds in the studied samples. The results showed that grape marc has the highest antioxidant activity (≈ 5000 µM Trolox equivalents/100 g sample). Sinapic acid, p-hydroxybenzoic acid, and ferulic acid are the main phenolic compounds in tomato pomace, followed by epicatechin and catechin. Tomato and grape pomace samples have higher levels of epicatechin (98.85 µg/g and 102.54 µg/g sample, respectively) and catechin (83.99 µg/g and 91.54 µg/g sample, respectively) compared to apple pomace. In conclusion, the wastes resulting from the industrial processing of the studied horticultural products are rich in polyphenols and have an important antioxidant activity, which make them suitable for valorization in various products.

15:35-15:45

SUSTAINABLE STRATEGIES AND INNOVATIVE SOLUTIONS FOR GRAPE POMACE VALORIZATION

Georgiana-Diana Gabur, Carmen Teodosiu, Lucia-Cintia Colibaba, Bettina - Cristina Buican, Ioana Bușterchi, Valeriu V. Cotea
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
"Gh. Asachi" Technical University of Iasi, Romania

Winemaking involves several key stages, including grape cultivation, harvesting, fermentation, aging, and waste management. One of the main by-products is grape pomace, composed of grape skins, pulp, seeds, and stems—typically in a ratio of 40% skins and pulp, 30% seeds, and 30% stems. In line with the European Waste Framework Directive (2008/98/EC), which emphasizes waste prevention and material reuse, the valorization of grape pomace is receiving increasing attention.

Traditionally, grape pomace has been used in the production of alcoholic beverages through distillation, particularly in countries like Italy, Greece, and Romania. It also serves as animal feed and organic fertilizer. Recently, research has explored innovative uses, including its application as a natural fining agent in wine clarification, due to its compatibility with wine components. Grape pomace has shown promising adsorption properties for removing water pollutants such as pesticides, heavy metals, and dyes. When thermally treated into biochar, its adsorption efficiency increases, supporting eco-friendly waste management and circular economy practices. Nutritionally, grape pomace is rich in antioxidants, fibers, and micronutrients. It has been successfully added to food products such as meat derivatives, dairy items, baked goods, and cereals to enhance health benefits.

This review highlights the various applications of grape pomace in the environmental, food, agricultural, and energy sectors, emphasizing its potential as a sustainable, value-added resource in line with the principles of the circular economy.

Acknowledgements
This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS-UEFISCDI, project number PN-IV-P2-2.1-TE-2023-0333, within PNCDI IV.

15:45-15:55

BIOMASS – POTENTIAL AND CHALLENGES IN BIOENERGY PRODUCTION

Anamaria-Ioana Dumitrașcu, Georgiana-Diana Gabur
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Biomass, as defined by Directive 2009/28/EC, refers to the biodegradable fraction of biological products, waste, and residues originating from agriculture, forestry, fisheries, and municipal sources. It serves as a vital renewable resource for energy generation. The carbon cycle of biomass, driven by photosynthesis, provides a near carbon-neutral alternative to fossil fuels, thereby contributing to the reduction of carbon emissions. Syngas production from biomass can be achieved

through thermochemical and biochemical processes, including combustion, pyrolysis, and fermentation. Biomass offers significant advantages such as environmental benefits, job creation, energy diversification, and improved energy security. However, challenges persist, including high moisture content, variable properties, low energy density, sustainability concerns, competition with food resources, and high associated costs. To address these issues and reduce environmental impacts related to ecosystem balance and biodiversity, sustainable biofuel production should focus on non-edible agricultural and forestry residues, industrial biomass wastes, energy crops cultivated on degraded lands, and animal or human wastes. The aim of this study is to evaluate the potential of biomass as a renewable energy source by highlighting its conversion methods, benefits and drawbacks, as well as its environmental impact and sustainability for bioenergy production.

15:55-16:05

MONITORING SAHARAN DUST INTRUSION OVER IASI IN SPRING CONDITIONS USING A CEILOMETER - A CASE STUDY

Ilie Bodale, Ana Cazacu, Adrian Timofte
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
National Meteorological Administration, Bacău Regional Forecast Centre, Romania

In temperate areas, episodes of invasion of Saharan air masses loaded with mineral dust are periodically encountered. In Romania, this phenomenon occurs frequently in spring and early summer, when global atmospheric circulation favours the transport of air masses from the tropics to mid-latitudes. The monitoring of the movements of cloud formations and dust clouds over Iasi was carried out between March 5th and 15th, using a Campbell Scientific SkyVUE8 lidar ceilometer, capable of scanning the atmospheric profile between 100 and 8000 m.

The identification of Saharan dust by this method alone is not sufficient, because the lidar signal has a noise level close to that of the backscattered signal generated by the condensation nuclei in the atmosphere, which can be of a different nature. Thus, complementary methods are needed to study a long-range Saharan dust intrusion event. To analyse the general circulation of the atmosphere at three altitude levels (500, 1000 and 1500 m) over northern Africa and southern Europe, the NOAA Hysplit model was used, and the characteristics identified in the upper atmosphere were correlated with the hydrometeorological conditions on the ground. Satellite data was also used to confirm the cloudiness.

During the analysed period, Iasi was crossed by several episodes of Saharan dust. This paper will present results on the time series of the range corrected signal (RCS), air mass trajectories and meteorological conditions, as well as the method for separating the backscattered signal from the noisy one. The ceilometer has proven to be a complementary tool to remote sensing techniques, effective for monitoring colloidal formations in the planetary boundary layer and the convection layer in the troposphere.

16:05-16:15

THEORETICAL CONSIDERATIONS REGARDING ACTION OF MICROWAVES IN ENVIRONMENTALLY FRIENDLY ORGANIC SYNTHESES

Roxana Angela Tucaliuc
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Microwave irradiation in chemistry introduced new concepts related to energy absorption and transmission, a completely different phenomenon in conventional heating reactions. The method is environmentally friendly, because in most cases the reaction time is substantially reduced from hours to minutes, the yields are significantly better, the amount in secondary products is diminished, and some syntheses take place in the absence of solvent. Nowadays, microwave irradiation is successfully

applied in almost all types of chemical reactions, with delightful results. The use of these working methods requires the use of a specific methodology, characteristic equipment, glassware, solvents, solid supports, etc. In the microwave field some materials absorb microwave energy, others reflect it or may simply not be affected by this energy. Basically, we can say that some materials are purely absorbent, others reflective or completely transparent to microwave energy.

SECOND SECTION
HORTICULTURAL AND LANDSCAPING TECHNOLOGIES

➔ A177 amphitheatre (A6), second floor of the main building

PLENARY SESSION

Chairpersons: Prof. Liviu Mihai IRIMIA, PhD
Prof. Valeriu V. COTEA, PhD
Prof. Vasile STOLERU, PhD
Assoc. prof. Liliana Elena CHELARIU, PhD
Lecturer Cristina ZLATI, PhD

Secretariat: Lecturer Maria APOSTOL, PhD
Assist. Ioana BUȚERCHI, PhD

14:00-14:10

FUNGAL PELLET-BASED CELL IMMOBILIZATION FOR VINICULTURE AND BIOETHANOL PRODUCTION

Jaime Moreno-García, Teresa García-Martínez, Juan Moreno, Juan Carlos Mauricio
Department of Agricultural Chemistry, Edaphology and Microbiology, University of Córdoba, Spain

Horticulture, the science of cultivating plants, links to two significant fermentation industries. On one side, it connects to viniculture, the cultivation of grapevines, which is the foundational step for enology, the science of winemaking. On the other, horticulture provides agricultural byproducts as feedstocks for bioethanol production. In both fields, Immobilized Cell Technology (ICT) is in many cases used as a more efficient alternative to free-floating cells. ICT involves physically confining cells while maintaining their biological activity. This method offers several advantages over traditional fermentation, including higher cell densities, which improve efficiency and product yield, greater process control, and a lower risk of contamination. Additionally, the reusability of the cells significantly reduces costs. Filamentous fungal pellets are a sustainable and novel support for cell immobilization. Unlike synthetic carriers, these pellets are food-grade and biodegradable. Their porous and flexible structure provides a protective scaffold for yeast, enhancing mass transfer and oxygenation. This technology has shown great promise in winemaking, where it can drastically reduce the time for lees removal in sparkling wines. In bioethanol production, it has enabled yeasts to resist high osmotic stress, fermenting high sugar content molasses to achieve a high ethanol yield while being reused up to seven times without a loss in fermentation efficiency. This innovative approach offers a sustainable and scalable platform for optimizing fermentation processes in both industries.

14:10 – 14:20

EXPERIMENTAL MODEL FOR THE STUDY OF AN INTEGRATED SYSTEM BASED ON CONSERVATIVE AND CONVENTIONAL VITICULTURE UNDER CHANGING CONDITIONS OBSERVED IN THE SPECIFICS OF BUJORU VINEYARD MICROCLIMATE

Mihai Tudor, Gabriel Tabaranu, Viorica Enache, Ștefan Potîrniche, Ionela-Daniela Ferțu
Bujoru Viticulture and Winemaking Research and Development Station, Galati, Romania
Faculty of Medicine And Pharmacy, "Dunărea De Jos" University of Galati, Romania

The study aims to identify and implement measures for soil fertility preservation; soil water evolution, dependent on soil preparation and maintenance works; optimize administered fertilizer doses commonly used in vineyard plantations; reduce soil structure degradation processes; increase productivity and reduce expenses at the vineyard farm level. It also aims to develop conservative viticultural methods (circular economy, green, minimum tillage, no-till), which will provide solutions to limit anthropogenic degradation of vineyard soils but also to increase plantation productivity and reduce environmental risks.

14:20 – 14:30

OBSERVATIONS REGARDING THE STRUCTURE, DYNAMICS, AND ABUNDANCE OF PESTS IN VITICULTURAL AREALS SITUATED IN SOUTHERN REGION OF MOLDOVA

Mihai Tudor, Gabriel Tabaranu, Ionela-Daniela Ferțu, Cătălin Toader
Bujoru Viticulture and Winemaking Research and Development Station, Tg. Bujor, Galati, Romania
Faculty of Medicine and Pharmacy, "Dunărea De Jos" University of Galati, Romania
Odobești Viticulture and Winemaking Research and Development Station, Romania

Knowledge regarding the patterns of occurrence and evolution in grapevine pests is mandatory for establishing timely control measures. Climate conditions play a vital role in the aggressiveness with which the attack manifests itself. Current trends are limiting the effectiveness of known phytosanitary treatments. We aimed at identifying pests that affect grapevine plantations situated in southern region of Moldova and implementing prevention, control strategies. Our study showed current harmful and useful fauna presence and density, in the face of climate change.

14:30-14:40

CRITICAL ANALYSIS OF VINEYARD ECOSYSTEM CURRENT STATE THROUGH BIOTOPIC FACTORS AND ENVIRONMENTAL CONSERVATION STRATEGIES

Mihai Tudor, Gabriel Tabaranu, Aurel Ciubuca, Ștefan Potîrniche, Ionela-Daniela Ferțu
Bujoru Viticulture and Winemaking Research and Development Station, Galati, Romania
Faculty of Medicine And Pharmacy, "Dunărea De Jos" University of Galati, Romania

Grassing the inter-row interval in vineyard plantations, often referred to as "cover cropping" or "inter-row planting," is an environmentally beneficial practice that has been increasingly adopted to enhance sustainability, biodiversity, and ecosystem adaptability. Evaluation of this practice must consider its impact on vegetation status, soil health, water retention, pest and disease regulation, and pollinator habitats. Our study focuses on main vegetation status indices, such as: biodiversity enhancement, soil health improvement and water retention. Our multiannual evaluation identified some improvements in key vegetation indices.

14:40-14:50

ASSESSMENT OF DIFFERENT PLUM CULTIVAR RESPONSES TO LATE SPRING FROST IN NORTH-EAST OF TRANSYLVANIA

Luminița Zagrai, Ioan Zagrai, Larisa Vlașin, Georgeta Guzu, Claudia Moldovan
Fruit Research and Development Station Bistrița, Romania

Late spring frosts represent a major threat to plum cultivation in temperate-continental regions such as Romania, particularly for early-flowering cultivars, with the risk being further amplified in recent years by climate change. In the spring of 2025, a six-day period of consecutive negative temperatures, combined with high atmospheric humidity and light but frequent precipitation, created extremely unfavorable conditions that caused varying degrees of damage to reproductive organs. In this context, a study was carried out at FRDS Bistrița on two experimental plots to monitor climatic factors and assess the response of 35 Romanian and foreign plum cultivars to late spring frost exposure.

Data were analyzed using k-means clustering and PCA to classify cultivars according to frost damage and to establish correlations with phenology, flower bud density, and fruit yield. The analysis identified four groups of cultivars: very sensitive ('Black Sun', 'Jojo', 'Andreea', 'French Improved', 'Zamfira', 'Jofela', 'd'Agen', 'Topper', 'Flora', 'Zandra', 'Diana'), sensitive ('Tophit', 'Anna Späth', 'Stanley', 'President', 'Pescăruș', 'Minerva', 'Ivan', 'Tuleu dulce', 'Carpatin', 'Silvia'), tolerant ('Iulia', 'Toppend Plus', 'Top Five', 'Gras ameliorat', 'Delia', 'Doina', 'Joganta'), and resistant ('Centenar', 'Elena', 'Jubileu 50', 'Blue Free'), with direct implications for fruit yield.

These findings provide a solid scientific basis for recommending frost-tolerant or resistant plum cultivars as a practical strategy to ensure stable production in areas prone to late spring frosts. Moreover, the inclusion of these cultivars in breeding programs is essential for developing new adapted genotypes and ensuring the sustainability of fruit production

14:50-15:00

MULTIPLE USES OF EDIBLE PARTS IN ORNAMENTALS AND OTHER UNDERUSED TREE SPECIES

Cristina Zlati, Ioana Bușterchi, Roxana Pașcu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

This paper explores the culinary potential of plants traditionally considered ornamental, highlighting the diversity of edible parts they can offer. We have considered several less used ornamental or fruit species with high ornamental value and their usable components, such as young leaves, flowers and fruits, discussing their nutritional profile and safety of consumption. In addition to the botanical aspects, the paper presents practical preparation methods, from salads and infusions to sweets and side dishes, offering innovative ideas for integrating them into everyday nutrition. Special emphasis is placed on the precautions necessary for the correct identification and avoidance of toxic species or those treated with chemicals.

Finally, the study highlights the ecological and economic benefits of valorizing these resources, promoting a more sustainable approach to our relationship with the plant world.

15:00-15:10

GREEN TERRACES – A PLANT BASED SOLUTION FOR GREENER CITIES

Roxana Pașcu, Cristina Zlati, Ina Vladimir
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

This research paper investigates the potential of green terraces as a sustainable, plant-based solution for mitigating urban environmental challenges and promoting greener cities. As urban populations continue to grow, cities face increasing pressures from climate change, air pollution, and the urban heat island effect, coupled with a significant loss of biodiversity. Green terraces, which include living roofs, rooftop gardens, and vertical green walls, offer a practical and scalable strategy to address these issues by integrating nature directly into the built environment. The study examines the multifaceted benefits of green terraces from several perspectives: environmental, economic, and social with focus on several on site exemples. Through a review of existing literature, case studies, and quantitative data, this paper aims to provide a comprehensive overview of the design, implementation, and maintenance of green terraces. It also discusses policy frameworks and incentives that can encourage their widespread adoption. The findings demonstrate that green terraces are not merely aesthetic additions but are essential components of a resilient and sustainable urban infrastructure, offering a tangible pathway towards creating healthier, more livable, and truly greener cities.

15:10-15:20

PLANTING DESIGN FOR RESILIENT LANDSCAPES: THE ROLE OF CONIFERS, DECIDUOUS AND PERENIAL PLANT GROUPINGS IN ECOLOGICAL LANDSCAPE ARHITECTURE

Tatiana Sandu, Ina Vladimir(Asiminei), Roberto-Renato Bernardis, Marinela Bădeanu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Resilient landscapes represent a hot topic in current research and rely on the integration and planning of plant groupings that provide not only beauty but also significant ecological value. Responding to the growing emphasis on resilient landscapes, the study assesses the contribution of conifers, deciduous trees, and perennial plants in harmonizing visual impact with the ecological benefits provided to the space. Based on design principles for different categories of spaces, several compositions were proposed and their impact on visual quality, as well as the ecological benefits generated, were evaluated. The study demonstrates that certain aesthetic and ecological effects arise only from specific groupings or species, and altering even a single element can compromise the outcome. This knowledge guides the proper mixing of plant groupings in both public and private designed spaces. Moreover, integrating this understanding into large-scale management strategies enables the creation of ecologically rich landscapes.

15:20-15:30

VARIATION OF YIELD AND FRUIT QUALITY OF EGGPLANT DEPENDING ON SOIL MULCHING

Delia – Cristina Constantin, Mihaela Paraschiv, Gicuța Sbîrciog, Mihaela – Alina Buzatu
Research and Development Institute for Vegetable and Flower Growing Vidra, Romania

Soil mulching has a significant influence on yield and fruit quality of vegetables. The present work aimed to determine the influence of some types of mulch on some production and quality parameters of eggplant fruits. Four types of plastic film were used: transparent, black, black-white

and brown mulching film, and as organic material, straw mixed with tree bark. The five mulching variants were compared both with each other and with the variant in which soil mulching was not practiced. The open-pollinated cultivar Luiza was used as biological material. Yield potential was determined by the number of fruits per plant, the average weight of a fruit and the yield per hectare. Fruit quality was determined by the content of total dry matter, ash and total soluble solids. The practice of soil mulching had a significant influence on yield and fruit quality of eggplant. Of the variants studied, the best results were obtained in the case of usage of the black and brown foil mulching variants.

15:30-15:40

YIELD AND QUALITY OF ROUND PEPPER FRUITS - INFLUENCE OF CALCIUM NITRATE AND BIOSTIMULANTS

Mihaela Paraschiv, Delia – Cristina Constantin, Mariana – Cristiana Gheorghe
Research and Development Institute for Vegetable and Flower Growing Vidra, Romania

The study aims to investigate the effect of using calcium nitrate, simple or combined with different biostimulants on the quantity and quality of round pepper fruits (Capsicum annuum L. var. grossum). The biological material used consisted of the cultivar "Asteroid 204". Three foliar treatments were applied, from fruit setting, with calcium nitrate alone or in combination with three seaweed-based biostimulants (Agrocean B, E-Dalgin and Kelpak), two based on microorganism inoculum (Triptolemus HV and Albit), and three mixed bistimulants (Sprintene, Kinactiv Fruit and Rerum). The mass of a fruit, the number of fruits per plant and the yield were determined, and for the assessment of quality - the firmness and thickness of the pulp, the total dry matter content, the total soluble solids, and the level of titratable acidity. The combined use of calcium nitrate with various biostimulants, such as Kelpak, Kinactiv Fruit or Rerum, increases production and improves some quality traits.

15:40-15:50

AGROECOLOGICAL ASSESSMENT OF TOMATO PERFORMANCE UNDER DIFFERENT VARIETAL AND COMPANION PLANTING SYSTEMS

Florin-Daniel Nițulescu, Paula Stoicea, Roxana Ciceoi, Liliana Bădulescu
Faculty of Management and Rural Development, University of Agricultural Sciences and Veterinary Medicine Bucharest, Romania
Research Center for the Study of the Quality of Agri-food Products, Bucharest, Romania

The integration of agroecological principles in vegetable production aims to enhance productivity while reducing reliance on chemical inputs. In this study, we compared the performance of two tomato cultivars (*Solanum lycopersicum L.*) grown under different ecological management strategies: (i) cv. MoneyMaker exposed to full sun, with companion plants (*Tagetes patula* and *Ocimum basilicum*), (ii) cv. Buzău 1600 (dwarf type) cultivated in association with sweet pepper (*Capsicum annuum L.*), and (iii) cv. MoneyMaker grown in shaded conditions with Portulaca oleracea as ground cover. For each variant, morphometric descriptors (plant height, number of clusters, fruits per cluster, total fruits per plant, fruit diameter, and ripening stage) were recorded from 10 individual plants. Statistical analysis revealed highly significant differences among variants (ANOVA, $p < 0.001$). Plants of MoneyMaker in full sun with companion flowers and basil reached an average height of 172.5 cm and yielded 12.9 fruits/plant, with uniform ripening. In contrast, Buzău 1600 dwarf plants averaged 39.6 cm in height, producing 5.0 fruits/plant, predominantly unripe. MoneyMaker grown under shade reached 197 cm height but yielded only 3.5 fruits/plant, indicating a trade-off between vegetative growth and reproductive output. These findings highlight the importance of light availability and companion planting in shaping tomato productivity within agroecological systems.

This work was supported by a grant of the Ministry of Research, Innovation and Digitalisation CNCS/CCCDI-UEFISCDI, project number COFUND-AGROECOLOGY-AllEcoSys, whithin PNCDI IV.

15:50-16:00

WATERMELON GRAFTING METHODS – REVIEW (I)

Nicu-Alexandru Vicovanu, Beatrice Elena Tănase, Ana-Maria Ciubotăriță, Maria Stătescu, Vasile Stoleru
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Watermelon (*Citrullus lanatus L.*) is a valuable horticultural species, appreciated for its tasty and nutritious fruits. The crop can be affected by various stress factors that reduce the yield and quality of the fruits. A sustainable solution is grafting on resistant rootstocks (*Lagenaria spp*. or other compatible cucurbits), a technology that improves resistance to biotic and abiotic stress factors, such as vascular wilt (*Fusarium oxysporum f. sp. niveum*), root-knot nematodes (*Meloidogyne spp*.), drought, salinity, temperature and humidity, and ensures more stable yields.
Grafting, as a method, has the potential to increase tolerance to provide resistance to plants against soil diseases and pests, improve the efficiency of water and nutrient use, and optimize crop productivity and yield under various climatic and soil conditions.

16:00-16:10

WATERMELON GRAFTING MACHINES – REVIEW (II)

Nicu-Alexandru Vicovanu, Ana-Maria Ciubotăriță, Gabriel Ciprian Teliban, Alexandru Cojocaru, Vasile Stoleru
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Watermelon grafting—joining a watermelon scion to a disease-resistant rootstock—has transformed the production and sustainability of one of the world's most important horticultural crops. Driven by the need to combat soil-borne diseases, improve plant vigor, and maintain productivity in limited or intensively cultivated land, the technique has evolved from manual grafting methods to industrialized technology supported by advanced mechanization. This report presents a detailed and chronological history of the development of the watermelon grafting equipment, highlighting the milestones, technological innovations, key inventors and companies, and global adoption patterns that define this way. The paper designed to support scientific visualization and policy analysis for future research and technology development in horticulture.

16:10-16:20

SORGHUM AND ITS ALLELOPATHIC POTENTIAL – PERSPECTIVES FOR WEED MANAGEMENT IN HORTICULTURE

Beatrice Elena Tănase, Nicu - Alexandru Vicovanu, Mihaela Zaharia(Rogojină), Vasile Stoleru
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Sorghum (*Sorghum bicolor*) is a xerophytic plant of the Poaceae family, known both for its adaptability to drought conditions and for its nutritional value. It has a deep root system and a metabolism that can generate bioactive compounds with allelopathic effects on other plants in the same environment. The main compound involved in this process is sorgoleone, a benzoquinone derived from root exudates and root hairs, which has herbicidal effects on weeds.

Sorgoleone and its associated compounds are continuously released into the rhizosphere during the growing season, influencing the competitiveness of nearby plants and contributing to natural weed control. This allelopathic mechanism is mediated by the enzymatic biosynthesis of sorgoleone and the transport of bioactive compounds in the rhizosphere, offering opportunities for its application in sustainable horticultural systems and integrated weed management. The present study focuses on recognizing the allelopathic properties of sorghum, highlighting its potential as a natural resource for the development of innovative, efficient, and environmentally friendly agricultural practices.

16:20-16:40
COFFEE BREAK

16:40-16:50

GENOTYPIC VARIATION IN PHYSIOLOGICAL, BIOCHEMICAL, AND MORPHOLOGICAL TRAITS OF TOMATO (SOLANUM LYCOPERSICUM L.) UNDER GREENHOUSE CONDITIONS

Andreea Antal Tremurici, Claudia Bălăiță, Mariana Calara, Creola Brezeanu, Petre Marian Brezeanu, Dan Ioan Avasiloaiei, Vasile Stoleru
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania
Vegetable Research and Development Station, Bacău, Romania

Tomato (*Solanum lycopersicum L.*) constitutes one of the most agronomically and economically significant vegetable crops worldwide, valued both for nutritional properties and its consumer acceptance, which are strongly influenced by physiological, morphological, and biochemical traits. In this study, ten tomato lines (LP1–LP10) were cultivated under greenhouse conditions and evaluated for fruit dimensions, soluble solids, organic acids, mineral composition, and leaf pigments (chlorophyll and anthocyanin). The objective was to identify variability among genotypes and to determine the most promising lines for yield and quality improvement.

Significant differences were observed among lines for fruit size and weight. LP5 produced the largest fruits (98,92 mm diameter, 349,46 g), whereas LP10 showed the smallest (50,75 mm, 85,00 g). The soluble solids content ranged from 4,60 in LP9 to 6,78 in LP2, while malic acid values varied between 0.25 and 0.34%. Mineral content showed smaller fluctuations (0,13 – 0,20%), but had an effect on the maturity index (15,29 – 22,22). The taste index was highest in LP7 (1,25), indicating superior organoleptic quality.

Overall, the results demonstrate that both fruit quality and physiological performance are genotype dependent. LP5 was identified as the most promising line for fruit size and yield, while LP7 combined high taste index and favorable leaf pigment traits. These findings emphasize the relevance of integrating physiological and quality traits in tomato selection to support both consumer preference and crop resilience, also underline the importance of integrating fruit quality parameters with physiological traits in tomato breeding programs.

16:50-17:00

STUDIES ON WHITE WINES PRODUCED BY SMALL-SCALE WINEMAKERS IN THE DEALU MARE VINEYARD

Mădălina Pitei (Dușmănescu), Lucia Cintia Colibaba, Camelia Luchian, Ionel Bogdan Cioroiu, Dana Siminel, Valeriu V. Cotea
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania
Oenological Research Center, Romanian Academy – Iasi Branch

The Dealu Mare vineyard, located between Teleajen River in the west and Buzău River in the east, extends across Prahova and Buzău counties and covers approximately 15.000 hectares of

vineyards. Artisanal winemakers in Dealu Mare can be broadly divided into two categories: (i) small producers with larger vineyard areas who often achieve relatively good-quality wines, though in limited quantities, and (ii) household producers who typically produce small volumes of wine for family use or informal sale on local, unregulated markets. These wines are usually young, often produced from mixed grape varieties, and rarely subjected to laboratory quality control.

This study evaluated the physico-chemical characteristics of white wines produced by household winemakers across Dealu Mare vineyard and compared them with both legal standard wines from authorized wineries in the same region. Seventeen wines were analyzed, including eleven artisanal samples and six control wines (DOC Fetească albă, Tămâioasă românească, Saugvignon blanc and Chardonnay). Standard methods approved by the OIV were used to assess alcoholic strength, density, total dry extract, total and volatile acidity, sulfur dioxide content.

While some samples complied with legal limits and matched control wines, others showed sub-legal alcoholic strength or low extract. Among artisanal wines results the analyses revealed a wide range in alcoholic strength, from 6.72% to 13.88%. Other parameters analyzed included total acidity, volatile acidity, free and total sulfur dioxide content, relative density, and total dry extract.

The results suggest that some household producers may lack access to or familiarity with appropriate winemaking technologies and the legal requirements in the field. Encouraging the adoption of best practices and regulatory compliance could support quality improvements and facilitate the integration of these products into the regulated wine market.

17:00-17:10

STUDIES ON THE SENSORY PROFILE OF RED WINES OBTAINED FROM AUTOCHTHONOUS GRAPE VARIETIES CULTIVATED IN THE VITICULTURAL REGIONS OF HISTORICAL MOLDOVA

Daniela Siminel, Lucia Cintia Colibaba, Camelia Elena Luchian, Bogdan Constantin Nechita, Ionel Bogdan Cioroiu, Elena Cristina Scutărașu, Valeriu V.Cotea

"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania
Oenological Research Center, Romanian Academy – Iasi Branch

The present study focuses on the evaluation of the sensory profile of red wines produced from the autochthonous grape varieties Fetească neagră and Băbească neagră, two emblematic cultivars representing the viticultural heritage of historical Moldova.

This research was conducted in the context of increasing interest in the characterization and valorization of indigenous varieties, aiming to strengthen their regional identity and enhance competitiveness on international wine markets. A total of 24 wine samples (16 Fetească neagră and 8 Băbească neagră) were collected from different vineyards located within the historical region of Moldova.

The sensory evaluation was carried out through descriptive analysis, performed by a panel of 15 trained assessors. Specific aromatic and gustatory descriptors were identified for each variety, and their intensity was assessed using a 1–10 point scale, following standard methodologies applied in wine sensory analysis. Each sample was also subjected to a global quality evaluation to outline a general image of the oenological potential.

The study contributes to the comprehensive sensory characterization of Fetească neagră and Băbească neagră wines, underlining their significance in promoting the viticultural diversity and oenological traditions of historical Moldova. These findings support the importance of preserving and valorizing indigenous grape varieties, as an essential component of the national wine identity and heritage.

17:10-17:20

OPTIMIZING THE PHENOLIC STRUCTURE OF RED WINES OBTAINED FROM FETEASCĂ NEAGRĂ GRAPES BY REVERSE OSMOSIS

Alexandru Gabriel Suduc, Cătălin Ioan Zamfir, Lucia Cintia Colibaba, Camelia Elena Luchian, Elena Cristina Scutărașu, Ionel Bogdan Cioroiu, Andreea Țurcanu, Daniela Siminel, Valeriu V.Cotea

"Ion Ionescu de la Brad" Iasi University of Life Sciences Romania
Oenological Research Center, Romanian Academy, Romania

Unfavorable climatic conditions during certain vintages may result in low-quality grape harvests, significantly affecting the final characteristics of wines. In such situations, the winemaker must adopt unconventional technological strategies and high-performance oenological materials to ensure quality. This study aimed to assess the influence of reverse osmosis and tannin addition on the physicochemical composition of red wines obtained from Fetească neagră grapes grown in the Iași vineyard. The must obtained from grapes harvested before technological maturity (12% alcohol potential) was concentrated by reverse osmosis to 13.8% (V1), 14.7% (V2), and 15% (V3), followed by fermentation. The control wine (VT) was produced from grapes harvested at technological maturity. In addition, several variants (V4–V22) were elaborated with different commercial tannins (Gallovin, Fermotan, Ellagitan, Protan, EB series), added to the must in specific doses. All wines were analyzed for alcohol content, total and volatile acidity, density, total extract, and residual sugar. Results revealed a gradual increase in alcohol strength and dry extract in concentrated wines, as well as improved phenolic structure in samples with added tannins. In conclusion, reverse osmosis and enological tannins represent effective tools for producing balanced, complex wines during unfavorable vintages.

17:20-17:30

VALORIZATION OF RED ONION SKINS FOR NUTRITIONAL ENRICHMENT OF JAMS

Ioana Bușterchi, Cristina Zlati, Liliana Ciurlă, Diana Gabur, Roxana Angela Tucaliuc, Liviu Mihai Irimia

"Ion Ionescu de la Brad" Iasi University of Life Sciences Romania

The sustainable development and circular economy trends in the food industry require innovative approaches to reduce vegetable waste and transform it into value-added ingredients. Onion peel (Allium cepa), a by-product resulting in significant quantities from vegetable processing, is an important source of bioactive compounds, especially flavonoids (quercetin), with antioxidant and antimicrobial properties.

The paper investigates the possibility of using onion peel as a functional ingredient in the process of obtaining hot pepper jam (Capsicum annuum). Four samples of home-made hot pepper jam were analysed, one of them with the addition of onion peel powder. The technological aspects of incorporating red onion peel extracts, the impact on physicochemical parameters (soluble dry matter, acidity, pH, vitamin C, moisture, ash), and the influence on the sensory profile of the product were analyzed. Preliminary sensory tests indicated high consumer acceptability, with distinctive notes of aroma and balance between spiciness, sweetness, and slight accents specific to onion extract.

The results suggest that the integration of onion peel into hot pepper jam improves the nutritional value and stability of the product, contributing to the reduction of food waste and the creation of sustainable and innovative products.

17:30-17:40

RESULTS ON SEED PROPAGATION OF *CAMASSIA LEICHTLINII*

Alina - Ștefana Ozarchievici, Maria Apostol, Roberto Renato Bernardis, Maria Cantor, Lucia Draghia

"Ion Ionescu de la Brad" Iasi University of Life Sciences Romania
University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania

Endemic to North America, *Camassia leichtlinii* is an ornamental plant that is suitable for cultivation under Romanian climatic conditions as a rustic geophyte. Although the establishment of crops is usually done by planting bulbs in autumn, camas can also be propagated by seeds. The emergence from dormancy and germination of seeds requires a cold period (42-100 days) ensured either by sowing in the field in autumn or by wet stratification, at 1-5 °C. The present work aimed to analyze the percentage of germinated seeds of two varieties of *C. leichtlinii* ('Alba' and 'Caerulea'), after stratification periods of 10 and 12 weeks, as well as the growth of plants obtained from seeds. Cultivar 'Alba' attained 100% germination following 10 weeks of stratification and 90% from autumn field sowing, while in the 'Caerulea' variety, the maximum germination percentage (75%) was after 12 weeks of stratification. Measurements were taken of the resulted bulbils after one growing season (diameter, height) and the length of the leaves was measured in the plants that started to grow. Strong positive correlations between bulbil diameter and leaf length were recorded in all experimental variants for the 'Alba' variety, but only for the field-sown plants of Caerulea'. In contrast, 'Caerulea' displayed strong negative correlations between bulb diameter and bulb length following seed stratification at 10 weeks (*p-value* = -0.94) and at 12 weeks (*p-value* = -1.00).

17:40-17:50

INFLUENCE OF CULTIVATION SYSTEM ON UNDERGROUND ORGANS IN ORNAMENTAL VARIETIES OF *IPOMOEA BATATAS*

Alina - Ștefana Ozarchievici, Maria Apostol, Ciprian Chiruță, Maria Cantor, Lucia Draghia

"Ion Ionescu de la Brad" Iasi University of Life Sciences Romania
University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania

Within the *Convolvulaceae* family, *Ipomoea batatas* (sweet potato) occupies an important place due to its multiple uses. Three ornamental sweet potato varieties ('Heart Bronze', 'Black', 'Heart Lime') were studied to evaluate the influence of the cultivation system used (field, containers, pots) on the underground organs. Aspects such as the size of the formed tuberous roots (length, diameter and mass), as well as their number were analyzed, and then correlations have been established between these two features. Medium and strong correlations were recorded between the diameter and mass of the tuberous roots in all cultivars and in all cultivation systems used, with the maximum value (p-value= 0.95) for the 'Black' variety grown in pots. The Kruskal-Wallis test indicated non-significant differences regarding the development of underground organs under field conditions, but significant differences for all monitored traits in containers and pots. Within each cultivar all culture systems produced significant effects on tuberous root number and diameter, whereas differences for other features were non-significant except for root mass for the 'Heart Bronze' variety.

FRIDAY, OCTOBER 24th, 2025

POSTER SECTION
HORTICULTURAL AND LANDSCAPING TECHNOLOGIES

➔ A177 Amphitheater (second floor, main building)

Chairpersons: Prof. Mihai TĂLMACIU, PhD
Prof. Mihai ISTRATE, PhD

Secretariat: Assist. Roxana ISTRATE, PhD

09:00-09:05

REHABILITATION OF A SPACE THAT INCLUDES SPECIFIC ELEMENTS OF THE NEOROMANIAN STYLE

Roxana Paşcu, Cristina Zlati, Ina Vladimir
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

This study explores the principles and methodologies for the rehabilitation of natural spaces surrounding buldings that incorporate elements of the Neoromanian style. Originating in the late 19th century, the Neoromanian style represents a synthesis of traditional Romanian folk architecture, Brâncovenesc influences, and Byzantine aesthetics. This architectural and artistic movement aimed to define a national identity and is characterized by specific elements such as semicircular arches, loggias, columns with basket capitals, and the use of natural materials like brick and stone. The research focuses on the landscape rehabilitation of the associated garden, arguing that the outdoor space is an integral part of the Neoromanian design philosophy. The approach centers on the use of traditional horticultural species, particularly native trees and shrubs, to recreate a rustic, yet elegant, atmosphere. The study proposes a framework for designing and implementing these green spaces, emphasizing the importance of respecting the historical context. The paper concludes with a case study that applies these principles to a specific project that is located in Cotnari, Iași. The findings offer a comprehensive guide for landscape designers, and cultural heritage specialists seeking to preserve and revitalize spaces that embody the rich aesthetic and historical values of the Neoromanian style.

09:05-09:10

OBSERVATIONS REGARDING THE VEGETATIVE MULTIPLICATION METHODS OF *CUPRESSOCYPARIS LEYLANDII DALLIM*., IN IAŞI COUNTY CONDITIONS

Roberto Renato Bernardis, Cristina Zlati, Tatiana Sandu, Roxana Paşcu, Daniela Poşta
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
"Regele Mihai I" University of Life Sciences, Timişoara

Among the multitude of conifers found in green spaces, *Cupressus* genus is used more often. Species within the genus *Cupressus* are of particular importance in landscape design, especially in the conditions of our country, which are generally favorable to very favorable. The purpose of the

paper is to highlight the potential for breeding through cuttings at the most known and used specie, namely *Cupressocyparis leylandii Dallim*. Observations were made regarding the optimal timing for the cuttings, determining the influence of the culture substrate on the cuttings and establishing the influence of the rhizogenous substance Radistim 2, on the cuttings that were subjected to treatment.

09:10-09:15

INCLUSION OF FRUIT SPECIES WITH HIGH ORNAMENTAL POTENTIAL IN LANDSCAPE DESIGN - CASE STUDY

Cristina Zlati, Roxana Pașcu, Ioana Buțerchi
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The research aims to integrate fruit species with high ornamental value into landscape design because this concept represents an increasingly appreciated approach that combines aesthetics, functionality and sustainability, also accessing resources regarding the marketing of these fruits, which have a high nutritional potential and an attractive taste. This practice transforms green spaces into productive environments, contributing to local food security, increasing biodiversity and improving the quality of life. Research in this area is crucial to optimize the benefits and overcome the challenges associated with this initiative. The theme addresses the visual perception of the public and the potential to create interesting landscape structures through the shape, color of flowers and fruits, as well as how these plants contribute to the creation of shade areas, spatial delimitation and attraction for local fauna.

09:15-09:20

PROPOSAL FOR THE LANDSCAPING OF THE MUNICIPAL SWIMMING POOL IN IAȘI

Codrina Grecu, Elena Loredana Popescu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The city of Iași has undergone remarkable urban development over the last 15-20 years, especially with the contribution of private investments in the construction of mixed-use commercial and office complexes. In this regard, we mention the construction of the Palas complex on the site of the former municipal swimming pool, which had previously been relocated and inaugurated in 2007, in the Mircea cel Bătrân neighborhood on a vacant lot at the confluence of the Nicolina and Bahlui rivers. The new location of the municipal swimming pool in Iași is the subject of the redevelopment proposal presented in this paper, following the study carried out as part of the co-author's Bachelor's Degree Project. The location suffered from a lack of playgrounds for children, public dining areas with terraces and shaded areas, and the need to reorganize the changing rooms, parking lots, and landscaped green areas. The aim was to improve the functionality of the space and the aesthetic appearance of the entire area in order to attract a larger number of visitors.

09:20-09:25

ALLELOPATHIC POTENTIAL OF ESSENTIAL OILS, AND AQUEOUS AND ETHANOLIC EXTRACTS FROM FIVE SPECIES OF ARTEMISIA SPP.

Crăița-Maria Roșu, Bianca Ivănescu, Ligia Angela Acatrinei și Gabriela Vochița
NIRDBS-Institute of Biological Research Iasi, Romania
"Grigore T. Popa" University of Medicine and Pharmacy, Romania

In allelopathic weed control, only a few of allelochemicals have been actively utilized. The present study focused on in vitro evaluation of the allelopathic potential of phytoextracts and essential oils (EOs) of *Artemisia lancea* Vaniot, *A. argyi* H.Lev. & Vaniot, *A. lavandulifolia* DC., *Artemisia absinthium L.* and *A. annua L.* on seed germination, early seedling growth and cytotoxicity of

Amaranthus retroflexus L. and *Chenopodium album L.* (problematic weeds in the vegetable crop). After the treatments, performed in Petri dishes, the evaluation of the efficiency of bioproducts (% of control) as pre-emergent herbicides highlighted that the oils of *A. argyi, A. lavandulifolia* and *A. lancea* (at 0.006 – 0.012 %), as well as ethanolic extracts (at 0.1 – 1.0 %), and respectively, aqueous extracts (at 1.0 – 2.0 %) of all *Artemisia* species exhibited maximum inhibitory activity on seed germination and seedling length of *Amaranhus retroflexus* and *Chenopodium album* at the specified concentrations. The main cytogenetic parameters investigated, namely, mitotic index, division phase frequency and chromosomal aberration rate in root meristems of *Amaranthus retroflexus* and *Chenopodium album*, revealed that the genotoxic action of the bioproducts is chemotype and dose-dependent, in the early ontogenetic development stages of the two tested plant species. This result recommends the obtained bioproducts to be used for sustainable weed management.
Funding: - 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-PED2019-00091, within PNCDI III, and, partially, by Core Project BIORESGREEN, subproject BioProtect no. 7/30.12.2022, code 23020402.

09:25-09:30

ICHNEUMON WASPS FROM NATURA 2000 PROTECTED SITES MÂRZEȘTI AND BÂRCA GRASSLANDS (IAȘI COUNTY, ROMANIA)

Camil Ștefan Lungu-Constantineanu, Tatiana Blaga
Department of Experimental and Applied Biology, NIRDBS-Institute of Biological Research Iasi, Romania
National Institute for Research and Development in Forestry, Voluntari, Ilfov, Romania

The evaluation of the entomofauna biodiversity in Natura 2000 protected sites was carried out in the Mârzești and Bârca meadows, collecting samples from the protected areas and their buffer zone. 279 arthropods (araneids and insects) were collected, belonging to the following orders: *Aranea, Collembola, Orthoptera, Thysanoptera, Heteroptera, Homoptera, Coleoptera, Lepidoptera Diptera and Hymenoptera*. The presence of the *Collembola, Thysanoptera* and *Hemiptera* orders, especially in Mârzești, is explained by the fact that it is a protected site, but intensive grazing is practiced. 10 specimens of ichneumonids were collected, from 9 genera: *Barylypa pallida, Cryptus viduatorius, Diplazon laetatorius, Promethes sulcator, Barichneumon albicaudatus, Colpotrochia cincta, Acropimpla pictipes, Itoplectis alternans* and *Pimpla turionellae*, belonging to the subfamilies: *Anomaloninae, Cryptinae, Diplazontinae, Ichneumoninae, Metopiinae* and *Pimplinae*. We establish the existence of a host-parasitoid relationship in the Bârca-buffer zone. *Acropimpla pictipes* (Grav.) is hosted by the defoliator *Anacampsis populella Cl.* (*Gelechiidae, Lepidoptera*), whose larvae feed on *Populus* and *Salix* leaves, found in neighboring habitats.
Fundings - This work was supported by the Core-Program, within the National Plan for Research, Development and Innovation 2022-2027, developed with the support of the Romanian Ministry of Research, Innovation and Digitalization project, 7N/23020402/2023.

09:30-09:35

RESEARCH ON THE GRAFTING AFFINITY OF VARIETY FOR TINCTORIAL RED WINES 'MĂGURA' ON ROOTSTOCKS WITH DROUGHT RESISTANCE

Ionica Bosoi, Marioara Puşcalău, Camelia Alina Dîrloman
Research and Development Station for Viticulture and Oenology Odobesti

The phenomen of global warming has considerably influenced the evolution of the thermal and water regime annually and during the growing season in the viticultural ecosystem of the Odobeşti vineyard, the atmospheric and pedological drought characterizing the last five years of viticulture. In this context, the use of drought-resistant rootstocks for grafting is one of the solutions to counteract

this extreme phenomenon. The present paper presents preliminary results regarding the grafting affinity of the 'Măgura' grape variety for tinctorial red wines created at RDSVO Odobești, on three rootstocks with drought tolerance obtained in the Romanian viticultural research (Drăgășani 70). M.', 'Crăciunel 71 Bl.', 'Ruggeri 140 Vl.'). The rootstock 'Berlandieri x Riparia Sel.Oppenheim 4 –4 Bl.', was taken into the study as a control. The obtained results show a very good grafting affinity of the 'Măgura' variety on the 'Ruggeri 140 Vl.' rootstock.

09:35-09:40

THE ROMANIAN VITIS DATABASE: AN INFORMATIVE, MULTIMEDIA WEB-BASED PLATFORM FOR MANAGING GRAPEVINE GENETIC RESOURCES IN ROMANIA

Steliana Paula Barbu, Alexandra Daniela Bucur, Răzvan Vasile Filimon, Ștefan Traian Cosma, Ionica Bosoi, Andreea Manolescu, Liliana Rotaru, Monica Hârța, Marinela Vicuța Stroe

Research and Development Institute for Viticulture and Enology Valea Călugărească, Romania
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Research and Development Station for Viticulture and Enology Odobești, Romania
National Research and Development Institute for Biotechnology in Horticulture Stefanesti, Romania
"Ion Ionescu de la Brad" University of Life Sciences Iasi, Romania
University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania
University of Agricultural Sciences and Veterinary Medicine of Bucharest, Romania

Due to its geographic location and geological features, Romania has a rich history of grape cultivation and displays significant biodiversity, which is evident at both the ecosystem and species levels. Efficiently managing grapevine germplasm collections involves maintaining a database that records each country's viticultural heritage and complete descriptions based on relevant indicators. This strategy aims to effectively utilize biological material in breeding activities, ensure high-quality biological material for new vineyard plantations, and protect rare genotypes at risk of extinction. A complex characterization based on ampelographic, technological, and agrobiological descriptors, as well as SSR molecular marker genetic profiles, allows for the accurate fingerprinting of the cultivar and eliminates uncertainties caused by synonymy and homonymy. In this context, the Romanian Vitis Database will serve as a valuable source of information, accessible both nationally and internationally. It aims to effectively manage, protect, and utilize grapevine genetic resources in Romanian ampelographic collections as a legacy for future generations.

09:40-09:45

EVALUATION OF THE IMPACT OF MAJOR CLIMATIC FACTORS ON THE AGROBIOLOGICAL AND TECHNOLOGICAL POTENTIAL OF TABLE GRAPE VARIETIES CULTIVATED IN THE COPOU IAȘI VITICULTURAL CENTER

Ancuța Nechita, Gabi Zaldea, Lulu Cătălin Alexandru, Roxana Filimon, Răzvan Filimon

Viticulture and Oenology Research and Development Station in Iasi, Romania

The varied climatic conditions during the period 2015–2024 enabled the analysis of the performance of several table grape genotypes representative of the Iași vineyard, with regard to the cumulative effect of environmental stress factors on their agrobiological and technological traits. Under the influence of climatic factors whose levels have been altered by global warming, the studied varieties and clones (Gelu, Paula, Mara, Victoria and Chasselas doré 20 Is) exhibited different responses, with their agrobiological and technological characteristics being affected both

quantitatively and qualitatively. From the perspective of technological potential achieved in years with different climatic conditions (dry, normal and rainy years), the results confirmed both the productive capacity and the climatic suitability of the Copou Iași viticultural center for the cultivation of table grape varieties.

09:45-09:50

ASPECTS REGARDING THE ECONOMIC EFFICIENCY OF DIFFERENT SOIL MAINTENANCE SYSTEMS IN VINEYARDS

Gabi Zaldea, Ancuța Nechita, Lulu Cătălin Alexandru, Roxana Filimon, Răzvan Filimon
Viticulture and Oenology Research and Development Station in Iasi, Romania

The vine-growing technologies in the vineyards of the country's north-eastern region are established differentially, according to ecopedoclimatic conditions, with specific technological practices applied depending on the area and the cultivated varieties. The implementation at SCDVV Iași of innovative technological practices aimed at reducing energy consumption, lowering pollutant emissions, and preserving soil structure for the promotion of sustainable agriculture involved testing four soil maintenance systems in the inter-row spaces: V1 – conventional system – bare fallow; V2 – conservation system – partial mulching of the inter-row with fermented grape marc mulch; V3 – conservation system – mulching with plant materials (perennial grasses); V4 – conservation system – minimum and shallow soil tillage. The analysis of manual and mechanical labor requirements, along with the inputs applied, allowed the assessment of the economic efficiency of different soil maintenance systems, highlighting their advantages and drawbacks under specific conditions. The results obtained highlight that the highest economic efficiency was recorded in variant V4, with a profitability rate of 44%, compared to only 8% in variant V1. Similar values were also achieved in variants V3 and V2, with profitability rates of 34% and 28%, respectively.

09:50-09:55

ASSESSMENT OF THE PHENOTYPIC DIVERSITY OF *PRUNUS CERASIFERA* IN NATURAL AND ANTHROPIZED ECOSYSTEMS

Corina Gavat, Silvia Nicolae, Gheorghe Lămureanu, Liliana Miron, Irina Moise
Research Station for Fruit Growing Constanta, Valu lui Traian, Constanta, Romania
Research Institute for Fruit Growing Pitești-Mărăcineni, Mărăcineni, Pitești, Romania
Ovidius University from Constanța, Romania

The cherry plum (*Prunus cerasifera*), is a small deciduous tree native to south-east Europe and western Asia. It is growing spontaneously throughout Romania and can be found in a wide range of environments, due to its high adaptability to different ecological conditions and consistent fruit production. It has a considerable genetic variability. Cherry plum is used both as a rootstock for apricot, plum and peach trees, and for its fruits, which can be processed into compote, alcoholic beverages, and other products. At the Research Station for Fruit Growing Constanța (RSFG Constanța) and the at Fruit Growing Research and Development Institute Pitești-Mărăcineni (RIFG Pitești-Mărăcineni), 70 biotypes of cherry plum were analysed in order to conserve genetic diversity and support breeding programs for stone fruits by identifying the most valuable specimens. The study included plants on their own roots as well as grafted selections maintained in rootstock ex-situ collections. These biotypes were described based on their habit and vigour, plant health status, and fruit samples were collected. The fruits were analysed for size and weight, skin colour, flesh characteristics, aroma, dry matter content, number of stone per kilogram, and harvest date. Depending on the genotype, fruit ripening occurred over a two-month period, in July to beginning of September. The analysed trees showed resistance to prolonged drought and specific diseases; most of the studied biotypes were spiny. Fruit shape varied from spherical and flattened-spherical to elongated ovoid,

with weights ranging from 5.2 g to 24.6 g. Most fruit samples showed a high dry matter content, over 15° Brix, and were classified as sweet or very sweet. The selections on their own roots that stood out will be grafted and planted in the national collections of the two institutions to be used as genetic resources in breeding programs.

09:55-10:00

BEHAVIOUR OF SOME APPLE VARIETIES IN THE SUCEAVA DISTRICT COUNTY CONDITIONS

Marius C-tin Dascalu, Mihai Istrate, Cristina Zlati, Roberto Bernardis, Daniel Tatarcan
"Ion Ionescu de la Brad" University of Life Sciences Iasi, Romania

Suceava County is representative for apple cultivation in Romania. The present work aims to study the behavior of some apple varieties cultivated within S.C. Alma Viva Groupe S.R.L. in Suceava County, Vulturești commune, addressing both the biological and ecological aspects of the species and the impact of modern cultivation technologies on fruit production and quality. The comparative study of the behavior of several old and new varieties: Golden Delicious, Starkrimson, Gala, Fuji and Pinova — provides essential information for identifying the most advantageous variety-rootstock combinations, adapted to the climatic and ecological specifics of the study area.

10:00-10:05

THE EFFECTS OF DEFOLIATION CAUSED BY *STEREONYCHUS FRAXINI L.* BEETLES ON THE RADIAL GROWTHS IN FOREST ASH STANDS IN THE EAST OF ROMANIA

Tatiana Blaga, Camil Stefan Lungu-Constantineanu, Mădălina- Elena Blaga
National Institute for Research and Development in Forestry (INCDS) " Marin Drăcea", Câmpulung Moldovenesc Station, Romania
Biological Research Institute of Iasi, Romania
Bacau Forest Directorate, Fântânele Forestry District, Romania

In the last few years the ash tree stands were more and more affected, which imposed an even more careful preoccupation which concerns the prevention and combat of the ash trees defoliation.

A very important role in the study and prognosis of the species is the biological and ecological knowledge. The numeric values of all the Stereonychus species population are determined by a series of ecological, abiotic, natural and antropical factors. The appearance of mass multiplication of a primary defoliator - *Stereonychus fraxini L.*- in the past years, which caused injuries of economic importance, imposed measures of knowledge of pest biology in order to supervise and even combat it (Simionescu, A., Mihalciuc, V., Tulbure, C., Chira, D., Ciornei, C. și al., 2012).

The research aimed at understanding the influence of defoliation caused by the Stereonychus fraxini L. beetles on the growth and vitality of forest stands with ash trees in their composition or ash forest stands. In the field, the network with permanent control surfaces has materialized, and also had done observation and measurements, and from there, were periodically harvested through the vegetation season for all various stages of insect development, biological material for laboratory analysis. Defoliation causes a sensible reduction in growth of trees in forest stands. Complete, unrepeatable defoliation has important consequences on tree vitality, especially in the case of early defoliation, causing a 50-70% reduction in the vegetative mass compared to the witness trees unaffected by defoliation; the effect of defoliation manifests differently, depending on the age of the stands, being more pronounced in young stands than in older ones; repeated defoliation within the same year causes partial or total drying of the trees towards the end of the vegetation season (Blaga,

2010). Prevention of defoliation is possible through pest control methods. Pest control treatments manage to prevent defoliation and to put an end to mass multiplication of insects.

10:05-10:10

THE INFLUENCE OF CLIMATE CHANGE ON THE DRYING OF FIR TREE IN THE ROZNOV-NEAMT AREA

Tatiana Blaga, Romeo Busnatu, Camil Ștefan Lungu-Constantineanu, Mădălina – Elena Blaga

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Institute of Biological Research, Iași branch of NIRBDS, Romania
Forestry Directorate Bacău– Forestry District Fântânele

In recent years, the climate change at global and national levels, an alarming increase in the phenomenon of drying of coniferous trees, especially fir trees, has been observed. The attack of ipides that is found in fir stands is a secondary attack that occurs following the physiological weakening of the trees and their drying as a result of the lack of precipitation and high temperatures. The entire eastern range of the Eastern Carpathians is vulnerable to the phenomenon of drying of fir trees, especially the stands located at altitudes below 800-1000 m and with S, S-E or S-Western exposures, where the precipitation level is low and the temperatures are quite high, the mountains themselves constituting a barrier for the precipitation coming from the western area. As an urgent measure to stop the phenomenon, the urgent valorization of the already affected wood mass and its exploitation. Also, greater attention will be given to the choice of trees to be extracted, and trees that are lanceolate, attacked by mistletoe, fungi, etc. should also be extracted. In regeneration compositions in mountainous areas with low altitude or sunny exposures, deciduous species or species with greater resistance to drought conditions and thermal stress should be promoted.

10:10-10:15

INTEGRATIVE CHEMO-MORPHOLOGICAL AND MINERAL ANALYSIS OF ROMANIAN JUJUBE (*ZIZIPHUS JUJUBA* MILL.) GENOTYPES

Ioan Stoli

Research Station for Fruit Growing Constanta, Romania

Knowledge of valuable Romanian jujube (*Ziziphus jujuba Mill*.) genotypes is fragmented across separate morphological and biochemical studies. This integrative analysis uses Pearson correlations and PCA on twelve genotypes to link their physical, chemical, and mineral traits.

A strong negative correlation was found between fruit size and bioactive compound concentration. The difference between genotypes was clear. ‘Mahmudia 2’ produced small fruits packed with polyphenols, while the large fruits from ‘Ostrov’ had much lower levels. The fruit's location also mattered, as higher lead and cadmium were found in genotypes originating from Danube sites. The integrated data defined chemo-morphological rootstock “ideotypes”: ‘Jurilovca III 1’ for quality (sugars, calcium) and ‘Mahmudia 2’ for resilience (polyphenols). This work provides a data-driven framework for strategic breeding and highlights the nutraceutical value of small-fruited genotypes.

10:15-10:20

THE POTENTIAL FOR INCREASE IN THE QUANTITY AND QUALITY OF SEEDS IN SOLANO-FRUITFUL VEGETABLES

Mihaela-Alina Buzatu, Delia–Cristina Constantin, Gicuța Sbîrciog, Ileana Costache
Research and Development Institute for Vegetable and Flower Growing Vidra, Romania

A quality planting material has a strong influence on the success of vegetable crop. This paper presents a state of arts regarding some possibilities of improving the quantity and quality of seeds in the main solanaceous vegetables, tomatoes, pepper and eggplant. Seed production technology can be optimized by modern approaches. Soil mulching or the use of foliar treatments with calcium nitrate and biostimulants can determine the yield of seed with superior quality characteristics.

10:20-10:25

TOMATO AND THE ROLE OF VERMICOMPOST IN ENHANCING YIELD AND FRUIT QUALITY – PERSPECTIVES FOR SUSTAINABLE HORTICULTURE

Florin Roșca, Iuliana Roșca, Alexandru Cojocaru, Neculai Munteanu, Gabriel-Ciprian Teliban, Vasile Stoleru
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Tomatoes (Solanum lycopersicum L.) are among the most important vegetable crops worldwide, both economically and nutritionally. Increasing pressure on abiotic factors and the environment calls for alternatives to chemical fertilizers that can sustain productivity while reducing negative impacts on soils. Vermicompost, a product derived from earthworm activity on organic matter, provides a complex source of nutrients, phytohormones, and beneficial microorganisms. Evidence from the scientific literature highlights the positive effects of vermicompost application on yield, fruit quality, and soil biochemical properties in tomato cultivation. Reported results show significant improvements in the number of fruits per cluster, firmness, and dry matter content compared to conventional fertilization. Furthermore, vermicompost use contributes to restoring the soil's microbial balance, supporting a more resilient and sustainable cropping system.

10:25-10:30

PHASEOLUS BEAN IN ROMANIA

Iuliana-Andreea Răileanu (Roșca), Neculai Munteanu, Florin-Ionuț Roșca, Vasile Stoleru
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The common bean (*Phaseolus vulgaris L.*) is one of the most important legume species cultivated worldwide and in Romania. Due to its high protein content (22% in dry beans, 20% in pods), carbohydrates (57%) and fiber, beans constitute an accessible source of essential nutrients, being at the same time a valuable crop due to its ability to fix atmospheric nitrogen. Globally, it is cultivated on areas of over 30 million ha, with an annual production of approximately 20 million tons, in Romania, in recent decades, the average cultivated area was 53.000 ha for beans for dry beans and 15.000 ha for beans for green pods. National research activity, which began after 1920 and developed after 1950, focused on genetics, breeding, cultivation technologies and plant protection. The biodiversity of the species experienced a significant reduction after the 1950s, but numerous local populations and valuable varieties were maintained in family farms and research collections. This paper presents the nutritional, economic and agronomic importance of common bean, its current situation in Romania, the main limiting factors and the contributions of scientific research to the diversification and valorization of genetic resources, with an emphasis on the role of breeding in the development of highperformance varieties adapted to current market requirements.

10:30-10:35

TRENDS IN MICROGREENS CULTIVATION TECHNOLOGY: FROM TRADITIONAL TO HIGH-TECH SYSTEMS

Adrian Bostan, Gabriel-Ciprian Teliban, Alexandru Cojocaru, Neculai Munteanu, Vasile Stoleru
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Microgreens represent a category of horticultural products with high nutritional value and significant potential for diversifying the human diet. Over the past two decades, interest in these young plants has grown exponentially in both scientific and economic fields, stimulating research on optimizing production technologies. This article provides a narrative analysis of the main trends and innovations in microgreens cultivation, from traditional soil-based methods to hydroponic, aeroponic, and vertical farming systems with LED lighting. It discusses substrates, seeding density, light and temperature regimes, and their impact on yield and biochemical quality. The article highlights the advantages and limitations of each method, emphasizing sustainability, energy efficiency, and food safety.

10:35-10:40

THE IMPORTANCE OF KNOWLEDGE AND MAINTENANCE OF THE QUALITY INDICES OF CLIMBING BEAN (PHASEOLUS VULGARIS L.) SEEDS

Lacrămioara Miron (Grigoraș), Teodor Stan, Neculai Munteanu, Gabriel-Ciprian Teliban, Vasile Stoleru
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The climbing bean (*Phaseolus vulgaris L.*) is a legume belonging to the *Fabaceae* family with a remarkable nutritional content in proteins, dietary fiber, vitamins, essential amino acids, and minerals. In addition to its nutritional importance, it plays a crucial role in sustainable agriculture, as it possesses a unique ability to fix atmospheric nitrogen through its symbiotic relationship with nitrogen-fixing bacteria, thereby supporting soil fertility. Obtaining high-quality seeds and maintaining their quality indices until the crop is established are essential, as the performance of the newly established crop and the achievement of uniform and profitable yields depend on them.

In this context, this study aimed to analyze the influence of different agricultural technologies applied to climbing bean crops, as well as storage conditions and methods, on seed quality indicators. The focus was particularly on identifying the best conservation practices to ensure the long-term maintenance of biological, physiological, and commercial quality.

10:40-10:45

RESEARCH ON THE USE OF FERTILIZATION ON WHITE CABBAGE CROPS IN ORGANIC FARMING

Mihaela Zaharia (Rogojină), Carmen-Maria Stoleru, Beatrice Tănase, Vasile Stoleru
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania
Technologic College V. Madgearu Iasi, Romania

In addition to ensuring sufficient quantities of water, heat, and light, it is also imperative to provide nutrients that are readily available for use by plants. Organic fertilizers are most often obtained from animal by-products that undergo decomposition or fermentation processes. Depending on the origin of these animal by-products, the nitrogen, phosphorus, and potassium content varies. Since excess minerals become toxic to plants, fertilization of agricultural soils must take into account soil composition and previous soil improvement work. Fertilizing cabbage crops with organic and chemical fertilizers had different effects, depending on the cultivar used and the type of mulching. Cabbage head yields varied considerably in some cases and insignificantly in others for both types of

fertilization. However, heads obtained from organically fertilized plants have more pronounced organoleptic characteristics than those fertilized chemically.

10:45-10:50

STUDY REGARDING QUALITY TRAITS OF FRUITS IN CHERRY CULTIVARS (*PRUNUS AVIUM* L.) UNDER THE CONDITIONS OF THE NE AREA OF ROMANIA

Elena Iurea, Iulia Mineață, Sorina Sîrbu, Mădălina Gherghel, Iuliana Golache, Cristina Turcu, Ionuț Ungureanu, Ionel Perju, Simona Chelaru
Research and Development Station for Fruit Trees, Iasi, Romania

The paper introduces the valuable traits of the fruits in local and international cherry cultivars under the conditions of 2021 – 2024, cultivars suitable for both fresh consumption and for processing. Considering the fruit weight (g) and its equatorial diameter (mm) as averaged across four years of study, cultivars Ludovan (9.76 g and 27.25 mm), Cociuvaş (9.70 g and 27.11 mm), Andreiaş (9.20 g and 25.87 mm), Miris (7.92 g and 25.01 mm) and Van (7.90 g and 25.05 mm) stood out statistically, showing significantly higher differences. In terms of stone size, the cultivars recorded a weight between 0.26 g (Miris) and 0.35 g (Andreiaş). The dry substance content was between 14.7 °Brix (Scorospelka) and 19.86 °Brix (Margonia), while the values for the total content of polyphenols were between 299.17 mg GAE 100 mL-1 (Scorospelka) and 482.35 mg GAE 100 mL-1 (Cociuvaş). As for the resistance of the fruits to cracking, all the studied cultivars showed good resistance, with recorded values under 19%, except for cultivar Van (43.9%).

10:50-10:55

THE INFLUENCE OF THE APPLICATION OF ECO-SCHEMES REGARDING PERMANENT CROPS IN CHERRY PLANTATIONS ON BIODIVERSITY AND ENVIRONMENTAL IMPACT

Simona Mihaela Chelaru, Cristina Ionela Turcu, Agurița Aftudor Manolache, Ionel Perju, Sorina Sîrbu, Elena Iurea
Research Station for Fruit Growing Iasi, Romania

The observations were carried out during 2024–2025 in the experimental cherry lot on the territory of Research Station for Fruit Growing Iasi, located in Miroslava, with the objective of evaluating the impact of eco-schemes and technological variants applied in cherry plantations on biodiversity and the reduction of external inputs. Four experimental variants (mechanical feeler, herbicide, repellent plants, biodegradable mulch) were compared in terms of the degree of attack by pathogens and pests. The results show that the variant with repellent plants (*Allium sativum, Tagetes spp., Lavandula officinalis, Ocimum basilicum, Satureja hortensis*) had the best efficiency in reducing the pressure of pathogen and pest attack, constituting a viable ecological alternative for the integrated management of fruit plantations.

10:55-11:00

RESEARCH ON THE BIOLOGY OF THE SPECIES *LASPEYRESIA POMONELLA L.* IN THE NORTH-EAST AREA OF ROMANIA

Cristina Ionela Turcu, Mihai Tălmaciu, Simona Mihaela Chelaru, Agurița Aftudor Manolache, Ionel Perju, Sorina Sîrbu, Elena Iurea
Research Station for Fruit Growing Iasi, Romania

The research was carried out at the Research Station for Fruit Growing Iasi, during 2021–2022, with the objective of correlating climatic conditions with the biological dynamics of pests of the Laspeyresia Pomonella L. species in apple orchards. The year 2021 was characterized by an average

annual temperature of 10.1°C (below the multiannual average of 11.0°C) and a precipitation amount of 563.6 mm, close to normal, but with an uneven distribution. In contrast, the year 2022 was more hostile, with an average temperature of 11.3°C, a maximum of 37.0°C and only 379.0 mm of precipitation, marking a deficit of -182.6 mm and causing severe water stress. Late spring frosts (down to -6.0°C in April 2022) affected the phenophases of apple and influenced the evolution of insect populations. Based on the accumulation of thermal degrees, two complete generations of pests were confirmed in both years. The first generation was triggered in April, with the emergence of adults, followed by egg laying and larval hatching in May (Σ≈200–270°C), pupation in June (Σ≈600–660°C) and adult maturation. The second generation took place in July–August (Σ≈1400–1500°C), and the mature larvae entered diapause in September–October (Σ≈1700°C). In conclusion, the data show that climatic variations (late frosts, droughts and excessively hot summers) influenced both the phenology of the trees and the synchronization of the biological stages of the pests, highlighting the need for ecological control strategies adapted to climate change.

11:00-11:05

PRACTICAL ASPECTS OF THE BIOLOGY AND CONTROL OF THE MAIN INSECT PESTS OF PLUM FRUITS TO INCREASE THE COMPETITIVENESS OF FRESH PLUM FRUITS

Sergiu Panuța, Nichita Croitoru, Andrei Zbancă, Mihai Tălmaciu
Technical University of Moldova, Chisinau, Republic of Moldova
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The Republic of Moldova implements and continues to improve the scheme of rational specialization of natural and economic zones for the cultivation of certain groups of fruit crops, including plum orchards. The production of commercial, high-quality fruits largely depends on a well-organized plum protection system against a complex of harmful organisms. Of the range of pests that cause damage of economic importance in plum plantations, the plum sawflies, plum eurytoma and plum fruit moth have exceeded the economic damage threshold. The most effective insecticide was acetamiprid, 200 g/L with application rate of 0.35 L/ha + 1.0 L/ha (SAS), which reduced the number of fruits damaged by plum sawflies by 91.54 - 93.28%, plum eurytoma by 96.05% and plum fruit moth by 93.64 - 92.89%. Research based on testing and evaluation of results allowed the group of authors to develop a budget of income and expenses for plum cultivation and analyze the economic efficiency per hectare of orchard.

11:05-11:10

IMPROVING THE EFFICIENCY OF PEAS PROTECTION AND IMPROVING THE COMPETITIVENESS OF ITS PRODUCTION

Sergiu Panuța, Nichita Croitoru, Andrei Zbancă, Mihai Tălmaciu
Technical University of Moldova, Chisinau, Republic of Moldova
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Annual leguminous crops, and peas in particular, are of great economic importance, used both as food for humans and for feed of farm animals. Pea crops are often damaged by various pests, the most dangerous of which are *Acyrthosiphon pisum Harr., Kakothrips robustus Uzel, Sitona lineatus L., Sitona crinitus Hrbst., Bruchus pisorum L., Cydia nigricana Fabr*., and *Ceramica pisi L.*

To more effectively utilize this crop, additional research is needed on cultivation technology, including the use of various chemical plant protection products. In the fight against the main pests of peas, the most effective is the insecticide INS-1 SC with application rate of 0.15 l/ha, which provides a reduction in the number of green pea louse by 98.89–92.91%, and pea beetle by 98.94–92.46%, within 7–12 days after treatment.

The authors analyzed, based on the income and expenditure budget, what the level of competitiveness is and how it can be optimized.

11:10-11:15

BIODIVERSITY AND DYNAMICS OF HARMFUL INSECTS IN RASPBERRY CROPS DURING THE 2024 AGRICULTURAL YEAR, UNDER THE ECOLOGICAL CONDITIONS OF THE EASTERN CARPATHIANS

Marinela Bădeanu, Irina Cebonaș, Tatiana Sandu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

In the context of increasing pest pressure on mountain horticultural crops, this study aims to evaluate the biodiversity and population dynamics of harmful insects in raspberry (Rubus idaeus) crops during the 2024 agricultural year, under the specific ecological conditions of the Eastern Carpathians. The research was carried out in two commercial plantations located in Suceava and Neamț counties, using standard entomological sampling methods: chromotropic traps, pheromone traps, visual observations, and plant material sampling. Throughout the growing season, 12 harmful insect species were identified, the most common being *Byturus tomentosus, Drosophila suzukii, Amphorophora agathonica*, and *Aphis idaei*. A significant correlation was observed between climatic conditions (temperature and humidity) and the population dynamics of the pests, particularly during the months of May to July. Altitude and plantation exposure were also found to influence the structure of entomological communities and the level of infestation.

The results contribute to a better understanding of current phytosanitary risks and can serve as a basis for the development of effective integrated pest management strategies, tailored to the ecological conditions of the mountainous area of the Eastern Carpathians.

11:15-11:20

INVASIVE INSECTS IN RASPBERRY (*RUBUS IDAEUS*) CULTIVATION DURING THE 2024 AGRICULTURAL YEAR: OCCURRENCE, IMPACT, AND CONTROL PERSPECTIVES

Marinela Bădeanu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The increasing frequency and intensity of biological invasions represent a major challenge for horticultural crops in Romania, especially in the context of climate change. This study analyzes the presence and evolution of invasive insect species in raspberry (*Rubus idaeus*) plantations during the 2024 agricultural year, with a focus on their phytosanitary and economic impact. The research was conducted in commercial plantations located in the Suceava and Neamț regions, using monitoring methods such as pheromone traps, chromotropic traps, and direct field observations.

The most significant invasive species identified was *Drosophila suzukii* (spotted wing drosophila), which was present in all monitored locations and showed prolonged activity from May through September. Other species exhibiting invasive behavior included *Halyomorpha halys* (brown marmorated stink bug) and Spotted Lanternfly (*Lycorma delicatula* – suspected, pending confirmation). These pests negatively affected both fruit quality and the vegetative development of the plants.

The results indicate an urgent need to adapt monitoring and control strategies, with a focus on ecological methods and preventive interventions, in order to limit the spread of these pests in raspberry cultivation areas in Romania.

11:20-11:25

STRUCTURE, DYNAMICS AND ABUNDANCE OF ARTHROPOD SPECIES IN SOME PEAS CROPPINGS

Răducu Ionuț Balint, Monica Herea, Nela Tălmaciu, Ionela Mocanu, Liviu Adrian Prisacaru, Sergiu Panuță, Mihai Tălmaciu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
Technical University of Moldova, Chisinau, Republic of Moldova

The observations were carried out in 2024, in a pea crop (*Pisum sativum L.*) located in the Răducăneni area, Iași county. For this purpose, Barber-type traps were used, placed uniformly inside the experimental plot. The traps operated during the May–August period, covering the entire vegetation cycle of the crop.

The collection of arthropods was carried out periodically, with a total of six collections being carried out, at intervals of 10–15 days. The entomological material obtained was transported to the laboratory, where the specimens were sorted, preserved and determined to the species level, with the help of specialized works.

The faunal analysis revealed the presence of a varied number of species, of which the most frequently collected were: *Coccinella septempunctata L., Dermestes laniarius Illiger, Opatrum sabulosum L., Phalangium opilio L., Sitona lineatus L., Pedius femoralis L.* etc. They belong to different ecological groups (phytophagous, predatory, detritivores), reflecting a diversified structure of the entomofauna associated with pea cultivation.

The concomitant presence of harmful and beneficial species suggests the existence of a relatively stable trophic balance within the studied agroecosystem. The results obtained contribute to a better understanding of the dynamics of arthropod communities in legume crops and may constitute a starting point for the development of sustainable plant protection strategies.

11:25-11:30

RESEARCH ON THE ENTOMOFAUNA OF EPIGEAL COLEOPTERA COLLECTED FROM SOME VINEYARD PLANTATIONS

Catalin Toader, Monica Herea, Nela Tălmaciu, Liviu Adrian Prisacaru, Ionela Mocanu, Lulu Catalin Alexandru, Sergiu Panuță, Mihai Tălmaciu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
Viticulture and Oenology Research and Development Station in Iasi, Romania
Technical University of Moldova, Chisinau, Republic of Moldova

The material was collected using Barber-type soil traps in the vineyard plantations of the Odobesti vineyard, Vrancea county. A 2,5% NaCl solution was placed inside the traps. The traps were placed in the plantation from June to August, in 2023, a total of 7 collections were made at intervals of 6 and 12 days. The material thus collected was brought to the laboratory, cleaned of plant debris, soil, etc., and only epigeal beetle species were then selected. The most frequently collected species were: Anisodactylus signatus, Dermestes laniarius, Ectobius lapponicus, Harpalus calceatus, Necrophorus vespillo, Ontophagus ovatus, Opatrum sabulosum, Anysodactylus binotatus.

In this research, two variants were used, the variant with chemical treatments and the variant without chemical treatments, each variant using 12 traps. In total, in the variant without treatments, 629 specimens of coleoptera belonging to 31 species were collected. In the variant with chemical treatments, a total of 95 specimens were collected, belonging to 22 species.

11:30-11:35

OBSERVATIONS ON THE EXISTING ENTOMOFAUNA IN SOME VEGETABLE CROPS FROM THE MATCA AREA, GALATI COUNTY

Florica Radu, Monica Herea, Nela Talmaciu, Ionela Mocanu, Mihai Talmaciu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The material was collected using Barber soil traps in 2023 and 2024, during the month of August. The collections were carried out at three different times: at the beginning of August, in the middle of the month, and at the end of August, resulting in a total of three sampling sessions. A 2,5% NaCl solution was used inside the traps to kill and preserve the captured specimens.

The insect fauna collected includes representatives of several orders: *Coleoptera, Hymenoptera, Orthoptera, Heteroptera, Diptera,* and *Lepidoptera*. Specimens belonging to *Coleoptera, Orthoptera, Heteroptera*, and *Hymenoptera* were identified to the species level. The most abundant group was the *Hymenoptera* (ants), followed by the *Coleoptera*.

These results reflect both the diversity and relative dominance of soil-dwelling insect communities during the sampling period and provide a useful basis for future ecological analysis and comparison between the two consecutive years.

11:35-11:40

OBSERVATIONS ON ARTHROPOD SPECIES PRESENT IN WHEAT CROPS

Liviu-Adrian Prisacariu, Nela Tălmaciu, Monica Herea, Teodora- Otilia Hagiu, Mihai Tălmaciu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The observations were made in a wheat crop located within the Ezăreni Student Research and Practice Station belonging to the University of Life Sciences Ion Ionescu de la Brad in Iași.

The material was collected using Barber soil traps, entomological nets, Decis traps and through direct observations of the plants. The traps were installed from May to August, with periodic harvests being made at intervals of about 12-15 days.

The material collected from the field was labeled and in the laboratory it was cleaned of plant debris (leaves, soil particles, etc.), then it was preserved in a 40% ethyl alcohol solution. Later, the arthropod species were identified. The identification was made using taxonomic guides and the internet.

Among the arthropod species more frequently collected and with a relatively larger number were: *Oulema melanopa, Gryllus campestris, Formicomus pedestris, Idiochroma dorsalis, Opatrum sabulosum, Harpalus distinguendus, Meligethes aeneus, Phyllotreta nemorum, Psylliodes chrysocephala, Cantharis obscura, Entomobrya lanuginosa*, etc.

11:40-11:45

OBSERVATIONS ON ARTHROPOD SPECIES PRESENT IN RAPESEED CROPS

Liviu-Adrian Prisacariu, Nela Tălmaciu, Monica Herea, Teodora-Otilia Hagiu, Mihai Tălmaciu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The observations were made in a rapeseed crop located within the Ezăreni Student Research and Practice Station belonging to the University of Life Sciences Ion Ionescu dela Brad in Iași.

The material was collected using Barber soil traps, entomological nets, the "yellow bowl", as well as through direct observations of the plants throughout the growing season.

The traps were installed from May to August, with periodic harvests being made during 2025 at intervals of approximately 12-15 days. The identification was made using taxonomic guides and the internet.

The material collected from the field was labeled, cleaned of plant debris (leaves, soil particles, etc.), brought to the laboratory, preserved in 40% ethyl alcohol solution and then the arthropod species were identified. Specialized determiners and the Internet were used to determine the collected arthropods. Among the more common arthropod species were: *Anoplius viaticus, Anoplius nigerrimus, Dasyneura brassicae, Idiochroma dorsalis, Opatrum sabulosum, Harpalus distinguendus, Meligethes aeneus, Phyllotreta nemorum, Psylliodes chrysocephala Atomaria fimetarii*.

11:45-11:50

OBSERVATIONS ON EPIGEAL ARTHROPOD SPECIES OCCURRING IN SOME FRUIT TREE AND FOREST PLANTATIONS

Vasile Bârdan, Monica Herea, Nela Tălmaciu, Teodora-Otilia Hagiu, Liviu Adrian Prisacariu, Marinela Bădeanu, Sergiu Pănuță, Mihai Tălmaciu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
Technical University of Moldova, Chisinau, Republic of Moldova

The observations were made over the course of a single year, 2025, in an apple orchard and in a forest plantation containing both coniferous and deciduous species.

To collect arthropods, several types of traps were used, including Barber pitfall traps, Decis Traps, and yellow sticky traps. Direct observations were also performed on both fruit and forest trees.

Material collection and trap inspections were conducted during the vegetation period at intervals of approximately 14–17 days. The collections and trap inspections were carried out on the following dates: May 16, June 6, June 26, July 16, August 1, August 22, September 10, and September 24, 2025. The most abundant and most frequently collected species were: *Ptreostichus (Poecelus) cupreus, Silpha carinata, Gryllotalpa gryllotalpa, Armadillidium vulgare, Carabus coriaceus, Geotrupes vernalis, Necrophorus vespillo, Staphylinus caesareus, Agriotes ustulatus, Oiceoptoma thoracicum, Harpalus tardus, Aptinus bombarda, Dermestes laniarius, Carabus intricatus*.

11:50-11:55

THE INFLUENCE OF THE ROOTSTOCK AND CERTAIN TECHNOLOGICAL ELEMENTS ON THE PRODUCTION OF BRANCHED APPLE TREES

Valentin Gaberi, Ananie Peșteanu
Technical University of Moldova, Chișinău, Republic of Moldova

The object of the research was apple trees of the Gold Chief Gold Pink variety, grafted onto M26 and G202 rootstocks. The grafting method in field I was Chip beading grafting, with a planting distance of 80x35 cm. To intensify the formation of anticipated shoots, various technological procedures were used: V1. Free growth (c); V2. Treatment with Gerba 4 LG, 30 ml/l water + breaking of apical leaves; V3. Treatment with Gerba 4 LG, 30 + 30 ml/l water; V4. Treatment with Progerbalin LG, 30 ml/l water + breaking of apical leaves; V5. Treatment with Progerbalin LG, 30 + 30 ml/l water. It was established that the trees on the G202 rootstock had greater development than those on the M26 biotype. On both rootstocks, a higher degree of branching was obtained in the variants treated with Progerbalin (11-14 pieces) compared to Gerba 4LG (7-10 pieces). A higher number of branches on the M26 rootstock was obtained in variant V4 (12 pcs.), and on the G202 biotype in variant V5 (14 pcs.).

11:55-12:00

EFFECTIVENESS OF PRODUCTS THAT INHIBIT ETHYLENE SYNTHESIS IN THE APPLE FRUITS DURING THE POST HARVEST PERIOD

Ananie Pește anu
Technical University of Moldova, Chișinău, Republic of Moldova

To evaluate the effectiveness of treatment with the ethylene biosynthesis inhibitor 1-MCP during storage of the Gala Dark Baron variety, the following experimental scheme was developed: 1. Normal atmosphere (C), no treatment; 2. Fitomag, 0.44 g/m^3; 3. Grand Fresh, 60 g/m^3; 4. Grand Fresh, 68 g/m^3. The fruits of the control and treated variants were placed in room with a normal atmosphere (CO_2 - 0.03%; O_2 - 21%). Storage temperature 0...+10C and relative humidity 92-95%. The storage period was 150 days. Treating fruit with products whose active substance is 1-MCP before storage increases pulp firmness, DA-Meter index values, standard fruit yield, decreases ethylene emission, natural loss, fungal disease, and extends the "shelf life" of apples compared to the control variant.

12:00-12:05

THE IMPACT OF THE PRODUCT PILARHANCE, SL ON INCREASING THE PRODUCTIVITY OF APPLE ORCHARDS

Ananie Pește anu
Technical University of Moldova, Chișinău, Republic of Moldova

The investigations were carried out with Gala Buckeye apple trees variety grafted on the M9 rootstock. The planting distance was 3.5 x 0.8 m, with a vertical crown shape. The aim of the research was to study the effectiveness of Pilarhance, SL as a growth regulator in different treatment doses to stimulate fruit growth and development processes in apple orchards. To achieve the planned objective, the following variants were studied: 1. Control, without treatment; 2. Gibbera, SL, 0.5 l/ha; 3. Pilarhance, SL, 1.2 l/ha; 4. Pilarhance, SL, 1.3 l/ha. On the basis of the obtained results, it was established that the growth regulator Pilarhance, SL can be included in the technological scheme for apple cultivation at a dose of 1.3 l/ha, applied 3 times by foliar spraying. The first treatment to be carried out after flowering, and the next 2 with an interval of 7-10 days between them.

12:05-12:10

EVALUATION OF APPLE VARIETIES FOR INDUSTRIALIZATION IN AN INTENSIVE SYSTEM

Ivan Plămădeală, Inna Bîlici, Valerian Balan
Technical University of Moldova, Chișinău, Republic of Moldova

The purpose of this work is to identify highly productive apple varieties, adapted to the requirements of the industry, which will ensure the obtaining of high-quality fruits intended for processing. Maintaining the health of the trees and obtaining an efficient harvest are fundamental objectives of orchard maintenance. The research is carried out in the southeastern fruit-growing area of the Republic of Moldova. The apple varieties Renet Simirenco, Granny Smith, Florina, Golden Delicious, Golden Rezistent, Champion, Pinova, Mutsu, and Idared are studied, grafted on the M9 rootstock, planted in 2005 at a distance of 4×1,2 m, resulting in a density of 2083 trees/ha. Agrotechnical works (soil cultivation, irrigation, fertilization and phytosanitary protection against diseases and pests) are carried out at the optimal time. The trees are managed according to the improved natural crown system with reduced volume. The varieties analyzed were evaluated according to their specific properties, such as resistance to *Venturia inaequalis* and *Podosphaera leucotricha*, productivity and fruit quality for industrialization. All the varieties studied are considered

suitable for the processing industry due to their superior agronomic and technological characteristics, such as firm pulp and pleasant taste. The varieties Renet Simirenco, Granny Smith, Florina, Pinova and Idared are particularly appreciated for their qualities in the production of juices and preserves, and the varieties Mutsu and Golden Rezistent are excellent for obtaining aromatic products and cider.

12:10-12:15

THE INFLUENCE OF PLANTING DISTANCE AND CROWN SHAPE ON THE GROWTH AND PRODUCTIVITY OF CHERRY ORCHARDS

Valerian Balan, Inna Bîlici, Vasile Șarban, Igor Ivanov
Technical University of Moldova, Chișinău, Republic of Moldova
Ministry of Agriculture and Food Industry, Chișinău, Republic of Moldova
SRL VindexAgro, Republic of Moldova

Cherry cropping systems are a topic of major interest in the literature and fruit growing practice. The aim of this study, conducted between 2013 and 2024, was to evaluate the impact of the variety-rootstock association, crown shape and planting distance on growth and productivity. The study included eight cherry varieties (Valerii Cikalov, Record, Ferrovia, Kordia, Regina, Skeena, Bigarreau Burlat, Lapins) grafted onto *Cerasus mahaleb L.* and Gisela 6 rootstocks, in various combinations and at different planting distances. The productivity of the varieties on Mahaleb was evaluated over 8 years of production, and the cumulative yield was significantly higher for the Record variety. The varieties Bigarreau Burlat, Ferrovia and Lapins on Gisela 6, evaluated in the 4-7th year of vegetation, formed according to the FS (Thin spindle) system and planted at a distance of 5 x1.5 m, demonstrated superior productivity. The varieties Adriana, Ferrovia and Skeena, planted at a distance of 4x2 m, during 11 years of vegetation recorded a superior yield in the case of the FS crown shape. The FS crown shape consistently offered the highest yields compared to the "cup" and "Kym Green Bush" shapes in the varieties Samba, Early Star and Black Star on Gisela-6, planted at 4x2 m. Overall, the FS crown shape was associated with the highest yields during the analyzed fruiting period. It is worth noting that the productivity of early varieties was reduced in some years due to unfavorable weather conditions during the critical stages of flowering, fertilization and fruit setting.

12:15-12:20

THE IMPACT OF ANNUAL STEM DENSITY ON VEGETATIVE GROWTH AND FRUITING IN THE RASPBERRY VARIETY ENROSADIRA

Dmitri Dodica, Valerian Balan, Inna Bîlici
Charity Foundation ,,Caritas Moldova" Republic of Moldova
Technical University of Moldova, Chișinău, Republic of Moldova

Field study conducted in open ground to determine how growth and fruiting vary at five levels of annual stem density and to identify the optimal density level for the raspberry variety Enrosadira. Plants were planted at a distance of 2.5 m × 0.45 m. The density of annual stems varied between 12 and 20 plants per linear meter, on a strip 0.5 meters wide, spaced approximately 20–30 cm apart. Stem density was studied per linear meter in randomized blocks with replication: V1 – 12 stems, V2 – 14 stems, V3 – 16 stems, V4 – 18 stems (control), and V5 – 20 stems. Plant height, stem thickness, yield per stem and per hectare, fruit size, sugar/acidity content, and timing of fruiting were evaluated. Yield per stem and per hectare differed significantly between densities. The highest productivity was recorded in the variant with 14 stems per linear meter, without affecting fruit quality. At densities of 12–14 stems per linear meter, a delay in fruiting by 9 days was observed compared to those with a number greater than 16 stems per linear meter. Density above this level led to a reduction in the fruiting period and a decrease in fruit quality.

12:20-12:25

MULTIDIMENSIONAL CHARACTERIZATION OF SPARKLING WINES FROM FETEASCĂ REGALĂ, TĂMÂIOASĂ ROMÂNEASCĂ AND FETEASCĂ ALBĂ GRAPES

Dragoș-Florin Popa-Grosaru, Camelia Luchian, Lucia Cintia Colibaba, Bettina-Cristina Buican, George Coman, Tiberiu Andrieș, Elena-Cornelia Focea, Valeriu V. Cotea
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The economic significance of sparkling wines has grown substantially, driven by rising global demand, shifting consumer preferences, and the expansion of production regions, while the traditional methode champenoise remains the benchmark for quality. Within this context, sparkling wines produced using the méthode champenoise were crafted from native Romanian grape varieties, Fetească regală, Tămâioasă românească, and Fetească albă, sourced from the Dealu Mare region. The wines were evaluated after different maturation periods, including a variant aged on lees without riddling and disgorgement, allowing a comprehensive, multidimensional assessment of their physico-chemical properties and sensorial characteristics. Romanian indigenous grape varieties showed remarkable potential for sparkling wine production, capable of developing complex tertiary and quaternary aromas during extended lees aging, while simultaneously expressing vibrant floral and fruity notes. This versatility highlights their enological value and suitability for producing sparkling wines with distinctive character and broad aromatic diversity. This study aimed to provide a detailed characterization of these sparkling wines, integrating physicochemical, chromatic, volatile, and sensorial analyses to evaluate their quality and enological potential.

12:25-12:30

WHITE WINE QUALITY MODULATION BY ULTRASOUND AND FRENCH OAK FRAGMENTS

Elena Cornelia Focea, Camelia Elena Luchian, Lucia Cintia Colibaba, Elena Cristina Scutarașu, Mihai Cristian Focea, Ana Maria Vlase, Dragoș Grosaru, Laurian Vlase, Valeriu Cotea
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
"Iuliu Haţieganu" University of Medicine and Pharmacy, Faculty of Pharmacy, Cluj Napoca, Romania

The winemaking process has evolved through innovative methods that enhance wine quality while addressing consumer demand for faster availability. Traditional aging, though essential for flavor development, remains time-consuming and costly. This study investigates the potential of ultrasonic treatment (35 kHz) combined with French oak fragments of varying toasting levels as a strategy to accelerate wine maturation without compromising quality. Wines were placed in 5 L glass vessels with oak chips or granules (light, fresh, and medium toast) for 10 and 20 days. Parallel samples received 15-minute ultrasonic treatment under identical conditions. An analysis of variance considered maturation time, dosage, toasting level, fragment type, and ultrasound application as independent variables. Results revealed that oak type, dosage, and contact time strongly influenced volatile compound profiles, including butyrolactone, benzaldehyde, and phenolic derivatives, which are key oak-aging markers. Ultrasound significantly enhanced extraction, achieving comparable sensory attributes in shorter periods and at lower costs, supporting its application in white wine production.

12:30-12:35

ASSESSMENT OF AGROBIOLOGICAL INDICES OF RARĂ NEAGRĂ GRAPEVINE CULTIVATION IN THE REPUBLIC OF MOLDOVA

Olga Mogîldea, Gheorghe Nicolaescu, Liviu Vacarciuc, Cornelia Voinesco, Valeria Procopenco, Mariana Godoroja
Technical University of Moldova, Chişinău, Republic of Moldova
S.R.L. AGRIFOODCONS

The wine sector of the Republic of Moldova, with centuries-old traditions, holds strategic importance, being closely linked to the economy, cultural, and social identity. The diversity of pedoclimatic conditions contributes to the valorization of indigenous grapevine varieties, particularly Rară Neagră (Băbească neagră), in the context of climate change and the increasing demand for authentic wines. This variety, as an integral part of the national viticultural heritage, shows significant oenological potential and a high degree of adaptability, offering strategic opportunities for strengthening Moldova's identity in the wine market. Terroir analysis remains a determining criterion in defining wine authenticity. The delineation of the viticultural area, with its three Protected Geographical Indication (PGI) regions – Codru, Valul lui Traian, and Ștefan Vodă – provides wines with a specific style and distinct quality. The persistence of climatic variability confirms the role of terroir factors as defining elements studied in the present work. In this regard, the valorization of indigenous varieties and the rigorous definition of terroir constitute essential premises for sustainable and authentic viticulture in the Republic of Moldova.

12:35-12:40

COMPLEX SUSTAINABLE TECHNOLOGY OF PINK AND RED WINE MAKING IN SEVERAL STEPS

Eugen Bogatîi, Liviu Vacarciuc
Technical University of Moldova, Chişinău, Republic of Moldova

During the processing of the grapes of black berry varieties, we obtain wines with the possibility of fully exploiting the reserve of phenolic compounds, obtaining a final product with biologically active substances (BAS), where wines with hygienic value have an increasing trend on the wine market. This study focuses its objectives on the processes of obtaining grape must through competitive methods, including the establishment of the intensive technological regime in several consecutive but different steps, and the separation of the pigmented red must in the production process. The technological results, the analysis of the content of polyphenols and chromatic parameters that ensure the high quality of production in the specific conditions for the Central region (Codru), and the category of wines from grapes with black berries, are presented.

12:55-13:00

THE INFLUENCE OF ECOLOGICAL FACTORS ON THE FERTILITY AND GRAPE QUALITY OF THE MOLDOVA VARIETY UNDER THE CONDITIONS OF THE REPUBLIC OF MOLDOVA

Valeria Procopenco, Mariana Godoroja, Olga Mogîldea, Cornelia Voinesco, Ion Plămădeală, Gheorhghe Nicolaescu, Ion Dosca
Technical Universtiy of Moldova
S.R.L. AGRIFOODCONS
S.R.L. AGRO SEVION

The continuous changes in climatic conditions, both globally and regionally, require constant monitoring of agricultural ecosystems and the identification of effective adaptation strategies.

The growth and development of grapevines are influenced by essential ecological and agrotechnical factors. Correlating bud fertility, yield, and grape quality with the dynamics of climate change is crucial for the annual adjustment of viticultural practices.

The adoption of appropriate training and pruning systems, the implementation of protective measures against frost and winter damage, as well as optimal irrigation and fertilization strategies, can mitigate the effects of climate change on grapevines, thus contributing to the maintenance of stable grape production. In this study, we aimed to analyze the ecological conditions in various viticultural regions of Moldova and their impact on the fertility and productivity of the 'Moldova' grape variety.

The results suggest that factors such as vineyard management, microclimatic variations, and the genetic characteristics of the variety can have a significant influence on bud fertility and the productive potential of grapevines.

13:00-13:05

PARTICULARITIES OF LAND RECLAMATION FACILITY MANAGEMENT

Marian Stanciu, Sorin Mihai Cimpeanu, Elena Constantin
University of Agronomic Sciences and Veterinary Medicine Bucharest, Romania

The management of land reclamation facilities has special features determined by the complexity of the activities that are planned, organized and managed. Firstly, the special complexity of the activities results from the specificity of the elements that form the land reclamation facility: the agricultural land and the facilities built on it. Secondly, the complexity of the activities is determined by the need for these two elements to set up a consistent functional structure in order to fulfil the intended purpose, i.e. the sustainable increase of land productivity, by the effective exploitation not only of the natural resources, water and soil, but also of the genetic resources.

WORKSHOP SESSION 1

11:00-13:00, Nature-based solutions: Co-creation for resilient urban spaces

A235 Amphitheater (third floor, main building**)**

Chairpersons: Lecturer Roxana Pașcu, PhD
Lecturer Cristina Zlati, PhD

Invited speakers
Architect Bogdan Scanteie
City planner Corina Pop
City planner Iulian Stan

FACULTY OF FOOD AND ANIMAL SCIENCES

TRENDS AND CHALLENGES IN FOOD, ANIMAL SCIENCES AND SUSTAINABLE DEVELOPMENT

THURSDAY, OCTOBER 23, 2025

SECTION ANIMAL SCIENCES
ORAL COMMUNICATIONS

➔ Emil Honoriu Roșu (E28) auditorium, 1st Floor

Chairpersons: Prof. Marius-Giorgi USTUROI, PhD
Assoc. prof. Mihaela IVANCIA, PhD

Secretariat: Lecturer Bogdan-Vlad AVARVAREI, PhD
Lecturer Claudia PÂNZARU, PhD

14:00– 14:10

CURRENT CHALLENGES IN ANIMAL NUTRITION

Ioan Mircea Pop, Daniel Simeanu, Cristina-Gabriela Radu-Rusu, Ioana-Silvia Petrescu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Nowadays, globally we face many important issues related to animal nutrition. The interest is not only in a proper nutrition in terms of animal physiology and valorization of their genetic potential, but also in achieving many other goals. Of course, the efficiency of transforming food into the higher possible animal production with minimal costs remains a basic idea, and is why nutritional requirements are continuously improved, also working to increase digestibility and improving the feeding optimization programs. But aspect such as new raw materials as feed sources, the quality of the obtained products, the feed and food safety, soil and water management, reducing environment pollution and influence on climate change, animal welfare and others are also very important. The applied use of modern and new techniques such as biotechnologies and expansion of automatics and robotics, including through the use of AI will certainly be helpful.

14:10– 14:20

ASSESSMENT OF DIETARY APPLE POMACE EFFECT ON INFLAMMATORY GENE EXPRESSION IN COLON OF PIGLETS AFTER WEANING BY USING OMICS TECHNOLOGY

Ionelia Țăranu[1], Gina Cecilia Pistol[1], Mihai Alexandru Gras[1], Ana Maria Ciupitu[1,2], Iulian Alexandru Grosu[1]
[1]National Research and Development Institute for Biology and Nutrition Animal (IBNA), Balotesti, Ilfov, Romania
[2] SCOSAAR- Advanced Studies School of the Romanian Academy, Institute of Biochemistry, Romania

Using the tools of nutrigenomics, the aim of the present study was to invetigate how the genetic background of piglets during the post-weaning period is affected by *E. coli*-LPS-induced inflammation and by the bioactive compounds from a diet with apple pomace in term of their enhancing or suppressing. 24 piglets after weaning were allocated to 4 groups and fed with either a control diet (group 1 and 2) or an experimental diet including 5% apple pomace (group 3 and 4). After

been fed with experimental diet for 3 weeks piglets from group 2 and 4 were challenged with an injectable *E. coli*-LPS (80 µg LPS/kg b.w.). 24 hours later, all piglets were sacrificed and organs samples were collected. The effect of LPS and dietary apple pomace on the expression of forty genes involved in inflammation were measured by qPCR array in colon as the most affected organ by the inflammation frequently caused by bacteria (e.g. *E. coli*) in the post-weaning period. The results confirmed that LPS increased the expression of 58% of the total measured inflammatory genes. The diet containing apple pomace is able to suppressed the gene overexpression toward that of the control which recommends it as a possible alternative to the medical treatments already used (e.g. antibiotics).

14:20– 14:30

PRELIMINARY ASSESSMENT OF THE POTENTIAL TO PARTIALLY SUBSTITUTE FISH MEAL IN THE DIET OF CATFISH (*SILURUS GLANIS* LINNAEUS, 1758)

Liliana B. Athanasopoulos, Floricel M. Dima, Magdalena Tenciu, Veta Nistor, Ionica Bejenariu, Viorica Savin, Elena Sîrbu, Desimira M. Stroe
Institute of Research and Development for Aquatic Ecology, Fishing and Aquaculture Galați, Romania

In the context of demographic growth, aquaculture provides high-quality proteins for human consumption. The main costs in fish farming are related to feed expenses, which depend on the fish meal content. This study aims to explore solutions for partially replacing fish meal (30%) in existing diet formulas for European catfish, using insect meal (V1) or soybean meal (V2). The experiment lasted 45 days. Biometry and gravimetry analyses were performed, along with blood samples to assess blood biochemistry, hemoglobin, and hematocrit. Erythrocyte counts were also conducted under a microscope. The weight gain in the control group was Vc=368±3.84g, in the insect meal-fed group V1 was 387±11.81g, and in the soybean meal-fed group V2 was 245±7.51g. Results indicate that insect meal can successfully reduce the amount of fish meal in the diet of Silurus glanis.

14:30– 14:40

FEATHER MEAL AS AN ALTERNATIVE PROTEIN SOURCE IN THE DIET OF LABORATORY MICE

Larisa Caisîn, Elena Cibotaru, Ludmila Bivol
Technical University of Moldova, Chisinau, Republic of Moldova

The use of feather meal as an alternative protein source in the diet of laboratory mice represents an effective solution for optimizing research diets, reducing costs, and promoting sustainability. This strategy contributes to improved zootechnical performance, such as body weight gain and average daily growth, while maintaining good feed acceptability and providing a viable nutritional alternative for animal studies. Supplementation of the diet with feather meal led to a higher body weight in the experimental group compared to the control group at the end of the trial (23.10), with a more pronounced effect in males (difference of approximately +2.4 g) than in females (difference of approximately +1.1 g). The average daily gain was also improved, particularly in females during the final stages (0.47 g EG vs. 0.20 g CG), and remained consistently higher in males (0.27 g EG vs. 0.22 g CG). Feed intake ranged between 207–251 g/mouse and 1451–1759 g in total, indicating good diet acceptability of the feather meal formulation, which supported growth and zootechnical performance. The obtained results confirm that feather meal is an efficient protein source, improving body weight and average daily gain in mice—especially in males—without negatively affecting feed intake.

14:40– 14:50

STUDY ON THE VITAMIN AND MINERAL CONTENT OF BROILER CHICKEN MEAT FROM DIFFERENT REARING SYSTEMS IN RELATION TO THE APPLIED NUTRITION

Maria-Monica Boroș, Mădălina Matei, Cristina Gabriela Radu-Rusu, Răzvan Mihail Radu-Rusu, Daniel Simeanu
"Ion Ionescu de la Brad" Iași University of Life Sciences

The present study focuses on the vitamin and mineral content found in broiler chicken meat raised under different rearing systems in relation to the applied diet. Broiler chicken meat from organic and free-range systems shows higher levels of vitamins (0.8 µg vit. D, 1.0 mg vit. E) and minerals (1.0 mg iron, 1.2 mg zinc) compared to intensive systems. Free-range broiler chicken meat provided the highest level of vitamin A (100 µg), contributing to immune support. Diets including insects offer an advantage in terms of vitamin E content (0.8 mg), which protects cells against oxidative stress, highlighting the importance of innovative ingredients in poultry feed. Organic and free-range diets generally provide meat richer in minerals and vitamins, which is beneficial for consumer health. This underlines the importance of choosing a varied diet, not only for animal growth but also for the final quality of food products. The vitamin and mineral profile of broiler chicken meat is significantly influenced by the rearing system and the applied diet.

14:50– 15:00

THE ROLE OF THE BIOLOGICALLY ACTIVE PREPARATION IN OPTIMIZING SPERMATOGENESIS IN BREEDING BOARS

Elena Cibotaru[2], Grigore Darie[1], Irina Djenjera[1], Sveatoslav Rotari[1]
[1]National Institute of Applied Research in Agriculture and Veterinary Medicine, Republic of Moldova
[2] Technical University of Moldova, Chisinau, Republic of Moldova

The study aimed to evaluate the role of a complex biologically active preparation in optimizing spermatogenesis in breeding boars. The results showed an increase in ejaculate volume in the experimental group (202.5 ± 29.5 ml compared to 168.0 ± 8.5 ml in the control group), as well as an improvement in the qualitative parameters of the semen. Specifically, the percentage of motile spermatozoa increased to 92.4 ± 0.4% compared to 92.0 ± 0.4% in the control group. Additionally, a significant increase in the percentage of progressively motile spermatozoa was observed (72.3 ± 2.8% in the experimental group versus 65.3 ± 2.9% in the control group).

Furthermore, the proportion of morphologically normal spermatozoa was higher in the experimental group (78.3 ± 2.9%) than in the control group (69.8 ± 3.4%). Thus, the administration of the complex biologically active preparation optimized the spermatogenesis process in breeding boars by increasing ejaculate volume and improving qualitative parameters (motility, progressive motility, and normal morphology), indicating its potential benefit in supporting reproductive capacity.

15:00– 15:10

RABBITS AND THEIR PRODUCTS

Roxana Nicoleta Lazăr, Silvia Pătruică, Adrian Dan Rășinar, Eliza Simiz
University of Life Sciences "King Mihai I" from Timisoara, Romania

Rabbit husbandry constitutes a specialized field within animal science with considerable potential, owing to the nutritional and economic value of its derived products. The objective of this study is to examine the valorization pathways of rabbit products, with emphasis on meat, pelts, angora fiber, and manure. The analysis draws upon scientific literature, statistical databases, and comparative

assessments of production and consumption patterns at both European and national levels. Findings indicate that rabbit meat represents a high-quality dietary resource, characterized by low fat and cholesterol content, while pelts and angora fiber provide valuable raw materials for the textile industry. In addition, rabbit manure demonstrates significant agronomic utility as an organic fertilizer. Market trends and future perspectives of rabbit farming in Romania are also discussed, highlighting the increasing demand for sustainable and health-oriented animal products. The study concludes that rabbit production holds strategic relevance for the diversification of animal husbandry and for the socio-economic development of rural communities.

15:10–15:20

COMPOSITION OF DOMESTIC RABBIT CARCASSES AND MEAT

Tatiana MARDARI
Technical University of Moldova, Chisinau, Republic of Moldova

The major morphological components of the domestic rabbit carcass are muscle tissue (muscle, tendons, ligaments, fascia, and aponeuroses) and bones. The research was aimed at assessing the morphological parts of the carcasses and the chemical composition of domestic rabbit meat. The analysis of meat samples was carried out on the laboratory apparatus "Cagle Labs" of German production for each separate meat sample, making three measurements for each sample. The weight of the studied rabbit carcasses ranged from 1.77 to 3.46 kg/carcass, the muscle weight was between 49.7-73.81% of the carcass weight, the bones - 17.5-29.29%, the meat/bone ratio, for small carcasses - 2.71/1, for medium carcasses - 3.41/1, for large carcasses - 3.94/1, in the meat of the domestic rabbits taken into the study an average protein content of 20.14%, fat 3.11%, moisture 78.96%.

15:20– 15:30

RESEARCH ON THE INFLUENCE OF FARMING TECHNOLOGY ON PRODUCTIVE PERFORMANCE AND MILK QUALITY

Vasile Maciuc, Rebecca Pădure, Alin - Andrei Afloroaei, Gabriel - Ioan Bărbuță, Gabriela Amariții (Pădurariu)
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The study was conducted to highlight the influence of technology applied on the farm on productive performance. The biological material consists of a herd of 263 cows belonging to the Holstein-Friesian breed, exploited in the conditions of a farm from Bistrița Năsăud county, the NW area of Romania. For the statistical processing of primary data, it was used the S.A.V.C. computer program. The use of robots in the application of exploitation technology favors the achievement of very high performances. The average production in the first lactation was 8197 kg of milk, the highest productive average being 10978 kg of milk in the 7th lactation.

The somatic cell count (SCC) in milk had an average value of 206.23 thousand /ml. Calving interval (CI) has an average value of 381.54 days. To obtain a gestation, were used for a female an average of 1.85 straws. Increasing the genetic potential and productivity of cattle populations, along with optimizing exploitation technologies on cattle farms, management and correct economic management, are important ways to increase quantitative and qualitative milk production.

15:30–15:45

THE IMPACT OF FARM SIZE ON VETERINARY HEALTH STRATEGIES AND DISEASE INCIDENCE IN CALVES: A QUANTITATIVE RESEARCH WITHIN THE ROMANIAN CATTLE LIVESTOCK SECTOR

Elena Răducanu, Mihaela Sitaru, Roxana Elena Stefan (Vasiliu), Livia Vidu
University of Agronomic Sciences and Veterinary Medicine, Bucharest, Romania

This study investigates the influence of farm size on veterinary health strategies and the incidence of calf diseases in Romanian dairy cattle farms. Based on data collected through a structured questionnaire, the research highlights notable differences in disease prevalence and preventive practices across small, medium and large farms sizes. One of the key findings indicates that navel hygiene practices are consistently applied across all farms, regardless of farm size. Over 60% of respondents reported the use of iodine-based navel dipping, suggesting that this essential preventive measure is broadly implemented independent of herd scale. In contrast, the incidence of enteritis and respiratory diseases shows a significant association with farm size in dairy cattle. Medium and large-sized farms demonstrated higher variability in enteritis occurrence, while small farms reported a statistically higher incidence of respiratory conditions in calves aged 0–3 months ($p=0.013$). Preventive practices such as deworming and vaccination were not significantly influenced by farm dimension. Preventive deworming was reported by 60% of farmers, and approximately one-third of the respondents vaccinated calves against major diseases, regardless of farm size. These findings underscore the importance of adapting health management strategies to the specific needs of each production system, while also suggesting that certain preventive practices may be uniformly adopted across farms, irrespective of their size.

15:45–16:00

COMPARATIVE STUDY OF THE DYNAMIC OF BEEF MEAT PRODUCTION CARRIED OUT AT THE GLOBAL LEVEL, IN THE EU MEMBER STATES AND IN ROMANIA

Costel Țăran, Gabriela Amariții, Felicia Țenu, Elena Amariei (Enache), Vasile Maciuc
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The study compares the beef production obtained worldwide, in EU member countries and in Romania. To carry out the research, documentation was carried out based on official statistical data provided by Faostat, Eurostat and INS for the period 2019-2024. Thus, worldwide total beef production has increased continuously since 2020 and in 2023 reached 338389297 tons. The largest quantity was slaughtered in Asia, with production on the continent representing 35.39% of the total. European countries achieved 11.13%, which places Europe continent in third place. In Romania, amid the decrease in cattle herds, in 2024 meat production was 35,323 tons, which represented 3.98% of the total quantity of meat slaughtered in the country. Meat from cattle slaughter represents a valuable source of nutrients with high biological value and must make an increased contribution to supporting the growing demand for consumption.

COFFEE BREAK
16^{00} – 16^{20}

16:20– 16:30

EVALUATION OF MILK PRODUCTION IN BANAT WHITE GOATS RAISED IN DIFFERENT REGIONS OF ROMANIA

Laura Marinică[1,3], Dorina Nadolu[1,2], Constantin Pascal[3]
[1]National Association of Goat Breeders of Romania, Constanța, Romania
[2]Institute of Research-Developement for Sheep and Goat Breeding Palas-Constanța, Romania
[3]"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The Banat White breed represents one of the most important indigenous goat genetic resources in Romania, recognized for its productive potential, especially in terms of milk yield, as well as for its role in supporting genetic diversity and national livestock traditions. Goat milk is a valuable source of high-quality proteins, easily digestible fats, vitamins, and minerals, and it is increasingly appreciated for its nutritional properties and health benefits. The aim of this study was to evaluate milk production in several development regions of Romania (North-West, North-East, Centre, West, South-West Oltenia, and South-Muntenia) over a three-year period (2023–2025). The results highlighted clear differences between regions. The North-West region stood out with the highest average production (233.61 kg/milk in Maramureș), while the North-East region recorded the lowest values (160.35 kg/milk in Botoșani). The difference of approximately 46% between the two regions confirms the influence of environmental conditions, feed resources, and management practices on production performance. The conclusions emphasize the productive potential of the Banat White breed and its variability depending on the geographical area, underlining the importance of adapting farming systems to regional specificities.

16:30–16:40

EVALUATION OF REPRODUCTIVE INDICES AND MILK PRODUCTION IN CARPATHIAN GOATS UNDER REPRODUCTIVE ACTIVITY MODULATION

Laura Marinică [1,4], Andreea Hortanse Anghel [1,2,3,]
Oana Corina Dordescu (Preșa) [2,4], Constantin Pascal [4]
[1] National Association of Goat Breeders of Romania, Constanța, Romania
[2] Institute of Research-Development for Sheep and Goat Breeding Palas, Constanța, Romania
[3] "Ovidius University" of Constanta, Constanța, Romania
[4] "Ion Ionescu de la Brad" Iasi University of Life Sciences, Iasi, Romania

Goats represent a species of major interest for animal husbandry in Romania, and the Carpathian breed plays an essential role as an indigenous genetic resource, valued for its adaptability and dual-purpose use. The age at first kidding and the time of mating directly influence productive and reproductive performances. The aim of this study was to evaluate the impact of reproductive activity modulation on milk and meat production in Carpathian goats registered in the Genealogical Register. The research was carried out on two groups of 50 primiparous goats each: group 1 was artificially inseminated on induced estrus between August 15–30, while group 2 was naturally mated on estrus between September 15–30, monitoring fertility and prolificacy. Productive indices were recorded during the first lactation. The results showed superiority for group 1 compared to group 2: fertility 94% vs. 90%, prolificacy 156% vs. 142.8%, and a milking period longer by 30 days (the suckling period being 70 days in both groups). These differences confirm that reproductive modulation directly influences milk production and reproductive indices, highlighting the importance of reproductive management strategies in breeding programs to increase economic efficiency and better exploit the productive potential of the Carpathian breed.

16:40– 16:50

RESEARCH ON USING THE PG 600 IN GILTS

Gherasim Nacu, Ștefan Ciornei, Raluca Donosă, Mihaela Ivancia, Florin Nechifor
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Hormonotherapy is frequently used in swine to induce fertile oestrus in both sows and gilts. The research was conducted over a year on a total of 953 Camborough sows, at least 210 days old at the beginning of the observations, divided into two groups: a control group (642 sows) and an experimental group (311 sows). In the control group were monitored the dynamics of oestrus for 27 days after transfer to the pre-breeding barn, the fertility, and the prolificacy. The appearance of oestrus was analysed in the experimental group for 21 days after transfer. 106 gilts that did not show oestrus during this period were treated with a 5 ml dose of PG 600, administered intramuscularly behind the ear. The oestrus dynamic was analysed for 6 days, along with fertility and prolificacy. After gonadotropin administration, 75.47% of the swine came into heat, compared to 38.73% in the control group. The best response to treatment was in spring (81.81%) and winter (82.60%), and the largest difference between the groups was recorded in summer (45.62%). The average fecundity rate of the gilts in the experimental group was 82.50%, being 1.22% lower compared to those in the control group. The average litter size was 10.32±0.11 piglets/litter in the control group and larger in the experimental group (10.83±0.12 piglets/litter).

The results obtained demonstrated the effectiveness of gonadotropin treatment for optimising reproduction in gilts, particularly in those with seasonal anestrus, oestrus synchronisation, and increased prolificacy.

16:50– 17:00

THE INFLUENCE OF LIGHT INTENSITY ON HEMATOLOGICAL INDICATORS OF JUVENILE CARP REARED IN A RECIRCULATING SYSTEM

Ionica Bejenariu[1], Floricel Maricel Dima[1,2], Veta Nistor[1], Elena Sîrbu[1], Viorica Savin[1], Liliana-Blondina Athanasopoulos[1]
[1]Institute of Research and Development in Aquatic Ecology, Galati, Romania,
[2]"Dunarea de Jos" University of Galati, Braila, Romania

This paper aims to analyze the effects of light intensity on the main hematological indicators of carp, reared under a recirculating system condition. Two light intensity levels were tested, each in duplicate: 280 lx and 90 lx. In both experimental lighting variants, the hemoglobin concentration showed an upward trend at the end of the experimental period.

The analysis of hematocrit values showed a similar trend to that observed for hemoglobin concentration. Regarding the dynamics of erythrocytes, a significant decrease in their number was observed under white light exposure ($p<0.05$), and a slight increase was recorded in the blue light variant. The values for MCV and MCH showed a statistically significant increase ($p<0.05$) in both lighting variants at the end of the experiment. The MCHC decreased significantly in the white light variant, while in the blue light variant, there was a significant increase ($p<0.05$).

The results obtained indicate that hematological indicators suggest that juvenile carp were able to adapt due to judicious feed management and, to a lesser extent, due to light intensity.

17:00– 17:10

LIFE IN THE FAST LANE: A REVIEW ON THE RELATIONSHIP BETWEEN DISPERSAL CAPACITY AND CROP PEST PREDATOR EFFICIENCY

Cristian Andrei Murgu
University of Agronomic Sciences and Veterinary Medicine, Bucharest, Romania

Dispersal capacity constitutes one of the most important traits that mediates the response of biotic communities to changes in their environment, as well as their role within ecosystems. Carnivorous arthropods, such as ground beetles and spiders, represent valued taxa within agricultural landscapes due to their role for crop pest control and use as a sustainable alternative to increased pesticide application. Our review aims to highlight how the dispersal capacity of arthropod pest predators is shaped by common agricultural practices, and how, in return, it affects the capacity of these communities to provide the ecosystem services they are valued for. We synthesize the available research on the topic and discuss how dispersal capacity shapes aspects such as the predatory efficiency, behavior and survival strategies of the addressed taxa. We emphasize how increased dispersal capacity can influence habitat recolonization, access to resources and survival to potential pressures, whilst also addressing issues such as increased pesticide exposure associated with increased movement and risks of encounters with superior predators. Finally, we present possible knowledge gaps and propose future research directions in the interest of popularizing the increased use of biological pest control by means of predatory arthropods.

17:10– 17:20

REVIEW OF TECHNOLOGICAL, ECONOMIC, AND WELFARE ASPECTS IN EGG PRODUCTION SYSTEMS

Anton Hamzau, Andreea-Ionela Zinca, Minodora Tudorache, Ioan Custura
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

Egg production systems represent a complicated interaction between welfare concerns, financial limitations, and technical advancements. This review evaluates the effects of technical developments in housing, feeding, and monitoring systems on production and egg quality by synthesizing existing research in these areas. Economic factors are thoroughly assessed, including cost effectiveness, market trends, and consumer-driven premiums for organic and cage-free eggs. The review also looks at welfare criteria and how they affect system design, with a particular emphasis on the behavioral and physiological effects on laying hens. According to comparative study, alternative models provide better welfare results but come with hefty investment costs, while conventional systems continue to maintain higher economic efficiency. For the future of egg production, the study emphasizes the necessity of integrated approaches that incorporate ethical considerations, sustainable economic strategies, and technical advancements.

17:20– 17:30

CONSIDERATIONS REGARDING PERFORMANCE IN TURKEY BROILER MEAT PRODUCTION, DEPENDING ON THE REARING SYSTEM

Marinela-Elena Simion, Marius-Giorgi Usturoi
"Ion Ionescu de la Brad" Iași University of Life Sciences

The production performance and slaughter yield in the turkey broiler are influenced by genetic, nutritional and technological factors. The average daily increase and feed conversion are essential

indicators for evaluating the growth efficiency, which vary depending on the genetic line, the composition of the ration and the feeding program, but also on the exploitation system applied. The carcass yield is determined by the age of slaughter, sex and genetic potential, with particular importance given to the development of the pectoral muscles, considered the main commercial part. Recent studies show that genetic progress has contributed significantly to increasing the share of valuable parts in the carcass, but has also raised challenges in maintaining the health and integrity of the skeleton. An integrated approach, which correlates productivity with carcass quality and animal welfare, is the current direction of optimizing performance in broiler turkeys.

17:30– 17:40

ISOPRENOIDS, A NATURAL ALTERNATIVE TO MITIGATE HEAT STRESS IN BROILER CHICKENS

Delia-Carmen Negură, Marius Giorgi Usturoi
"Ion Ionescu de la Brad" Iași University of Life Sciences

Heat stress (HS) is a major problem in poultry farming, causing decreases in productive performance, deterioration of intestinal health, liver dysfunction, systemic inflammation, and impaired welfare in broilers. Nutritional treatments based on medicinal plants and, in particular, isoprenoid compounds have attracted increased interest as natural alternatives to synthetic additives due to their antioxidant, anti-inflammatory, antimicrobial, and stress response-modulating properties. Recent studies on broilers subjected to cyclic heat stress demonstrate the beneficial effects of administering isoprenoids (carotenoids, tocopherols/tocotrienols—vitamin E, coenzyme Q_{10}, phytosterols, and a variety of terpenoids/monoterpenes from essential oils) through biochemical mechanisms that can mitigate the effects of hyperthermia: they reduce oxidative stress, stabilize cell membranes, support mitochondrial function, modulate the inflammatory response, and influence the intestinal microbiota. However, there are limitations to the use of isoprenoids, such as: high variability of response depending on dose, exposure time, interactions with other nutritional components, maintenance conditions, bioavailability, compound stability, combinations, risk of unpleasant taste, or antagonism with the intestinal flora. This review summarizes how isoprenoids can improve the effects of HS, presents recent experimental evidence (powder, extracts, essential oils, and isolated molecules: carvacrol, thymol, carnosic acid, etc.), as well as current forms of administration and limitations.

17:40– 17:50

UTILIZATION OF NATURAL CAROTENOID SOURCES TO ENHANCE MEAT COLOR IN BROILER CHICKENS

Irina Ungureanu, Marius Giorgi Usturoi
"Ion Ionescu de la Brad" Iași University of Life Sciences

Carotenoids are naturally occurring pigments that have bioactive properties. They are very important for poultry nutrition because they make broiler meat and eggs healthier, more marketable, and of higher quality. This paper provides a comprehensive overview including the chemical structure of carotenoids, biological functions and potential dietary applications including enhancement of meat color as well as antioxidant and immune functions in poultry. Most important natural sources, such as yellow corn, algae meal, marigold extract and dehydrated alfalfa meal, are evaluated for their potential to supply xanthophylls and beta-carotene, which are necessary for the pigmentation desired by consumers. The review's scope also includes the role in pigmentation that carotenoid bioavailability plays as well as their cost-effectiveness and efficacy when given to birds' skin, meat, and nutritional composition. Other synergistic effects, like the effects of combining carotenoids with vitamin E or other antioxidants are also highlighted. New studies hint at sustainable ways in which

natural carotenoid sources can be combined to achieve efficient pigmentation in poultry. This paper offers strategies to chicken feed composition to make it more market oriented and poultry products more appealing to consumers.

17:50– 18:00

COMPARATIVE STUDIES ON THE CHEMICAL COMPOSITION OF MEAT IN BROILER CHICKEN, UNDER SLOW GROWTH CONDITIONS

Marius Giorgi USTUROI
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Most of the chicken meat production in Romania comes from industrial hybrids (fast-growing), but recently the share of poultry units that apply slow-growth principles to industrial broilers or use slow-growing genotypes has increased. To achieve the proposed goal, samples (pectoral and upper leg muscles, respectively) were taken from individuals belonging to the industrial hybrid Ross-308 (batch L-c) and from two slow-growing hybrids (Hubbard=batch L-1 and HB Color=batch L-2), which were raised under identical conditions and slaughtered at the age of 56 days. Chemical determinations revealed that the highest water content was in the meat of Ross-308 chickens (higher by 0.68-1.42% in the pectoral muscles and by 1.37-1.95% in the thighs), while Hubbard chickens recorded the highest protein content (higher by 0.16-1.14% in the pectoral muscles and by 0.15-1.05% in the thighs) and lipid content (higher by 0.36-0.70% and, respectively, by 0.16-0.93%); moreover, the caloric value of meat in Hubbard chickens recorded higher values both in the case of the pectoral muscles (higher by 3.06-6.79%) and the upper leg muscles (higher by 1.66-7.16%). The data obtained indicate that Hubbard hybrid provides superior meat in terms of chemical composition to other hybrids used in poultry farming in Romania.

18:00– 18:10

QUANTITATIVE MEAT PRODUCTION IN TRANSYLVANIAN NAKED NECK CHICKENS

Marius Giorgi Usturoi, Răzvan Mihail Radu-Rusu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

In many countries, meat and eggs obtained from local breeds or populations are preferred, both out of respect for the national genetic heritage and due to the clearly superior nutritional and sensory characteristics compared to those from industrial hybrids. The only chicken breed originating in Romania is the Transylvanian Naked Neck, which belongs to the dual-purpose group (meat and eggs) and is characterized by remarkable organic resistance and a very good adaptability, especially in warmer regions. The study was conducted on male birds of the Transylvanian Naked Neck breed raised in an extensive system until the age of 120 days. At the time of slaughter, the live weight of the birds was 2,115.86 g, and the weight of the chilled carcasses was 1,495.28 g, resulting in a dressing percentage of 70.67%. Relative to the cold carcass weight, the breast accounted for 19.48%, the legs for 21.54%, the wings for 12.07%, and the giblets for 27.72%; the head, neck, and feet had a combined share of 19.19%. The presented data indicate that the Transylvanian Naked Neck breed ensures a satisfactory quantitative meat production and can represent a valuable genetic resource for free-range production systems.

SECTION FOOD SCIENCES
ORAL PRESENTATIONS

➔ Animal Physiology Laboratory, 2nd floor

Chairpersons: Prof. Daniel SIMEANU, PhD
Prof. Paul-Corneliu BOIȘTEANU, PhD

Secretariat: Lect. Cristina-Gabriela RADU-RUSU, PhD
Lect. Cătălin-Emilian NISTOR, PhD

14:00– 14:10

APPLE POMACE AS A MODULATOR OF MITOCHONDRIAL FUNCTIONALITY, CELLULAR VIABILITY, AND OXIDATIVE STRESS IN LIPOPOLYSACCHARIDE-STIMULATED INTESTINAL CELL LINE

Gina Cecilia Pistol[1], Ana Maria Ciupitu[1, 2], Valeria Cristina Bulgaru[1], Ionelia Taranu[1]

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Apple pomace represents up to 30 % of the apple fruit after juice extraction. It is rich in bioactive compounds such as dietary fiber, polyphenols, vitamins, minerals, organic acids, etc., with antioxidant and anti-inflammatory properties, which makes apple pomace a promising resource for animal nutrition. The present study aimed to investigate the effects of different concentrations of an apple pomace extract (AE) on IPEC-1 intestinal cells challenged with E. coli lipopolysaccharide (LPS). The IPEC-1 cells were cultured in the presence of AE for 4 hours and then challenged with LPS (10ug/mL) for an additional 24 hours.

The mitochondrial functionality and cellular parameters, such as proliferation, apoptosis, nitric oxide (NO), as well as reactive oxygen species (ROS)-positive cells, were assessed. Our results demonstrated that LPS increased percentages of ROS and NO-positive cells and induced damage to mitochondrial functionality.

Unexpected, diluted 1/10 apple pomace extract produced similar negative effects as LPS. By contrast, higher dilutions of apple pomace extract (1/100 and 1/200, respectively) prevented the LPS-induced damage by increasing mitochondrial activity, cell proliferation, and reducing apoptosis and NO- and ROS percentage. In conclusion, apple pomace extract is able to modulate both cellular functions and oxidative stress depending on its concentration.

This research was supported by funds from the PN23_20.02.01 project granted by the Romanian Ministry of Education and Research. A.M. Ciupitu is supported by a PhD fellowship of the Romanian Academy.

14:10– 14:20

A COMPARATIVE ANALYSIS OF DAIRY PRICE DYNAMICS IN THE EU, GLOBAL MARKETS, AND ROMANIA (2007–2025)

Ioana-Alexandra Alexe, Elena-Gabriela Stan, Antoneta-Elena Sima, Grațziela Victoria Bahaciu
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

The dynamics of dairy product prices represent a major field of interest in the analysis of agri-food markets, with implications for competitiveness, sustainability, and food security. Between 2007 and 2025, their evolution has been shaped by multiple factors, such as raw material volatility, economic and financial crises, climate change, agricultural and trade policies, as well as disruptions caused by pandemics and geopolitical conflicts. This study provides a comparative examination of dairy price fluctuations in the European Union, on international markets, and in Romania, using the Food Price Index (FPI) as an analytical benchmark. The analysis seeks to correlate global and European trends with the specificities of the Romanian dairy sector, taking into account production structure, domestic consumption levels, and integration into trade flows. Through this approach, the study outlines the main mechanisms and driving factors behind price variations, offering a framework for understanding the complexity of the current context and identifying avenues for further research.

14:20– 14:30

APPLYING NATIVE GRAPE MICROFLORA TO ENHANCE THE ACIDITY AND SENSORY PROFILE OF RED WINES FROM THE ŞTEFAN VODĂ WINE REGION

Alexandra Arseni, Ecaterina Covaci
Technical University of Moldova, Chisinau, Republic of Moldova

Fermentative yeasts are used industrially in the production of wine, having as their main characteristic the ability to produce the fermentation of simple carbohydrates in anaerobiosis, with the formation of ethyl alcohol and carbon dioxide. A large number of microorganisms are found, in particular, during the ripening period of the grapes. In the autumn, after harvesting, the yeasts on the leaves fall into the soil with their fall, being THERE until the spring, thus taking place natural selection, as a result of which the most resistant species survive. The purpose of the research consisted in the application of microbiological methods and techniques for the observation, isolation and identification of microorganisms existing in the examined products to establish the presence or absence of harmful microorganisms, especially the determination of the indigenous microflora. The study methods focused on the utilization of grape selected indigenous flora of Europeans *Cabernet Sauvignon* and *Merlot* grapes varieties from Javgur, Cimișlia district (Stefan Vodă viticultural region). The selected grape indigenous flora was inoculated in microbiological media Sabouraud (SDA), MRS (sterilized), Broth, Bretanomyces Agar (maintained in thermostat at temperature of 30ºC during 7 days). After the microbiological examination, the presence of *Saccharomyces yeasts,* acetic bacteria, *Torulopsis* spaces and *Bretanomyces* genus was detected in experimental samples. According to the experimental wine samples, various microflora and fermentation processes can have a substantial effect on the chemical and sensory characteristics of wines. Samples fermented with *Torulopsis* spaces lowered acidity and raised alcohol levels, which hurt the freshness goal even though its improved color parameters. Although, wine fermented with *Metschnikowia pulcherrima* and native *Saccharomyces yeasts* has an increased acidity perception, highlighting its potential to modify taste profiles. The establish 3 must fermentation methods proved especially successful, producing red wines that were thought to be more balanced because of their better carbonyl and volatile alcohol composition in organoleptically characteristics. Indigenous microflora offers a more balanced aroma,

highlighting the importance of carefully selecting both viticultural and fermentation practices in tailoring wine local characteristics.

The authors thank the Project for Young Researchers 23.70105.5107.04T *Valorization of the indigenous flora of the Ștefan Vodă wine-growing region to increase the authenticity and competitiveness of Moldovan wines*, which is carried out within the Oenological Research Center, Department of Oenology and Chemistry, Faculty of Food Technology, Technical University of Moldova.

14:30– 14:40

DYNAMICS OF INDIGENOUS MICROFLORA DURING WHITE WINES PRODUCTION

Ecaterina Covaci, Aliona Sclifos, Natalia Vladei
Technical University of Moldova, Chisinau, Republic of Moldova

The production of white wine is a complex biochemical process influenced by the presence and dynamics of different microorganisms. These microorganisms, including yeasts, bacteria, and sometimes molds, play critical roles in fermentation, aroma development, and overall wine quality. Understanding their variation throughout vinification helps optimize fermentation, improve wine safety, and enhance sensory attributes. The purpose of the research was to establish the microorganisms involved in white wine production (as: yeasts, bacteria and molds) during white wine production. Stady was conducted in Oenological Research Center of Department of Oenology and Chemistry. As practical results 65 strains out of the 148 identified were microbiological characterized. Based on the assessment of morphological, cultural and reproductive characteristics, it was found that yeast cultures isolated from the indigenous microflora are characterized as uniform and viable cell strains with interest for use in winemaking. Positive microbial activity enhances aromatic complexity, acid balance, and mouthfeel. The variation of microorganisms throughout white wine production is dynamic and significantly impacts the final product's sensory profile and stability. Careful monitoring and management of microbial populations through: selective inoculation, sanitation, SO_2 usage, and fermentation control, are essential for producing high-quality white wines with desirable aromas, balanced acidity, and long shelf life.

Research funded by project Young Researchers *Valorization of the indigenous flora of the Ștefan Vodă wine-growing region to increase the authenticity and competitiveness of Moldovan wines*, (23.70105.5107.04T) carried out within the Oenological Research Center, Department of Oenology and Chemistry, Faculty of Food Technology, Technical University of Moldova

14:40– 14:50

ASSESSING SINGLE NUCLEOTIDE POLYMORPHISMS OF MEAT TENDERNESS IN THE CALPASTATIN GENE IN ROMANIAN SPOTTED CATTLE (SIMMENTAL TYPE)

Roxana Cenan[1], Viorica COSIER[2]
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In the evaluation of meat quality, the final consumer plays a pivotal role, significantly influencing both production practices and market pricing. Key attributes assessed in determining meat quality include tenderness, juiciness, aroma, and flavor, all of which contribute to the overall sensory experience and consumer satisfaction. Among these attributes, tenderness is the most highly valued by consumers and is often the primary target for improvement. It is influenced by both genetic factors, such as breed, and non-genetic factors, including nutrition, handling, and processing conditions.

Calpastatin (CAST), an endogenous inhibitor of the calpains, plays an important role in post-mortem tenderization of the meat. To assess the genetic potential for meat tenderness in Romanian Spotted cattle, 101 animals were genotyped for two meat tenderness-associated mutations in the calpastatin gene—specifically, a C>G substitution in intron 5 (SNP 282C>G) and an A>G substitution in the 3'UTR (SNP 2959A>G). Allele and genotype frequencies were calculated for each mutation, Hardy–Weinberg equilibrium was tested, and intergroup differences were analyzed. The genetic structure observed in the sample reflects characteristics of a mixed-breed population. This indicates potential for selecting animals with improved meat quality traits.

14:50– 15:00

EVALUATION OF POSTMORTEM COLOR VARIATION IN THE PSOAS MUSCLE OF AUBRAC CATTLE

Bianca Maria Madescu, Madalina Matei, Madalina Alexandra Davidescu, Ioana Bolohan (Acornicesei), Roxana Lazar, Marius Mihai Ciobanu, Paul Corneliu Boisteanu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

This study examined postmortem color changes in the psoas muscle of Aubrac cattle, considering both males and females. Lightness (L*), redness (a*), and chroma (b*) were measured at 0, 24, and 48 hours postmortem using the CIE Lab* system on standardized cylindrical samples. In males, lightness increased from 15.61 at 0 hours to 20.67 at 24 hours, with redness and chroma showing similar increases, followed by stabilization at 48 hours. In females, all color parameters peaked at 24 hours, with lower values at 0 and 48 hours. Significant differences were observed between sexes across all parameters, including hue intensity, color intensity, and saturation. These results indicate that postmortem color development in the psoas muscle is time- and sex-dependent, reflecting biochemical changes. Monitoring these early changes is essential for accurate meat quality assessment and predicting consumer perception. The psoas muscle of Aubrac cattle shows high visual appeal and quality, highlighting its suitability for premium beef production.

15:00– 15:10

STUDY OF GENETIC DIVERSITY AND PRESERVATION STRATEGIES OF ROMANIAN PINZGAU CATTLE

Madalina Alexandra Davidescu, Claudia Panzaru, Bianca Maria Madescu, Marius Gheorghe Dolis, Alexandru Usturoi, Andrei Ciobanu, Cristina Simeanu, Ioana Porosnicu, Ștefofil Creanga
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The Romanian Pinzgau cattle, currently endangered, was formed through crossbreeding Grey Steppe cows with Austrian Pinzgauer bulls and is well adapted to mountain and submountain regions (400–1600 m altitude) with fertile natural pastures and abundant rainfall. This breed is highly resilient and efficiently utilizes cellulose-rich forage, holding significant zootechnical importance. In this study, the Pinzgau population was genetically analyzed using mitochondrial markers (mtDNA), which allowed the identification of three main haplogroups, with haplogroup T3 being predominant in analyzed populatyion, confirming both considerable genetic diversity and demographic equilibrium. The purpose of the research was to assess genetic variability and establish phylogenetic relationships, providing a foundation for effective conservation strategies. The results highlight the necessity of applying reproductive biotechnologies, cryopreservation of genetic material, and the creation of gene banks to ensure the long-term preservation and protection of this valuable breed.

15:10–15:20

CONSUMER EVALUATION OF THE QUALITY AND ACCEPTABILITY OF HYBRID MEAT PRODUCTS

Roxana-Georgiana Bobeică, Elena-Oana Roșca (Parfenie), Gabriel-Vasile Hoha, Cătălin-Emilian Nistor, Benone Păsărin
„Ion Ionescu de la Brad" University of Life Sciences, Romania

In the current food industry, a key emerging trend is the partial replacement of animal protein with plant-based protein in meat products. This study aimed to evaluate the acceptability and quality of these innovative products by analyzing consumer behavior. Over a period of 30 days, a sample of 150 participants was analyzed, and the results outlined a clear profile: most consumers are from urban areas, have higher education, and are predominantly women. It was observed that lifestyle and residential environment significantly influence their preferences. The study concludes that consumers show an openness to hybrid products, with their preference being conditioned by taste, texture, and appearance—all essential elements for ensuring an experience similar to traditional meat preparations. A better understanding of these factors allows manufacturers to develop products that better meet market expectations. This trend suggests that the hybrid products market has significant growth potential, fueled by consumer demand for healthier and more sustainable alternatives.

15:20– 15:30

STUDIES ON THE QUALITY OF FOOD PRODUCTS ENRICHED WITH BUCKWHEAT, BASIL, SUNFLOWER OIL AND RAPESEED OIL

Roxana-Georgiana Bobeică, Elena-Oana Roșca (Parfenie), Gabriel-Vasile Hoha, Cătălin-Emilian Nistor, Benone Păsărin
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

This study investigates the impact of adding buckwheat and basil on the quality of food products formulated with sunflower and rapeseed oils. The research focuses on the chemical, functional, and sensory characteristics of the products, with the objective of demonstrating how these ingredients contribute to the creation of modern functional foods. Buckwheat is a pseudocereal rich in flavonoids, fiber, and high-biological-value proteins, known for its antioxidant properties and its contribution to improving the nutritional profile of food preparations. Basil, through its essential oils, provides a significant contribution of bioactive compounds with a protective effect against oxidative processes, as well as a highly appreciated aromatic profile. Sunflower oil, rich in vitamin E and polyunsaturated fatty acids, offers important nutritional benefits but shows lower oxidative stability. In contrast, rapeseed oil has a balanced fatty acid profile and higher resistance to degradation processes, which makes it suitable for functional formulations. By combining buckwheat and basil with these oils, products with superior nutritional value, improved stability, and increased sensory acceptability can be obtained. The study confirms the potential of these combinations in the modern food industry and outlines future directions for the development of innovative, healthier products adapted to the demands of contemporary consumers.

15:30–15:45

PHENOTYPIC CHARACTERIZATION OF RUSTIC PIG BREEDS IN ROMANIA AND ITS CORRELATION WITH THEIR PRODUCTION PERFORMANCE

Dionisie Kui, Șteofil Creangă
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Belonging to the natural environment for the sustainable use of animal resources in the environmental conditions of our country, but also in the context of climate change. Classification of

phenotypes in native pig breeds in Romania and presentation of their production directions. The role of raising rustic pig breeds in the country's economy and in the development of the rural environment. The use of meat production in the manufacture of authentic traditional products in specific areas as a mandatory factor in the classification of products with recognized geographical origin. Prospects for the growth and improvement of these breeds in the current context of consumer demand for high-quality meat and breeder demand for disease resistance and reasonable maintenance costs. Research stations in Romania that can actually provide biological material to support government programs and the information support they offer to ensure the success of the projects carried out. State policies that encourage the introduction of native pig breeds into breeding and farming, and the impact they have had on pig farming in extensive maintenance systems. The research is based on morphological analysis of local pig populations and data provided by the Ministry of Agriculture and Rural Development, followed by the collection of biological samples to establish genetic identity and diversity using molecular genetics laboratory methods, which demonstrate the spatial and temporal sustainability of individuals.

15:45–16:00

THE USE OF EXOGENOUS ENZYME IN MEAT TENDERNESS: CURRENT PATTERN - REVIEW

Adnana Gabriela Sandu, Otilia Cristina Murariu, Marius Mihai Ciobanu, Bianca Georgiana Anchidin, Paul-Corneliu Boișteanu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The texture of the meat reckons on many factors and is mutually dependent on the post-mortem period (natural aging - keeping the meat at refrigeration temperatures for a few days or weeks), a process that allows the meat to become tender under the action of proteolytic enzymes inside the cells. The emphasis of these enzymes involves glycolytic activity, a process that involves the metabolism of glycogen producing lactic acid and causing a decrease in muscle ph. Among the most important enzymes involved in the meat maturation process mentioned in the literature are the calpain-calpastatin system and the cathepsin-cystatin system. Meat aging by exogenous enzymes involves the use of plant-derived proteolytic enzymes. Over time, several proteolytic enzymes of plant origin have been used which have the potential to improve meat texture. Among the most commonly used are papaya (from papaya), bromelain (from pineapple), zingibin (from ginger), ficin (from figs/fruit), and actidine (from kiwifruit). The use of exogenous enzymes is of real importance for obtaining high-quality products that meet consumer standards for tenderness in meat products due to their technological properties.

COFFEE BREAK
$16^{00} – 16^{20}$

16:20– 16:30

ROSE HIP TEA AS A PHYTOGENIC ADDITIVE IN BROILERS DRINKING WATER - A REVIEW

Maria Stătescu, Silvia Ioana Petrescu, Ioan Mircea Pop, Paul Corneliu Boișteanu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

The welfare and productive performance of broiler chickens are influenced by a number of nutritional, microclimatic, and immunological factors that affect nitrogen metabolism, renal function, and intestinal health. Phytotherapy, through the administration of plant substances with antioxidant effects, is a promising strategy for supporting poultry health. This study synthesizes information on

the phytochemical composition and biological properties of rosehip extract (Rosa canina), with a focus on its administration in the drinking water of broilers. Active compounds such as vitamin C, flavonoids, tannins, and phenolic acids have antioxidant and antibacterial potential, which can modulate the intestinal microbiota, reduce oxidative stress, and influence nitrogen metabolism, with indirect effects on ammonia emissions. Studies indicate that rosehip tea administration may contribute to maintaining renal function and normal nitrogen excretion, being a natural and safe option for sustainable poultry meat production. Further research is needed to optimize the dose and form of administration, evaluate the impact on productive performance, and elucidate the molecular mechanisms by which the active compounds influence the health and welfare of broilers.

16:30–16:40

STUDY OF RENAL PATHOLOGIES AND THE IMPLICATIONS OF RENAL FUNCTION IN THE HOMEOSTASIS OF BIRDS

Maria Stătescu, Silvia Ioana Petrescu, Răzvan Mălăncuș, Paul Corneliu Boișteanu
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Renal pathologies in birds are an area of major interest in avian medicine, with direct implications for health and productive performance. The anatomical and physiological characteristics of the excretory system make it difficult to assess renal function, as urine sampling is not feasible in practice. Thus, blood biochemical analyses are the main method of ante-mortem diagnosis, being used to identify hyperuricemia, gout, nitrogen metabolism disorders, and other renal pathologies, but also to monitor physiological status on poultry farms. However, most kidney diseases are detected late, most often post-mortem, through morphohistological examination. Undetected kidney diseases cause significant disturbances in nitrogen metabolism, with a direct impact on homeostasis, and on morbidity and mortality at the herd level. In this context, phytotherapy emerges as a valuable adjuvant strategy, helping to support the growing organism and optimize hydration. This paper provides a summary of the latest data on renal physiology in birds and associated pathologies, with a focus on species of economic interest, such as the ROSS 308 broiler. The role of serum biomarkers in assessing renal function, current prevention strategies, and the research directions needed to implement solutions adapted to intensive farming systems are highlighted.

16:40– 16:50

ASSESSING THE CARBON FOOTPRINT OF EGG PRODUCTION: A COMPARATIVE CASE STUDY BETWEEN VARIOUS BREEDS USED IN ITALIAN FARMS

Getu Tsegu[1,2], Isabela Maria Simion[3], Chiara Citrà[4], Răzvan Mihail Radu-Rusu[3], Angelo Peli[1]
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Sustainability in egg production is a multifaceted concept that involves reducing the carbon footprints while addressing ethical concern and economic viability without compromising the demand of future generations. The genetic characteristics of a breed influence the consumption of natural resources and greenhouse gas emissions that can determine environmental sustainability. This study evaluated the impact of egg production using Life Cycle Assessment methodology for three commercial breeds (Lohmann LSL White, Lohmann Brown, and Hy-Line Brown) in Northern Italy. The objective was to compare the carbon footprints of egg production between breeds and assess how

feed scenarios and photovoltaic energy affect environmental sustainability. The system boundary was from cradle to farm gate, and the functional unit was established at 1 kg of eggs. The data was collected from egg production facilities and managers as well as operator interviews. The method Intergovernmental Panel on Climate Change (IPCC 2021) was used for the analysis of carbon footprints over a 100-year time horizon. The results indicated that compared to the reference Lohmann LSL White breed, which had the lowest (1.23 $KgCO_2$ eq Kg^{-1} eggs), the Lohmann Brown breed had an 81% (2.22 $KgCO_2$ eq Kg^{-1} eggs), and the Hy-Line Brown breed had 0.6% (1.23 KgCO2 eq Kg-1 eggs) higher carbon footprints. With variations between breeds, feed consumption was found to be the main contributor (53.8%) to the carbon footprint eggs. Transport was the second highest contributor (17%), followed by pullet rearing (16.8%), housing emissions (8.9%), and electricity (3.5%). The feed conversion ratios were the main factors for the differences between the breeds. Fossil-based greenhouse gas emissions were highest for the Lohmann Brown breed, while the Hy-Line Brown breed had the lowest. The primary factor for land transformation related emissions was the production of soybeans. Mitigation scenarios involving photovoltaic energy and the replacement of sorghum with local maize in the diet formula resulted in the reductions of carbon footprint by up to 19.7% for the Lohmann LSL White breed. The study provides valuable insights for the stakeholders to develop products with low carbon footprints using more efficient breeds that can address food security while promoting environmental sustainability.

16:50– 17:00

NATURAL GROWTH PROMOTERS: THE ROLE OF PHYTOBIOTICS IN POULTRY PRODUCTION

Laurian Cristian Cojocariu[1], Ioana-Miruna Balmuș[2], Alexandru Usturoi[1], Mircea Lazăr[1], Marius Giorgi Usturoi, Răzvan-Mihail Radu-Rusu[1]

[1]"Ion Ionescu de la Brad" Iasi University of Life Sciences

[2]"Alexandru Ioan Cuza University" of Iasi, Department of Exact Sciences and Natural Sciences

Global demand for poultry meat and eggs is rising, necessitating efficient and sustainable production techniques. The intensive poultry industry used to rely heavily on antibiotic growth promoters (AGPs). When added to feed at subtherapeutic levels, these chemicals were effective in improving growth rate, feed conversion ratio (FCR), and overall flock health by reducing subclinical illnesses and altering gut microbiota. Avilamycin, bacitracin, monensin, virginiamycin, and other AGPs are frequently used in poultry. However, because of the widespread and often negligent use of AGPs in animal agriculture, there are significant public health concerns regarding the development and spread of antimicrobial resistance (AMR) in bacteria that may be transmissible to humans. This led to a paradigm shift in regulatory policies. The European Union spearheaded this trend by completely banning the use of AGPs in animal feed in 2006. This decision was followed by many other countries, including the United States. In Canada and other Asian nations, the use of AGP has been limited or phased out completely (in the Veterinary Feed Directive from 2017).

This global ban has spurred a rush of research into safe, natural, and effective alternatives to protect poultry health and productivity without worsening the AMR pandemic. Phytobiotics have emerged as one of the most promising and thoroughly researched categories of possibilities. Phytobiotics, commonly referred to as phytogenics or herbal remedies, are compounds derived from plants that are incorporated into diets of animals in order to improve performance, health, and well-being. Natural and sustainable methods of producing chicken are represented by the growing consumer preference for "antibiotic-free" and "naturally raised" poultry products. Their diverse range of bioactive compounds offers several benefits, from improving gastrointestinal functionality and nutrient utilization for boosting immune system performance and stress reduction, all of which ultimately contribute to the production of safe and superior poultry products.

17:00– 17:10

RESEARCH QUALITY AND ANIMAL WELFARE: FROM KNOWLEDGE TO SKILLS—THE FUNDAMENTAL IMPACT OF PROFESSIONAL TRAINING IN LABORATORY ANIMAL SCIENCE

Laurian Cristian Cojocariu[1], Luyao Wang[2], Gaomiyang Liu[3], Anastasija Neimane[4], Paloma Malagon Lopez[5], Yi Quan Shawn Tay[6], Răzvan-Mihail Radu-Rusu[1]

[1] "Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania
[2] Utrech University, The Netherlands
[3] Autonomous University of Barcelona, Faculty of Veterinary Medicine, Spain
[4] "Tor Vergata" University of Rome, Department of Biomedicine and Prevention, Italy
[5] Univ. Hosp., Dep. of Plastic Surgery, Autonomous University of Barcelona, Spain
[6] National University of Singapore

Professional training in laboratory animal science forms the foundation of both research quality and animal welfare. The evolution from theoretical knowledge to practical competency, supported by regulatory frameworks such as the European Directive 2010/63/EU, underscores the importance of structured and harmonized training programs. Oversight by Animal Welfare Bodies and IACUCs ensures adherence to the 3Rs principles—replacement, reduction, and refinement—while fostering transparency and continuous improvement. Training encompasses researchers, technicians, veterinarians, and support staff, emphasizing technical proficiency, ethical awareness, and adaptive problem-solving. Educational approaches that integrate compassion stress management, communication, and mentorship further enhance well-being and cultivate a strong culture of care. Ultimately, competency-based and continuing professional development programs not only ensure legal compliance but also translate knowledge into humane, refined practices that strengthen animal welfare, research integrity, and the credibility of scientific outcomes.

17:10– 17:20

STUDY ON THE USE OF NEW FEED SOURCES IN FISH NUTRITION

Horia Ioanid Stan[1], Alin Barbacariu[2*], Cristina Gabriela Radu-Rusu[1], Daniel Simeanu[1]

[1] "Ion Ionescu de la Brad" University of Life Sciences, Romania
[2] Res. and Dev. St. for Aquaculture and Aquatic Ecology, "Alexandru Ioan Cuza" University, Iasi, Romania

The study aimed to evaluate the potential of alternative feed ingredients in common carp (Cyprinus carpio) nutrition within a recirculating aquaculture system. Two experimental approaches were carried: partial replacement of fishmeal with Black Soldier Fly (Hermetia illucens) larvae meal and supplementation with thyme essential oil. Ninety carp specimens were distributed in experimental groups and fed diets formulated with varying levels of insect meal (10% and 30%) or with thyme oil (0.2%). Growth performance, feed conversion, and muscle biochemical composition were analyzed. Results showed that the inclusion of insect meal improved lipid content and maintained growth performance comparable to the control diet, while thyme oil supplementation had positive effects on feed intake and health status. These findings highlight the potential of novel, sustainable feed ingredients to partially replace traditional fishmeal and support ecological and cost-effective aquaculture practices.

17:20– 17:30

MELATONIN AND PHYTOMELATONIN USED AS BIOACTIVE SUBSTANCES IN ANIMAL AND HUMAN NUTRITION

Vasile-Cosmin Andronachi[1], Mădălina Matei[1], Cristina Gabriela Radu-Rusu[1], Vasile Vintilă[2], Ioan Mircea Pop[1], Daniel Simeanu[1]

[1] "Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
[2] Dancu Cattle Breeding Research and Development Station, Holboca, Iasi, Romania

Nutrition and diet are two essential components for maintaining life and the optimal health of the entire body, and a proper diet, combined with good-quality sleep, are two factors generally associated with promoting a healthy and balanced lifestyle. Sleep is a natural physiological manifestation that serves to keep the entire body in a state of rest necessary for recovery and for the synchronization of most physiological, metabolic, and biological processes, which generally take place at varying intensities under the influence of the photoperiod. Melatonin is a biochemical compound produced by the pineal gland of vertebrates, serving as a biological signaler that informs the body about the type of photoperiod in the external environment and stimulates the initiation of sleep. In this paper, I conducted a detailed analysis of the specialized literature on melatonin, starting with the first evidence reported in 1917, which provided clues about the existence of this substance, and ending with the most recent documented information up to 2025, highlighting the importance of melatonin in nature through the roles and functions it performs in living organisms.

17:30– 17:40

MELATONIN AND PHYTOMELATONIN USED AS BIOACTIVE SUBSTANCES IN ANIMAL AND HUMAN NUTRITION

Vasile-Cosmin Andronachi[1], Mădălina Matei[1], Cristina Gabriela Radu-Rusu[1], Vasile Vintilă[2], Ioan Mircea Pop[1], Daniel Simeanu[1]

[1] "Ion Ionescu de la Brad" Iași University of Life Sciences, Romania;
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FRIDAY, OCTOBER 24th, 2025

POSTERS SECTION
ANIMAL SCIENCES, FOOD SCIENCES, AGROTOURISM & ECONOMICS

➔ Faculty of Food and Animal Sciences, Marble Hall

9:00 – 12:00
Chairpersons: Prof. Răzvan-Mihail RADU-RUSU, PhD
Assoc. prof. Alexandru USTUROI, PhD
Secretariat: Lecturer Dragoș-Mihai LĂPUȘNEANU, PhD
Assist. prof. Matei MĂDĂLINA, PhD

THE INFLUENCE OF HEAT STRESS ON THE MAIN QUALITY INDICATORS OF MILK PRODUCTION IN A HERD OF DAIRY COWS BELONGING OF THE ROMANIAN SPOTTED BREED

Gabriela Amarițiii[1], Andra-Sabina Neculai-Văleanu[2,3], Felicia Țenu[1], Vasile Maciuc[1]
[1]"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
[2] Romanian Academy of Scientists, Bucharest, Romania
[3]Rural Development Research Platform, Letcani, Iasi county, Romania

The aim of the study is to analyze the dynamic of the main quality indicators of milk production over the period 2023 - 2024 for a herd of dairy cows belonging to the breed Romanian Spotted exploited in condition of a farm from Iași county, NE Romania. The data were obtained from the Official Production Control and were statistically processed using the computer programs SAVC and SPSS 16.00. Under heat stress conditions, changes are observed in the chemical composition of the milk for the THI ≥ 64 threshold. Thus, the content of components such as protein and fat in milk begins to decrease from this threshold to 3.94% and 3.41%, respectively. Milk production decreases drastically for the THI ≥ 72 threshold to 9.64 kg, which also determine a reduction in lactose content to 4.66%. Casein synthesis is also affected and under the action of heat stress, its content in milk decreases to 25.44%. Heat stress is a factor that influences milk production from a quantitative but also qualitative point of view, therefore measures must be taken to minimize its effects during the summer month in particular.

EX-VIVO ASSESSMENT OF ALTERNARIOL MONOMETHYL ETHER (AME) EFFECTS ON INTESTINAL INTEGRITY IN SWINE

Valeria Cristina Bulgaru[1], Gina Cecilia Pistol[1], Solcan Carmen[2], Daniela Eliza Marin[1], Ionelia Taranu[1]
[1] National Research-Development Institute for Animal Biology and Nutrition (IBNA), Balotesti, Ilfov, Romania
[2] "Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Alternariol Monomethyl-ether (AME) is a mycotoxin produced by fungi of the genus Alternaria in many row materials. There is little data on the AME toxicity on animals and humans. In the current study healthy weaned pigs' jejunum explants were exposed to different AME concentrations (5–20 µg/mL) for 4 hours and the effects on histological changes and epithelial integrity markers (tight-junction proteins (TJPs: Claudin 2, Claudin 4, Occludin and Zonula 1) and extracellular matrix (ECM1, MUC1, MUC2) was measured. The results showed that even at low

concentrations, AME produced changes in the tissue morphology. Compared to the control group, where the presence of intestinal villi with columnar epithelium and striated plateau that maintains its integrity is observed, the exposure to AME, induced complete detachments in some areas and diffused lymphoid infiltrations. Also, AME decreased the gene and protein expression of TJPs and significantly increased that of MUC1. In conclusion, our results showed that AME can not only modify the tissue histology, but also the gene and protein expressions of important markers of intestinal epithelium integrity in pigs.

GENETIC DIVERSITY IN THE INTRON 1 REGION OF THE MYOSTATIN GENE (MSTN) IN TELEORMAN BLACK HEAD SHEEP

Andrei Ciobanu[1], Mihaela Ivancia[1], Constantin Pascal[1], Daniel Simeanu[1], Alexandru-Gabriel Vartic[1,2], Ștefofil Creangă[1]
[1]"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
[2]Research and Development Institute for Sheep and Goat Breeding Palas - Constanta, Romania

Myostatin (MSTN) is a major regulator of muscle development, and sequence variability in its regions can provide useful insights into genetic diversity and potential marker-assisted selection. The aim of this study was to evaluate the nucleotide composition and haplotypic structure of the MSTN intron 1 region in the Cap Negru de Teleorman (CNT) sheep breed. Genomic DNA was extracted from blood samples collected from 14 individuals, and the targeted region was amplified and analyzed. The nucleotide composition showed a balanced distribution, with adenine (A) as the most frequent base (32.5%), followed by thymine (T, 29.8%), guanine (G, 21.7%), and cytosine (C, 16.2%), reflecting a relatively conserved profile. Haplotype analysis identified three variants: H_1 (57.1% of individuals), H_2 (35.7%), and a rare singleton H_3 (7.1%). The haplotype network revealed a simple structure, with H_2 occupying a central position and the other haplotypes derived through a small number of substitutions. Linkage disequilibrium (LD) values were moderate ($D \approx 0.2–0.25$), indicating a limited conserved block within intron 1. Phylogenetic analysis grouped individuals according to haplotypes with consistent bootstrap support. These findings suggest that the CNT population maintains a stable haplotypic core, complemented by low-frequency variants, providing baseline genetic information with potential relevance for future breeding and conservation strategies.

SUSTAINABLE MANAGEMENT PRACTICES AND THEIR IMPACT ON THE BEHAVIOUR OF GAME SPECIES

Traian Crăciunaș, Mugurel Munteanu, Dumitrel Tîrziu, Marius Mihai Ciobanu, Paul Corneliu Boișteanu
"Ion Ionescu de la Brad"Iași University of Life Sciences, Romania

The aim of this paper was to assess the impact of sustainable management practices on the ethology of game fauna, by analyzing the specialized literature. The method used consisted of reviewing relevant studies, selected from international scientific sources, that addressed the concepts of game resource management, sustainability principles and associated effects on the behaviour of species of interest. The results of the analysis highlighted the fact that the applied management practices, such as food management, habitat management, species management and predator control, have a direct impact on the behaviour of game fauna, influencing distribution, feeding behaviour, reproductive strategies and social interactions. Also, numerical fluctuations of populations, determined by natural or anthropogenic factors, can be balanced by applying sustainable measures, focused on the precautionary principle and habitat conservation. The analysis showed that habitat loss and fragmentation, pollution and illegal trade remain major risk factors, requiring adapted

interventions.

MONITORING THE ENVIRONMENTAL CONDITIONS AND THE HEALTH STATUS OF FISH MATERIAL IN A FISH FARMING – BRĂILA COUNTY

Daniela Ecaterina Crăescu[1], Magdalena Tenciu[1], Floricel Maricel Dima[1,2]
[1]Research and Development Institute for Aquatic Ecology, Fisheries and Aquaculture, Galați, Romania;
[2]Faculty of Engineering and Agronomy of Braila, University "Dunărea de Jos" Galați, Romania

This study aims to analyze the environmental conditions and the health status of the fish material from the fishery arrangement, located in Brăila County. The study was conducted from April 2023 to March 2024 and included measurements of the physico-chemical characteristics of the water, such as temperature, pH, dissolved oxygen, and nutrient concentrations, including nitrogen and phosphorus. The examination of the fish pathology of carp revealed specific lesions of erythrodermata, pale gills, and the presence of myxospordia in one of the examined fish. This research highlights the importance of continuous monitoring of environmental conditions and the health of fish to prevent potential ecological and economic associated with fishery practices. Regardless of the quantitative structure and seasonal diversity, their low values indicate a reduced food source for the fish in this aquatic ecosystem.

POPULATION DYNAMICS AND EXPLOITATION PATTERNS OF COMMON CARP (CYPRINUS CARPIO) IN THE DANUBE RIVER, KM 1047–1071

Angelica Dobre[1,2], Maria Desimira Stroe[1*], Dănuț Mirea[1], Alina Nicoleta Macoveiu (Dobre)[1,3], Floricel Maricel Dima[1,4]
[1]Institute of Research and Development for Aquatic Ecology, Fishing and Aquaculture, Galați, Romania
[2]University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
[3]Faculty of Food Science and Engineering, "Dunarea de Jos" University of Galati, Romania
[4]Faculty of Engineering and Agronomy of Braila, "Dunarea de Jos" University of Galati, Brăila, Romania

This study evaluates the biological status and population dynamics of the common carp (Cyprinus carpio) in the Danube River, between km 1047–1071. A total of 192 individuals were sampled, and their length-frequency distribution was used to estimate growth and mortality parameters. Growth parameters were estimated using the von Bertalanffy Growth Function, resulting in $L\infty$=75.6 mm, K=0.63 $year^{-1}$, t_0=−0.70 year and the growth performance index Φ'=3.56, indicating moderate growth potential. Mortality analysis showed total mortality (Z=2.07 $year^{-1}$), with natural mortality (M=0.81 $year^{-1}$) and fishing mortality (F=1.26 $year^{-1}$), resulting in an exploitation rate (E=0.61), suggesting high fishing pressure on the population. These results provide a comprehensive overview of the carp population dynamics, supporting sustainable management and conservation strategies in the studied freshwater system.

EVALUATION OF THE NUTRITIONAL QUALITY OF NATURALLY DRIED MULBERRY LEAVES

Marius Gheorghe Doliș[1], Georgeta Diniță[2], Marius Laurian Maftei [2], Mădălina Alexandra Davidescu[1], Alexandru Usturoi[1], Claudia Pânzaru[1]
[1] "Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
[2] University of Agronomic Sciences and Veterinary Medicine of Bucharest

At present, owing to their nutritional value, mulberry leaves are no longer used exclusively as feed in sericulture but are increasingly incorporated into the diets of various livestock species. Consequently, mulberry cultivation may contribute to reducing reliance on conventional forage resources, which are becoming progressively more expensive, by providing a more cost-effective alternative for animal feeding. In this context, the present study evaluated the nutritional quality of mulberry leaves harvested at different growth stages and preserved by natural drying. The results indicated that naturally dried mulberry leaves contained, on average, 91.86% dry matter (DM), 21.79% crude protein (CP), 6.56% crude fiber (CF), and 9.59% ash.

REVIEW OF ZOOTECHNICAL PARAMETERS USED IN THE MANAGEMENT OF GHG EMISSIONS AND ATMOSPHERIC POLLUTANTS ASSOCIATED WITH BEEF CATTLE FARM

Dănuț Nicolae Enea[1], Dana Cătălina Popa[1], Răzvan Alexandru Popa[1], Livia Vidu[1], Elena Pogurschi[1], Monica Marin[1], Alexandru Vulpe[2], Ana-Iulia Nicodim[1]
[1] University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
[2] BEAM INNOVATION SRL, Romania

Beef cattle production represents an important source of food security, but at the same time a major source of greenhouse gases (GHG) and atmospheric pollutants, primarily methane (CH_4) from enteric fermentation, nitrous oxide (N_2O) from manure management and soils, and ammonia (NH_3) as a precursor of secondary particulate matter. Accurate quantification and mitigation of these emissions require a comprehensive evaluation of zootechnical parameters that directly influence emission factors and farm-level inventories. This review examines core parameters including dry matter intake, feed conversion ratio, average daily gain, reproductive performance, and herd structure, as well as manure output and management practices. The analysis highlights the variability induced by breed-specific characteristics, production systems, nutritional strategies, microclimate parameters and discusses methodological approaches used for integrating zootechnical indicators into emission models and prognosis frameworks. Current evidence emphasizes the critical role of standardized data collection and harmonized modeling protocols in reducing uncertainties in emission estimates. Strengthening the linkage between zootechnical performance metrics and environmental impact assessment is essential for the development of science-based mitigation practices and for supporting policy frameworks targeting sustainable beef cattle production.

ALTERNATIVE PROTEIN SOURCES IN BROILER NUTRITION: NATIONAL OPPORTUNITIES AND GLOBAL CHALLENGES FOR SUSTAINABLE PRODUCTION

Georgiana Magdalena Pîrlea (Gheciu Pîrlea), Ștefan Teofil Vlad, Ionela Florentina Toma, Andrada Elena Moise, Andreea Ionela Zinca, Horia Grosu
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

Chicken meat is, globally, one of the most efficient sources of animal protein, due to superior feed conversion and the rapid growth rate of poultry species. However, it relies heavily on soybean meal—a largely imported resource with significant economic and environmental impact. In the

current context, marked by international market volatility and the growing pressure for sustainability, diversifying protein sources has become a strategic priority. This paper analyzes the nutritional composition, economic feasibility, and practical potential of alternative protein sources in broiler nutrition, with a focus on locally available ingredients: sunflower meal, rapeseed meal, and grain legumes (peas, chickpeas, lentils). The advantages and limitations of each source are discussed in the national context, alongside international trends (insect meal and algae-based proteins), and their implications for zootechnical performance, meat quality, and sustainability. The conclusions support the combined use of local ingredients, balanced with synthetic amino acids, as a viable alternative to conventional soybean-based formulations, aiming to reduce feed costs and carbon footprint.

GREENHOUSE GASSES MITIGATION STRATEGIES IN RUMINANT FARMS

Mihail A. Gras, Catalin M. Rotar, Madalin G. Manole, Catalin Dragomir
The National Research - Development Institute for Animal Biology and Nutrition, Balotesti-Ilfov, Romania

Ruminant greenhouse gases mitigation is technically feasible today using a portfolio of strategies matched to production context. Near-term high-impact options include enteric inhibitors (3-nitrooxypropanol where available; Asparagopsis ssp. as supply and safety constraints are resolved), improved feed quality and precision nutrition (lipids inclusion), manure methane capture or storages with covers, and productivity-focused herd management. Medium-term gains arise from genetics, pasture improvement, and soil carbon, provided MRV and permanence are addressed. Optimizing combinations through whole-farm LCA (Life Cycle Assessment), safeguarding animal health and product quality, and embedding robust MRV (Measurement, Report and verification system) within supportive policy will be key to delivering durable, cost-effective climate benefits while sustaining ruminant production.

PROBIOTIC IMPACT ON PRODUCTIVE TRAITS AND NITROGEN DIGESTIBILITY IN AO /T SILKWORMS *BOMBYX MORI.* L

Mihaela Hăbeanu, Anca Gheorghe, Nicoleta Aurelia Lefter, Ramona Frunză, Melania Florentina Andrei, Covaşă Mihăiţă, Teodor Mihalcea
Research Station for Sericulture Băneasa-Bucharest, Romania

A concentrated probiotic (CP), comprising two strains of Enterococcus faecium and rosemary extract, was utilized to investigate effects on silkworm morpho-productive traits and N digestibility. The trial was carried out during the 5th instar on 300 silkworms B. mori AO/T, allocated to 3 groups: 1. control (C) fed mulberry leaves, 2. experimental 1 (CP-1) fed mulberry leaves +2% CP 3. experimental 2 (CP-2) mulberry leaves + 6% CP. Six larvae/group were dissected on the 5th and 7th D for weighting the silk glands and for estimating productivity. An increase in body weight (+1.64% CP-2 vs. C, +1.59 CP-1 vs C, P>0.05) and average daily gain (+1.89%, CP-2 vs. C, +1.97 CP-1 vs C, P>0.05) was noticed. The more pronounced effects were observed by adding 2% CP in diet (silk gland weight +0.85%, productivity +0.84%). Average daily intake was higher in CPs groups. The percentage of excreta from the intake was slightly reduced in the groups with the addition of CP (P=0.41). % N excreted from intake was 23% lower in CP-1 and % N digestibility was higher in CP-1 (78% vs 71%). We showed that probiotic have potential to enhance AO/T silkworm economic traits and N digestibility.

COMBINED EFFECTS OF BIOSTIMULANT AND HERBICIDE APPLICATION ON *MEDICAGO SATIVA* L.

Maria Alexandra Iepan[1], Sandra Florina Lele[1], Florica Morariu[1], Beatrice Ana-Maria Sîrbu[1], Cătălin Bogdan Sîrbu[1], Ioan Bogdan Peț[2], Nicolae Florin Popa[3], Ioan Peț[1]
[1] University of Life Sciences "King Mihai I", Timisoara, Romania
[2] "Victor Babeș" University of Medicine and Pharmacy, Timișoara, Romania
[3]Colegiul Economic "Francesco Saverio Nitti", Timișoara, Romania

Ambrosia artemisiifolia L. is an invasive weed species with major agronomic, economic and sanitary negative impact, reducing crop yield through intense competition for resources and producing highly allergenic pollen with harmful effects on human health. Alfalfa (Medicago sativa L.), is most vulnerable in the first developmental periods, when biomass accumulation is slow and seedlings cannot effectively compete for resources, leading to significant loss in stand density and productivity. The presence of A. artemisiifolia in M. sativa forage pastures is problematic, as it has no nutritional value and may even be harmful to livestock. The aim of this study is to evaluate the weed control of efficacy and selectivity of halauxifen-methyl and imazamox, applied individually and in combination with biostimulants, in a M. sativa forage field infested with a A. artemisiifolia population. While halauxifen-methyl is not currently registered for use on this crop and no official data exists regarding its application with biostimulants, imazamox is approved and is the comparative standard for this trial. This study seeks to highlight the potential of halauxifen-methyl as a treatment of alfalfa, as well as the role of biostimulants in reducing herbicide-induced stress and enhancement in M. sativa tolerance to herbicides during its early developmental stages. The mixture of halauxifen-methyl with and biostimulants provided the highest control levels, ranging from 70 to 95% during the teial period. A. artemisiifolia, control reached 90 - 95% at 28 days after application, compared to 85- 90% without a biostimulant. Alfalfa injury symptoms in the variant treated with halauxifen-methyl and biostimulants were transient, consisting mainly of slight to moderate chlorosis, with the plants fully recovering by the thrid assessment, at 42 days after the application. This study confirms that the post-emergence application of halauxifen-methyl at 1 L/ha combined with biostimulants, provided excellent control against A. artemisiifolia. These results demonstrate that the combination of herbicides and biostimulants offer a great potential option for an efficient and sustainable chemical control.

EVALUATION OF THE MORPHO-METRIC INDICES OF LOCAL BEES FROM THE QUEEN REPRODUCTION APIARY

V. Jereghi, I. Cataraga, I. Petcu, A. Vutcariov, A. Romanov
Technical University of Moldova, Chișinău, Republic of Moldova

The purpose of the research is to evaluate the morphometric indices of local bees, select the most relevant genotypes adaptable to natural conditions and form the brood batch from maternal and paternal families for queen reproduction. It was evaluated that the morphometric indices of worker bees from maternal colonies constitute on average: proboscis length – 6.41 mm, the size between the protrusions of tergite-3 – 4.44 mm, tergite-3 length – 2.13 mm, sternite-3 width – 3.87 mm, sternite-3 length – 2.59 mm, length of the cerci mirrors of sternite-3 – 2.23 mm, width of the cerci mirrors of sternite-3 – 1.50 mm, length of the right greater wing – 8.73 mm, width of the right greater wing – 2.95 mm, cubital index – 34.94%, tarsus length – 1.89 mm, tarsus width – 1.04 mm and positive discoidal dislocation – 82.65% and neutral – 17.35%. Larvae aged 8-12 hours were collected from the maternal colonies for transfer to the queens' reproduction. It was revealed that the amount of honey extracted from a colony of bees using pastoral beehives is 63.3-73.8 kg. It was found that local bees are better adapted and resistant to the Varroa mite than Carpathian bees imported from abroad.

THE DYNAMICS OF TECHNICAL AND ECONOMIC INDICATORS IN THE GROWTH OF SHEEP FOR MEAT

Alexandra Marina Manolache, Rodica Chetroiu
Research Institute for Agricultural Economy and Rural Development, Bucharest, Romania

The paper aims to analyse the evolution of technical and economic indicators in sheep farming for meat production during the period of 2019–2024. It considers and analyses essential indicators such as production value, total expenditure level, feeding costs, investments in biological material, taxable income, net income with subsidies, net profitability rate, production costs, and marketing price. The calculations were made based on input allocations according to technologies and following the economic formulas for indicators studied. The findings show that the largest shares in the expenditure structure were represented by feed and biological material, while subsidies have decisively contributed to maintaining the stability of net income. The evolution of the selling price and production cost reflects the vulnerability of the field to market changes and how resources are managed. The paper highlighted the relationship between technical performance and economic sustainability, and the necessity to increase sheep farms efficiency and profitability.

EFFECT OF APPLE AND CARROT POMACE EXTRACTS ON PORCINE INTESTINAL EPITHELIAL CELLS IPEC-1

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Agro-industrial waste can be a valuable ingredient of animal feed that can reduce feed costs, minimize environmental impact, and improve the sustainability of animal production. However, the use of waste in animal nutrition needs further in vitro and in vivo tests, in order to establish the best inclusion rate for the achievement of best performances. The present paper aims to investigate the effect of individual and combination of apple and carrot pomace extracts on the porcine intestinal epithelial cells line IPEC-1. IPEC-1 cell cultures were treated with apple and carrot extracts in different dilutions for 24h and cell cytotoxicity was measured using MTT. Interaction between fruit pomace extracts were analyzed using the Chou and Talalay method. Exposure of IPEC-1 cells to individual pomace extracts or their mixture induced a dose dependent decrease of cell viability. This decrease was more pronounced for apple extract, that has proven a high cytotoxic effect at the lowest dilutions. The exposure of cells to the combination of both apple and carrot extracts results in an intermediate effect on cell viability than that produced by the exposure to each individual extract. The interaction between the two extracts was mainly antagonist for lower concentrations turning into synergic effect for the concentrated extracts. These toxicity data should be considered in formulation of feed for swine in order to find the best inclusion rate of apple and carrot pomaces.

EVALUATION OF SOME INDICES OF BEEF CONTAMINATION

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Beef contamination can occur at multiple points along the production chain: during animal rearing (via feed, water, or environment), in slaughterhouses (through improper handling or unclean equipment), or during transport and storage (EFSA, 2023). The determination of these contamination indicators is essential for assessing food safety risks and for implementing effective preventive measures. Microscopic analysis of the number of cocci bacteria in beef samples, in accordance with international standards for meat freshness assessment, reveals significant differences among the three

processing halls examined. Regarding surface microflora, the meat from Hall 3, with 9.00 cocci per microscopic field, falls into the "fresh meat" category, indicating minimal microbial load. On the contrary, meat from Halls 1 - 18.33 and 2 - 14.00 cocci per microscopic field shows a higher degree of contamination and is classified as "less fresh meat," suggesting the onset of microbial spoilage, though still within the limits considered acceptable for consumption.

REVIEW REGARDING BROILER PRODUCTION SYSTEMS AND MEAT QUALITY

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This paper investigates the influence of intensive, free-range and organic broiler production systems on growth performance, meat quality, animal welfare and consumer perception. Based on literature data, the analysis considers parameters such as stocking density, slaughter age, genotype, feeding and microclimate conditions, as well as their impact on composition, color, texture, pH, water-holding capacity, oxidative stability and microbiological safety. The synthesis shows that intensive systems ensure efficiency and yield but may compromise welfare and certain sensory traits, while alternative systems provide nutritional and sensory benefits and greater consumer acceptance, although with higher production costs and oxidative susceptibility. The review highlights the need for integrated approaches that balance productivity, sustainability and ethical standards in poultry production.

THE INFLUENCE OF AGE AT FIRST CALVING ON THE EVOLUTION OF MILK PRODUCTION OVER THREE YEARS IN LAPTE PALAS SHEEP BREED

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Sheep farming is an old tradition of the Romanians, and interest in sheep's milk and its derivatives has increased in recent decades. In 2010, ICDCOC Palas, Constanța, homologated the Lapte Palas breed, created over 35 years by crossing the East Frisian and Awassi breeds with the Merino Palas breed. The advantages of creating the Lapte Palas sheep breed are lower acquisition costs, very good adaptability to the geo-climatic conditions specific to our country and to traditional exploitation conditions, as well as a greater capacity to capitalize on food resources compared to imported breeds. This study follows the evolution of the milk quantity in 52 Lapte Palas sheep, over 3 years, exploited in a traditional way, with the establishment of the correlation between milk production and age at first calving. In group 1 (n= 26 sheep that calved before the age of 2 years) there were no significant differences ($p>0.05$, $p=0.107486$) between milk production in the first 3 lactations, while in group 2 (n=26 sheep that calved between 2 and 3 years of age) there were significant differences between the 3 lactations ($p<0.05$, $p=0.042287$).

REPRODUCTIVE PERFORMANCE OF SHAGYA ARABIAN BROODMARES AT THE RĂDĂUȚI STUD FARM

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The quality of biological material and reproductive performance represents a constant focus in stud farm management. In this study, a group of 19 Shagya Arabian mares was monitored and evaluated for key reproductive traits. These females, promoted to broodmare status from the 2016–2018 generations, were part of the nucleus herd at the Rădăuți Stud Farm. The results showed that the mean age at first breeding was 1432.05 ± 22.49 days, while the mean age at first successful mating was 1397.53 ± 107.63 days. Gestation length, depending on the number of foalings, ranged from 337.08 ± 8.95 days to 347.20 ± 28.02 days. The average service period and foaling interval were 184.92 ± 251.00 and 367.08 ± 170.14 days. These findings are generally consistent with data reported in the scientific literature, as well as with values previously recorded in broodmares from earlier generations.

POSTBIOTICS AS EMERGING ALTERNATIVES FOR GUT HEALTH AND PERFORMANCE IN MONOGASTRICS

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In recent years, the gut microbiome has become one of the most studied topics in both human and veterinary medicine, particularly in light of the need to reduce the excessive use of antibiotics and combat antimicrobial resistance. The family of "biotics", which includes prebiotics, probiotics, synbiotics, and, more recently, postbiotics, offers promising alternatives for maintaining animal health and preventing dysbiosis. In this context, a new category, postbiotics, defined as "non-viable products or microbial metabolites with a beneficial effect on the host" has attracted increasing interest. Studies conducted to date show significant beneficial effects in monogastric animals. In pigs, postbiotics reduce post-weaning diarrhea and improve growth performance; in poultry, they optimise feed conversion, reduce pathogen colonisation, and support intestinal health; and in companion animals, emerging data suggest benefits for digestive health, including allergy control. This study aims to synthesize the latest available data on the use of postbiotics in farm and companion monogastric animals, focusing on mechanisms of action, demonstrated effects, and potential practical applications.

MICROPLASTICS AND NANOPLASTICS IN THE FOOD CHAIN OF FARM ANIMALS: IMPACTS ON HEALTH AND PRODUCTIVITY

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Pollution from microplastics (MP) and nanoplastics (NP) has emerged as a central concern in environmental and health research. While most studies focus on aquatic ecosystems, recent evidence highlights direct contamination of livestock farms through feed, water, soil, and equipment. Ingested particles disrupt the gut microbiome, inducing dysbiosis, local and systemic inflammation,

and reduced digestive efficiency. Chronic exposure is associated with metabolic disorders, oxidative stress, and liver dysfunction, with consequences for growth, reproduction, and overall productivity. Detection of plastics in milk, meat, and eggs suggests direct transfer to consumers, raising significant food safety and public health concerns. Within the One Health framework, these findings emphasize the interdependence of animal, human, and environmental health, underlining the urgent need for monitoring, risk mitigation, and integrated management strategies. This paper provides an integrated review of exposure sources, physiological effects, and broader health implications of MNP in animal production.

NATURAL PROBIOTIC ALTERNATIVES FOR SUSTAINABLE BROILER PRODUCTION

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The present study aims to investigate the influence of administering natural probiotics (kefir, whey, and yogurt) on growth performance, feed intake, and health status in Ross 308 broiler chickens reared under a semi-intensive system. The experiment was conducted over six weeks on four groups of broilers, all receiving the same standard feed, with the only difference being the type of drinking water provided: plain water for the control group and water supplemented with different probiotics for the experimental groups. Monitoring of body weight, feed intake, feed conversion ratio, and health status highlighted the positive effects of probiotics, particularly yogurt and kefir, on growth performance and feed conversion efficiency, without negatively affecting the birds' health or survival rate. The results emphasize the value of natural lactic probiotics as an economical, safe, and sustainable solution that can enhance productivity and reduce dependence on synthetic growth promoters in broiler chicken production.

TESTING OF MILKING MACHINE WITH FLOW CONTROLLED VACUUM

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A relatively new concept is in the design of milking machines is taking into account a dynamic control strategy, based on adjusting the vacuum level in accordance with the milk flowrate; tests led to the conclusion that system vacuum should be lower when the milk flowrate is low and should be increased when milk flowrate increases. In the present investigation the vacuum level was regulated by the means of a variable frequency drive (VFD), controlling the speed of the vacuum pump; the vacuum level was adjusted as a function of the flowrate (lower vacuum when the flowrate was low and an increased vacuum when the flowrate increases), aiming to compensate for the vacuum drop due to the liquid being moved through the milk tube. A PID controller was used in order to drive the vacuum pump of the system; The flowrate threshold reference (TR) was set at 1,94 l/min; the setpoint (SP) of the PID controller (desired vacuum level) was defined taking into account the flowrate, as follows: (a) if the flowrate was lower than TR, then SP = 0.42 bar; (b) if the flowrate was higher than TR, then SP = 0.45 bar. Wet tests have proven that the vacuum level in the system was affected by presence of the liquid column in the milk line; as a result, the standard deviation of the vacuum level was comprised between 0.067 kPa and 1.43 kPa (depending on the flowrate and vacuum level), while in the previous dry tests the standard error was comprised between 0.186 kPa and 0.194 kPa. Nevertheless, vacuum fluctuations didd not exceed the imposed limit of ±2kPa relative to the nominal vacuum in the flow controlled vacuum system. The tests were performed at different flow

rates (from zero to 3.9 l/min); the average system response time to flow rate change was 9 s when the original claw was used. In order to reduce the vacuum fluctuations, the original claw of the installation was replaced with a larger one, with a volume of 330 cm^3; under these conditions, the system response time decreased to 8 s.

REPRODUCTIVE PERFORMANCE OF BROWN SWISS CATTLE IN SUB-CARPATHIAN ROMANIA

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The present study aimed to evaluate the reproductive performance of Brown Swiss cattle (Brună) raised in three sub-Carpathian counties of Romania: Argeș, Dâmbovița, and Prahova. A total of 2017–2023 farm records were analyzed, focusing on key reproductive parameters such as age at first calving, calving interval, days open, and service per conception. Data were processed using descriptive statistics (mean, standard deviation, coefficient of variation, and standard error of the mean), and comparisons were performed both at farm and county level. Results highlighted significant differences between farms and counties, with some herds maintaining reproductive intervals closer to the optimal thresholds, while others showed prolonged calving intervals and increased services per conception. These findings emphasize the need for improved management strategies and targeted interventions in order to enhance reproductive efficiency and ensure the sustainable development of Brown Swiss cattle farming in the region.

RENEWABLE ENERGY SOURCES IN AQUACULTURE: OPPORTUNITIES AND CHALLENGES

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Global population growth to nearly 10 billion by 2050 will intensify food and energy demands, raising concerns about sustainability. Aquaculture plays a key role in food security but also generates environmental impacts, including greenhouse gas emissions, resource depletion, and ecosystem degradation. Rising fuel costs and climate policies highlight the need for greener practices. Integrating renewable energy sources—such as solar, wind, or residual heat recovery—can reduce dependence on fossil fuels, lower operational costs, and improve efficiency, especially in remote locations. However, adoption depends on site-specific conditions, economic feasibility, and infrastructure. Environmental impact assessments remain essential to ensure ecosystem resilience. This paper examines the opportunities and challenges of renewable energy in aquaculture, underlining its potential to support climate change mitigation and sustainable food systems..

PERSPECTIVES ON THE INFLUENCE OF PUMPKIN SEED MEAL AND PUMPKIN SEED CAKE AS ALTERNATIVE SOURCES FOR ENHANCING THE NUTRITIONAL VALUE OF MILK

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The growing interest in functional dairy products and the need to reduce dependence on conventional feeds have led to increased research on alternative feed sources for dairy cows. Among these, pumpkin seed meal and pumpkin seed cake (*Cucurbita pepo L.*) stand out due to their high protein content, balanced essential amino acids, and richness in unsaturated fatty acids, carotenoids, and natural antioxidants. This article explores the impact of using pumpkin seed meal and cake as alternative feeds in dairy cow diets, focusing on their chemical composition, nutritional differences, and effects on milk yield, composition, and fatty acid profile. Studies show that adding pumpkin seed meal or cake does not affect milk production, digestibility, or rumen fermentation. Moreover, high-oil pumpkin seed cake can improve the antioxidant status of cows and slightly change the milk fatty acid profile, increasing unsaturated fatty acids.These results highlight the nutritional, economic, and sustainable value of pumpkin seed meal and cake in dairy cow diets. Including these by-products in modern feeding strategies can help produce value-added milk that meets consumer demand for healthier and functional products.

IMPACT OF AGE ON QUANTITATIVE SLAUGHTER PARAMETERS IN BROILER CHICKENS

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Poultry meat represents one of the most widely consumed sources of protein worldwide. Its attractiveness derives not only from its nutritional value, but also from its affordability and versatility in terms of culinary preparation. In the current context, where consumers increasingly demand healthier dietary options, poultry meat—particularly chicken and turkey—plays a central role in maintaining a balanced diet for many individuals. The objective of the present study was to determine the proportion of carcass portions in two commercial hybrids commonly utilized in our country, namely Ross 308 and Cobb. The research involved slaughtering birds at different ages in order to identify the most favorable outcomes regarding the relative weight of carcass regions with the highest consumer demand.

RESEARCH ON THE INFLUENCE OF EWE DIET ON MILK COMPOSITION AND GROWTH PERFORMANCE OF SUCKLING LAMB

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This study evaluated the effects of ewe dietary composition—alfalfa silage vs. hay-based rations—on milk composition and suckling lamb growth from birth to weaning. Thirty-six lactating ewes were assigned to two experimental groups:group 1- alfalfa silage-based diet and group 2- hay-based diet. During the suckling period, the body weight of the lambs was recorded weekly, and the

milk was analyzed for total solids, fat, protein and solids-not-fa . The study reveals that group 1 produced milk with higher fat and protein content, while group 2 yielded slightly higher SNF values. Lambs in group 2 exhibited significantly greater total weight gains ($p < 0.01$, $p < 0.001$) during mid-lactation and entire suckling period, as well as average daily gains (ADG) during mid-lactation ($p < 0.01$, $p < 0.001$), although ADG over the total period did not differ significantly between group (247.02 g/day to group 1 vs. 263.02 to group 2). Group 1 showed no advantage in lamb growth despite higher milk fat and protein content. Correlation analysis revealed strong positive relationships between milk SNF and lamb weight during the weeks 3–8. The results indicate that, although alfalfa silage improves certain aspects of milk composition, hay-based diets may better support lamb growth, highlighting a nutritional balance between benefits under the conditions studied.

COMPARATIVE STUDY OF MORPHO-PRODUCTIVE PERFORMANCE FOR QUANTITATIVE AND QUALITATIVE MEAT PRODUCTION IN R1 (75% BOER × 25% CARPATINA) KIDS, COMPARED WITH THE CARPATINA BREED

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In Romania, research aimed at increasing goat meat production through crossbreeding remains limited, being conducted mainly at the Research and Development Institute for Sheep and Goat Breeding (R.D.I.S.G.B.) Palas Constanța. The present study highlights the advantages of crossbreeding Carpatina with Boer on key morpho-productive indices, with the strategic objective of establishing a Romanian meat-type goat breed well adapted to local conditions. To this end, the analysis focused on the R1 genotype (75% Boer × 25% Carpatina), obtained by crossing Carpatina does with Boer bucks. The results indicate a clear superiority of the R1 genotype: body weight was 17.67% higher than in Carpatina kids, and the average daily gain during the fattening period reached 185.30 g compared with 130.80 g in Carpatina. From a nutritional efficiency standpoint, the specific energy and protein consumption required to obtain one kilogram of weight gain was lower in R1 than in Carpatina. Experimental slaughter trials confirmed these differences, revealing superior carcass quality in R1 kids relative to the Carpatina breed. In conclusion, the findings certify the genetic and technological advantage of the R1 genotype (75% Boer × 25% Carpatina) for meat production, underpinning the establishment of a specialized Romanian breed and justifying further validation on larger cohorts and across diverse farm environments.

EVALUATION OF THE FATTENING PERFORMANCE OF F1 CROSSBREDS FROM ȚIGAIE EWES AND FRENCH MEAT BREED RAMS

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The research conducted represents the initial stage of a systematic process aimed at organizing sheep meat production based on the application of appropriate management practices. The ultimate goal of the study was to examine the response of crossbred lambs subjected to intensive fattening technology. These F1 crossbreds were obtained from systematic matings between rams of French meat breeds and local Țigaie ewes, rusty variety. The biological material used in the study consisted of first-generation (F1) crossbred lambs obtained by mating local Țigaie ewes, reared and maintained at the Research and Development Station for Sheep and Goat Breeding in Secuieni-Bacău, with rams from French meat breeds, as Vendeen and Blanche du Massif Central. Lambs were weaned after 90 days of suckling, and the applied fattening technology included three technological phases

for 70 days: adaptation (10 days), growth and fattening (50 days), and finishing (10 days). The collected data were statistically processed, centralized, and appropriately interpreted. For data analysis, the REML (REstricted Maximum Likelihood) procedure was applied, ensuring reliable estimates within the normal parameter space. The final live body weight recorded at the end of the fattening period showed superior performance, with increases of 26.74% in V × Ti, 27.17% in BMC × Ti, and 21.94% in Bc × Ti crossbreds. The weight differences between the control and crossbred groups at the end of this phase were highly significant, being statistically validated at $p \leq 0.001$.

REARING SYSTEMS AND THEIR IMPACT ON PRODUCTIVITY IN QUAIL FARMS: A REVIEW

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This review explores the relationship between different growing systems and their impact on productivity in quail (Coturnix coturnix japonica) farms. As consumer demand for alternative poultry meat and eggs increases, the need for optimized and welfare-oriented production systems becomes critical. This study analyzes various growing methods such as cage systems, deep litter systems, and free-range setups, highlighting their effects on growth rate, feed conversion ratio, egg production, mortality rate, and animal welfare indicators. Comparative data suggest that intensive systems, particularly multi-tier cages, offer higher productivity in terms of body weight gain and feed efficiency, while alternative systems, such as free-range, show benefits in animal behavior expression and consumer preference. Environmental parameters, stocking density, lighting, and ventilation are also discussed as influencing factors. The findings emphasize the necessity of balancing economic efficiency with ethical farming practices. This review aims to support farmers, researchers, and policy makers in identifying sustainable and productive models suited to various operational goals and regional conditions.

COMPARATIVE ANALYSIS OF EGG MASS AND INTERNAL STRUCTURE FROM DIFFERENT REARING SYSTEMS: ORGANIC, FREE-RANGE, BARN, AND CAGE HOUSING

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Eggs represent one of the most valuable animal products for human nutrition, and their quality and composition are strongly influenced by the rearing system of laying hens. The present study aimed to evaluate the influence of different rearing systems on egg mass and internal structural components in Lohmann Brown-Classic laying hens. Egg samples were collected from four housing systems: organic, free-range, barn (intensive floor), and cage (intensive battery). Sampling was carried out three times per week, with eggs analyzed on the same day to avoid storage-related effects. A total of 288 consumer eggs were randomly selected throughout the experimental period.
Results indicated that eggs from the organic system recorded the highest average mass (63.49 g), followed by those from free-range hens (62.91 g). In contrast, eggs from intensive systems were lighter, with averages of 61.88 g (barn) and 61.21 g (cage). These findings suggest that increased freedom of movement positively influences egg productive parameters, with housing systems closer to natural conditions favoring improved egg development compared to intensive rearing.

DETERMINATION OF SODIUM NITRITE (E250) CONTENT IN SOME SELECTED MEAT PRODUCTS

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The main objective of this study was to evaluate the nitrite content in different meat products using the colorimetric Griess method, according to the Romanian Standard SR 13175. Six samples from different brands were analyzed, grouped into two categories: canned pork meat in its own juice and Victoria-type salami. The results revealed important differences between the two product categories. The canned pork samples showed lower nitrite concentrations, all below the maximum limit of 50 mg/kg established by national regulations. Conversely, Victoria-type salami samples presented higher nitrite levels, approaching the legal threshold of 100 mg/kg, as regulated by EC Regulation No. 1333/2008. These variations are mainly attributed to technological differences in processing, the controlled addition of curing agents, and the type of thermal treatment applied. In conclusion, all analyzed samples complied with the legal safety limits; however, salami products exhibited higher nitrite concentrations than canned meat, emphasizing the importance of continuous monitoring of food additives to ensure consumer safety and regulatory compliance.

STUDY ON THE COLOR PROFILE OF FARM-RAISED VERSUS WILD PHEASANT MEAT

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The study presents a comparison of the color profile of pheasant (Phasianus colchicus) meat from farmed and wild individuals. The analyses were performed using the CIE Lab system, focusing on parameters such as lightness (L), redness (a*) and yellowness (b*). The results revealed differences between the two groups: wild pheasant meat presented lower L* values and higher a* values, indicating a darker and more intense reddish color. These variations are associated with natural feeding and increased physical activity, which influence muscle pigmentation and myoglobin content. The study highlights the relationship between the rearing system and the color of pheasant meat. Different rearing methods lead to variations in hue and intensity, aspects that directly affect both consumer perception and the commercial value of the product.

MATURATION AND TENDERIZATION OF POULTRY MEAT: BIOCHEMICAL, TECHNOLOGICAL, AND INDUSTRIAL PERSPECTIVES IN A REVIEW ANALYSIS

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One of the major challenges in the poultry industry lies in delivering meat products with consistent tenderness and high consumer acceptability. This review aims to synthesize both traditional and emerging industrial approaches employed to enhance meat texture, including controlled aging, marination with natural enzymes, high-pressure processing, and the application of innovative technologies such as ultrasound and pulsed electric fields. Furthermore, the review discusses practical advantages - such as the reduction of aging time, minimization of water losses, and improvement of product consistency - as well as the inherent limitations related to cost, scalability, compatibility with existing processing lines, and, ultimately, consumer perception.

SUSTAINABLE TOURISM: INTEGRATING RENEWABLE ENERGY INTO DESTINATION STRATEGIES

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In recent decades, tourism has undergone a significant transformation, increasingly embracing sustainability-oriented practices. One of the key pillars of this shift is the use of renewable energy technologies, which help reduce environmental impact without compromising the quality of the visitor experience. Tourist destinations with rich cultural and natural heritage provide fertile ground for developing eco-compatible models, where resource conservation is harmoniously integrated with hospitality. Among the solutions implemented are solar panels in resorts and hotels, as well as geothermal heating and cooling systems in accommodation facilities. These initiatives not only enhance the added value of tourist destinations but also foster a more responsible dialogue between visitors and the local environment. Thus, tourism takes on a new dimension—as a catalyst for ecological and social change.

THE IMPACT OF LOGISTICS COSTS ON CERTIFIED FOOD PRODUCTS – COW'S MILK

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The paper aims to assess the economic impact of cow's milk certification, taking into account the additional costs generated by certification and transportation. Through economic-statistical methods, indicators such as the unit cost per liter, the break-even point and the economic yield per head of animal were calculated. The study included alternative scenarios - rented car and own car - to highlight the differences in profitability. The results show that, in the rented car variant, maintaining profitability requires a minimum price of 3.05 lei/liter or a production of over 8,400 liters/head/year, and in the own car variant, the threshold drops to 2.72 lei/liter or 7,470 liters/head/year. The paper supports decisions regarding the certification and development of mountain farms.

CADMIUM CONTAMINATION IN COW'S MILK: SOURCES, OCCURRENCE AND IMPLICATIONS FOR FOOD SAFETY

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Cadmium is a toxic heavy metal with a high bioaccumulation capacity, the presence of which in milk raises food safety and public health concerns. The aim of this article is to analyze the existing data from the specialized literature regarding the sources of cadmium contamination, the transfer mechanisms in the bovine body and the levels detected in milk. A literature review was conducted using studies published in different geographical regions. Data sources included survey articles, field analyses and systematic reviews focused on heavy metal pollution.

The available studies report a significant variability in the level of contamination influenced by exposure routes, region, growing environment and diet, some values approaching or even exceeding the legal limits allowed at European and international level. The highest cadmium

concentrations were reported in areas with heavy traffic or industrial activity, with most studies confirming the wide variation in contamination and its correlation with the degree of urbanization and industrialization. The cadmium contamination of milk reflects the direct influence of anthropogenic factors and environmental pollution on animal production.

ANALYSIS OF TOURIST DEMAND IN THE ECOTOURIST DESTINATION OF DORNA LAND, SUCEAVA COUNTY

Cristina Simeanu[1], Benone Păsărin[1], Alexandru Usturoi[1], Mădălina-Alexandra Davidescu[1], Bogdan-Vlad Avarvarei[1], Cosmin-Vasile Andronachi[1], Daniel Simeanu[1]
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The dynamics of arrivals, overnight stays and analysis of the average length of stay in the localities that make up the ecotourism destination Dorna Land in Suceava County (Vatra Dornei, Poiana Stampei, Coșna, Dorna Candrenilor, Dorna Arini, Șaru Dornei, Panaci, Cârlibaba, Ciocănești and Iacobeni), shows that, in the analyzed period (2019-2023), arrivals recorded relative increases that varied between 0.53% and 28.68%, with the exception of Vatra Dornei Municipality where a relative decrease in arrivals of 3.96% was recorded; regarding overnight stays, relative increases were recorded in the localities of Ciocănești, Dorna Arini, Iacobeni, Poiana Stampei and Șaru Dornei, values that varied between 4.13% and 25.74%, in the remaining localities, relative decreases were recorded that varied between 0.11% and 5.86%. The average length of stay during the analyzed period recorded values that varied between 1 day (Iacobeni, year 2019) and 3.86 days (Vatra Dornei, year 2019).

CONTRIBUTIONS TO THE KNOWLEDGE OF THE QUALITY OF SOME SYRUP VARIETIES OBTAINED INDUSTRIALLY AND TRADITIONALLY

Cătălin Emilian Nistor[1], Gabriel Vasile Hoha[1], Alexandru Usturoi[1], Benone Păsărin[1]
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Fruit syrups are classified as non-alcoholic beverages obtained from the fruit juices of various species through mechanical processes (pressing) or diffusion, with the addition of sugar and acids, intended for the preparation of soft drinks and confectionery products and preserved with sugar. Processing into syrup is a method that can be applied to a wide range of fruits, such as: strawberries, raspberries, cherries, sour cherries, apricots, berries, blueberries, or citrus fruits. The research conducted aimed to highlight the differences between the two technologies for obtaining this product, as well as to analyse the main sensory and physicochemical indicators. By conducting a sensory analysis of the 9 syrup varieties, it was found that for each parameter evaluated, the maximum score was awarded to one of the syrup varieties prepared using the traditional method. Regarding the results of the physicochemical analyses, variations were observed between the two technological variants. Regarding the total sugar percentage, the difference was 16-18% higher for varieties prepared using the traditional method, while for acidity, the values obtained for industrially prepared syrup varieties were 1.04-1.30, and for traditional varieties, they were 3.42-3.80 (g malic acid/100 g product).

STUDY ON THE PRODUCTION CAPACITY OF A BAKERY UNIT AND ITS CORRELATION WITH CONSUMER DEMAND AND PREFERENCES

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University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

In recent years, Romanian consumers have been increasingly seeking healthy bakery products that provide a unique culinary experience or superior nutritional value. This trend has contributed to the development of small artisanal bakeries, highly appreciated by consumers, as they produce sourdough bread, wholemeal flour assortments, or additive-free recipes, thus meeting the demands of an educated and quality-oriented market. The aim of this paper was to analyze the production capacity of a modern bakery unit in Bucharest, in order to observe how production can be correlated with consumer demand and preferences. The daily production of the unit amounts to 2,410 kg of products, of which bread and bakery goods represent 87.6% (2,110 kg), while the remaining 12.5% (300 kg) consists of fresh pastry products. The assortment with the highest share in the unit's total production (41.5%) is represented by white bread, followed by intermediate bread with a share of approximately 20% of the total. The results of the physicochemical and microbiological analyses demonstrate that both the raw materials and the finished products meet the food safety requirements.

APPROACHES TO SODIUM LEVEL AND ITS REDUCTION IN THE FOOD INDUSTRY: CHTHE SODIUM DILEMMA: OVERCOMING CHALLENGES IN FOOD INDUSTRY REDUCTION STRATEGIES FOR BETTER HEALTH

Elena-Gabriela Stan, Ioana-Alexandra Alexe, Ștefania Bololoi Iuliana, Gratziela Victoria Bahaciu
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

Sodium is an essential electrolyte that regulates fluid balance and nerve function, muscle contraction, nutrients transportation. But its excessive consumption is a major risk factor for health conditions like high blood pressure and cardiovascular disease. As most of sodium originates mainly from processed foods, the industry plays a central role in its reduction by challenging the reformulation strategies because sodium chloride contributes essentially to flavor, texture, preservation, and manufacturing process functionality, as well as consumer acceptance which remains a significant barrier. Current strategies include gradual reduction, the use of salt substitutes, flavor enhancers, and innovative technologies. Policy actions, nutritional labeling, and consumer education complement these efforts. In this study it was presented an integrated approach, combining technological innovation with regulations and communication, which is vital to balance health benefits with food safety and product quality while maintaining consumer trust.

FRACTIONATION OF TRANSGLUTAMINASE PRODUCED BY *STREPTOMYCES MOBARAENSIS* ATCC 27441

Ioan Strungariu[1,2], Mirela Dumitrascu[2], Elena Nechita[2], Marius Stefan[1]
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Microbial transglutaminase (mTG) can catalyze covalent bonds between proteins, a property used in the food industry to restructure meat, improve the texture of dairy products, and extend the shelf life of foods. In our study, mTG was obtained using Streptomyces mobaraensis ATCC 27441 strain and fractionation using various ion exchange resins. The enzymatic activity was monitored using a spectrophotometric method. The results showed that the use of the Fractogel EMD SO_3^- resin led to the highest yield in the fractionation process (84.23%), recovering an enzymatic activity of

1613.83 U. Using Relisorb, a total enzymatic activity of 882.07 U and a yield of 46.04% was evidenced. In the case of Amberlite CG-50, a total activity of 869.558 U was achieved, with a final yield of 45.38%. The lowest final yield was recorded for Resindion SP 825L resin - 5.08%, with an enzymatic activity of 97.420 U. The results indicate that Fractogel EMD SO_3^- is the most efficient resin for mTG fractionation, providing a robust approach for obtaining a high-purity enzyme suitable for industrial applications.

THE INFLUENCE OF THE REARING SYSTEM ON THE TECHNOLOGICAL PROPERTIES OF PHEASANT MEAT

Dumitrel Tîrziu, Traian Crăciunaș, Mugurel Munteanu, Marius Mihai Ciobanu, Paul Corneliu Boișteanu
"Ion Ionescu de la Brad"Iași University of Life Sciences, Romania

The technological quality of pheasant meat is a subject of interest in the specialized literature, being described by parameters such as water retention capacity (WRC), dripping loss (DLL) and boiling loss (CLL). The present work is based on a review methodology, by analyzing and comparing data published by various authors on the influence of the rearing system, sex and slaughter age on the technological properties of pheasant meat. The reported results highlight the variability of WRC values, between 1–3% in some studies and up to 72–75% in others, the differences being explained by methodological and anatomical particularities. Drip loss proved to be higher in the leg muscles than in the breast, an aspect associated with differences in chemical composition, while boiling losses were not significantly influenced by the anatomical portion. Overall, the literature indicates that the rearing system (natural vs. managed) or the sex of the birds exerts a limited influence on these traits, the variables with major impact being the age of slaughter and the type of muscle analyzed.

A REVIEW OF THE EFFICIENCY OF USING FISH BY-PRODUCTS

Ionela Florentina Toma, Iuliana Stefania Bololoi, Georgiana Magdalena Gheciu Pirlea, Andrada Elena Moise, Stefan Teofil Vlad, Carmen Georgeta Nicolae
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

Efficient valorisation of fish by-products represents a strategic priority for improving resource utilization, profitability, and sustainability in the fish processing industry. This synthesis paper brings together scientific literature through reports, case studies, and research articles, analysing the efficiency of fish through different valorisation pathways. The results highlight a value hierarchy: high-value biomolecules (collagen, peptides, gelatine) provide the greatest profits, while fishmeal and fish oil ensure stable large-scale demand. Applications in bioenergy and fertilizers contribute indirectly by reducing waste management costs and supporting renewable energy systems. Case studies show that aquaculture industry revenues can be increased, but challenges persist, such as high technological costs, fragmented regulations, and limited consumer acceptance. The study emphasizes that integrated valorisation systems, aligned with the principles of the circular economy and the FAO's "Blue Transformation" initiative, offer the most promising approach for maximizing both economic and environmental outcomes. It also provides recommendations for scaling up fish by-product processing technologies and raising consumer awareness regarding the utilization of fish by-products.

INTEGRATED VALUATION OF LOCAL LIVESTOCK RESOURCES THROUGH GASTRONOMY POINTS: A CIRCULAR BIOECONOMY MODEL FOR SUSTAINABLE AGROTOURISM IN ROMANIA

Eugen Cătălin Zoican, Raul Romulus Condeescu, Vasilică Vladu, Beatrice Ana-Maria Sîrbu, Diana Marcu, Genoveva Buzămat
University of Life Sciences "King Mihai I" from Timisoara, Romania

This paper proposes a theoretical circular bioeconomy model for sustainable agrotourism in Romania, with the Local Gastronomic Point (PGL) as its core. The goal is to show how PGLs can integrate domestic livestock resources to create a regenerative economic system at the micro-regional level. The qualitative methodology uses a systematic literature review, documentary analysis of the legislative framework, and a multiple case study of good practice models. The results develop a conceptual model that highlights the PGL as an integrative node of circular nutrient, economic, and socio-cultural loops. The model is found to be viable and able to transform the conservation of local genetic resources into a sustainable economic activity, strengthening the resilience of rural communities. The originality of the work is in conceptualizing the PGL as a practical mechanism for applying circular bioeconomy principles in agrotourism.

COST-ORIENTED ADJUSTMENT OF CHICKEN BROILER DIETARY FORMULATIONS, USING DIGITAL OPTIMISING

Daniel Simeanu, Cristina Gabriela Radu-Rusu, Răzvan Mihail Radu-Rusu
"Ion Ionescu de la Brad" Iași University of Life Sciences

Usage of linear programming algorithms is a way to decrease production costs in formulating diets for chicken broilers, either by substituting certain feedstuffs with others, more affordable as price or better from a nutritional point of view. Also, the dynamic rearranging of the diet structure in relation with the market variations of feedstuffs pricings is another way when no supplemental feedstuffs are available. Three mixed feed diets were formulated using a mixture of soybean meal as main proteic ingredient and vegetal oil as gross energy top-up boos, substituting partially afterwards these proportion in diet by full fat soy. The newly formulated diets, using digital solver algorithms were manufactured and tested on a rearing series of chicken broilers (100 capita/diet) from starter (day old) to culling (42 days). The live weight at the end of the experiment was superior to the control group by 3.29% in the group of chickens that were fed diet by introducing full-fat soy, respectively by 1.52% in chickens fed with feed that contained the same basic ingredients as the initial feed, but also optimized for reducing production costs. The feed conversion over the entire growth series was 0.69-2.14% more efficient in chickens that received nutritionally optimized feeds and in terms of production costs, compared to chickens fed with conventional feed. The use of optimized feeds generated net profit increases of 2.17-7.27% in the experimental groups compared to the control group. It is recommended to optimize the feeds of broiler chickens by introducing full fat soybean in all three combined feed recipes, in order to maximize growth gains, income and profit per series, while obtaining lower values of the feed conversion ratio. The digital optimizing method has proven to be effective, shortening meanwhile the formulation process and taking into account as many as possible constraints.

DYNAMICS OF BROILER MEAT HISTOLOGICAL STRUCTURE CATEGORIES, RELATED TO SLAUGHTERING AGE

Răzvan Mihail Radu-Rusu, Mihaela Ivancia, Marius Giorgi Usturoi, Laurian Cristian Cojocariu, Andrei Ciobanu, Daniel Simeanu
"Ion Ionescu de la Brad" Iași University of Life Sciences

Is the proportion of main tissual categories (connective and striated muscular) directly correlated with the age at slaughter in commercial chicken broilers? Two moments of culling and slaughtering were investigated (35 days vs. 42 days old) on a commercial flock of COBB 500 broilers with 100 individuals used for each age for meat sample harvesting from breast, thighs and drumsticks. The muscles were submitted to histological investigation after parrafin inclusion technique, using a HEA staining and a photonic microscope and a digital tool (Optika Vision) to count muscle fibers and to measure their dimmensions, as well the surface of the muscle fascicles. Following all the analyses, we can conclude that the muscles from broiler chickens slaughtered at 35 days of age, have a much higher muscle fiber density than the muscles from chickens slaughtered aged 42 days. Also, the muscle tissue proportions had averages between 72.94% and 79.28%, the first value being attributed to the superficial pectoral muscles harvested from chickens whose slaughter age was 35 days, and the second value to the lower leg muscles harvested from chickens whose slaughter age was 42 days. The values for the proportions of connective tissue show that chickens whose age is higher had a lower proportion, for example, chickens slaughtered at 35 days have 24.87% connective tissue in their muscle composition, while those slaughtered at the age of 42 days have 22.19% connective tissue, although these differences are not significant. Thus, following the analyzed data, we can conclude that the age at which chickens are slaughtered is of great importance, with changes being reported in all the analyzed parameters, even if these differences were not very significant. Future recommendations would be to opt for a larger sample base, but also a higher analytical precision, to obtain more comprehensive and realistic results. One could also try analysis by muscle subgroups, but also analysis by multiple age categories.

COMPARATIVE STUDY OF CONVENTIONAL AND VACUUM PACKAGING ON THE QUALITY OF TURKEY BREAST STORED UNDER REFRIGERATION

Diana Ioana Marcu, L. E. Olariu-Jurca, Cătălin Zoican, Adela Marcu
University of Life Sciences "King Mihai I" from Timisoara, Romania

Our study investigated the influence of packaging method and storage temperature on the stability and shelf life of turkey meat under refrigeration. The samples consisted of turkey breast packed in clipped polyethylene bags (A) and vacuum-packed bags (B), then stored at temperatures between +2 and +4°C. Quality was evaluated over a 10-day period through organoleptic examination and physicochemical determinations (pH, volatile nitrogen compounds, and water-holding capacity). The results showed that vacuum packaging, combined with lower storage temperature (+2°C), had a favorable effect on sensory attributes and physicochemical indicators. Thus, shelf life was extended, and both sensory and physicochemical quality were better maintained compared to conventional packaging. In addition, vacuum-packed samples exhibited lower water-holding capacity values.

HISTOPATHOLOGYCAL STUDY ON AN OUTBREAK OF INTESTINAL AND HEPATIC COCCIDIOSIS IN RABBIT FARM

Beatrice Ana-Maria Sîrbu, Ioan Peț, Liliana Petculescu Ciochină, Florica Morariu, Cătălin Zoican, Cătălin Bogdan Sîrbu, Maria Alexandra Iepan, Sandra Florina Lele, Paul Florin Paven, Gabi Dumitrescu

University of Life Sciences "King Mihai I" from Timisoara

Coccidiosis is a parasitic disease that can cause significant economic losses to rabbit breeders. The aim of the present study was to examine the pathological changes occurring in the intestine and liver of rabbits infested with Eimeria spp., from both macroscopic and microscopic perspectives. A total of 10 rabbits were included in the study. The sample of dead rabbits was subjected to necropsy in order to assess the macroscopic and microscopic alterations at the intestinal level. The tissue samples were subsequently processed using the paraffin embedding technique, followed by hematoxylin-eosin staining. The results demonstrated that all samples collected from the rabbits exhibited pathological changes in the intestine and liver. At the intestinal level, macroscopic examination revealed cecal tympany and necrotic foci surrounded by fibrous tissue, while microscopic analysis highlighted parasitic elements in different developmental stages. At the hepatic level, macroscopic examination showed white nodules with a diameter of approximately 5 mm, whereas microscopic examination revealed leukocytic infiltration, perivascular fibrosis, and congestion of the central vein. In addition, desquamation of the bile duct epithelium was observed. Based on the macroscopic and microscopic examinations, the outbreak was diagnosed as intestinal and hepatic coccidiosis.

EFFECTS OF DIETARY SUPPLEMENTATION WITH *NIGELLA SATIVA* (BLACK CUMIN) AND *CORYLUS AVELLANA* (HAZELNUT) MEAL ON THE PRODUCTIVE PERFORMANCE OF ROSS 308 BROILER CHICKENS

Cătălin Bogdan Sîrbu, Ioan Peț, Ion Valeriu Carabă, Florica Morariu, Cătălin Zoican, Beatrice Ana-Maria Sîrbu, Maria Alexandra Iepan, Sandra Florina Lele, Paul Florin Paven, Diana Marcu, Lavinia Ștef

University of Life Sciences "King Mihai I" from Timisoara, Romania

In recent years, medicinal plants and plant by-products have attracted increasing interest as natural additives in poultry nutrition, representing viable alternatives to chemical additives. *Nigella sativa* and *Corylus avellana* stand out due to their nutritional composition and beneficial effects on productive performance and meat quality in broiler chickens. Therefore, the aim of this study was to evaluate, in the diet of Ross 308 broiler chickens, two types of seeds administered in meal form at different concentrations as natural feed additives, in relation to productive performance, and to assess the effect of the diet on the chemical composition of broiler meat. A total of forty-five one-day-old, unsexed Ross 308 broiler chicks were included in the study. The chicks were individually tagged, weighed, and randomly assigned to three groups: one control group and two experimental groups. The broilers were fed two types of diets: a starter diet from day 0 to day 28 and a finisher diet from day 29 to day 49, supplemented with *Corylus avellana* meal or *Nigella sativa* meal, respectively. The chemical composition of broiler meat was determined by measuring moisture and dry matter, crude ash, crude fiber, crude protein, crude fat, and nitrogen-free extract. Body weight was monitored weekly, and the average daily weight gain was found to be 65.08 g in the group receiving compound feed and hazelnut meal, and 71.63 g in the group receiving compound feed and black cumin meal. The chemical composition of broiler meat revealed similar values of crude protein and crude fat between the two groups. In conclusion, the results support the use of black cumin meal in the diet of Ross 308 broiler chickens to improve productive performance and meat quality.

WORKSHOP SESSION

➔ Emil Honoriu Roșu (E28) Auditorium, 1st floor

FRIDAY, OCTOBER 24, 10:00 – 12:00
Chairpersons: Prof. Daniel SIMEANU, PhD
Assoc. prof. Mihaela IVANCIA, PhD
Secretariat: Lecturer Alexandra Mădălina DAVIDESCU, PhD

MANGALIȚA SWINE BREED HUSBANDRY AND POSSIBILITIES OF VALORISATION

Benone Păsărin[1], Gabriel Vasile Hoha[1,2], Claudia Gogu[3]
[1]"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
[2]Directorate for Agriculture, Iași County, Romania
[3]Directorate for Agriculture, Suceava County, Romania

CLOSING CEREMONY AND CONGRESS AWARDS FACULTY OF FOOD AND ANIMAL SCIENCES SECTIONS

➔ Emil Honoriu Roșu (E28) Auditorium, 1st floor

FRIDAY, OCTOBER 24, 13:00 – 13:30
Chairpersons: Prof. Daniel SIMEANU, PhD
Prof. Răzvan Mihail RADU-RUSU, PhD

FACULTY OF VETERINARY MEDICINE

THURSDAY, OCTOBER 23th, 2024

FIRST SECTION
FUNDAMENTAL SCIENCES

➔ Pathological anatomy laboratory, bulding 6

PLENARY SESSION

Chairpersons: Prof. Sanda ANDREI, PhD - USAMV Cluj
Assoc. Prof. Eugenia DUMITRESCU, PhD - USV Timișoara
Prof. Aurelian-Sorin PAȘCA, PhD - USV Iași

14:00– 14:10

ANTIBACTERIAL EFFECTS OF PLANT EXTRACTS RICH IN POLYPHENOLS AGAINST SKIN PATHOGENS

Teodora Dan, Katalin Szabo, Cristiana Novac, Nicodim Fit, Sanda Andrei
University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania

Skin pathogens continue to represent a persistent and significant challenge in veterinary medicine, as they frequently complicate wound healing, prolong recovery, and increase the risk of chronic or recurrent infections. The global rise in antimicrobial resistance has further diminished the effectiveness of many conventional treatments, creating an urgent demand for complementary, safe, and sustainable therapeutic strategies. In this context, plant-derived extracts rich in polyphenolic compounds have gained increasing scientific and clinical attention. Polyphenols, including flavonoids, phenolic acids, and tannins, are well known for their broad-spectrum antimicrobial, anti-inflammatory, and antioxidant properties. By acting simultaneously on several biological targets, they can directly inhibit bacterial and fungal growth, modulate host immune responses, reduce inflammation, and promote tissue repair, thus offering a truly multifaceted therapeutic approach. Among the most studied medicinal plants, *Achillea millefolium* L. (yarrow) and *Calendula officinalis* L. (marigold) hold particular relevance in veterinary dermatology. Both species have a long history of traditional use in wound management, and their phytochemical profiles strongly support their role as potential adjuvants for the control of skin infections. The integration of ethnoveterinary knowledge with modern microbiological research not only validates traditional practices but also opens new avenues for innovation in clinical care.

The present study emphasizes the therapeutic potential of polyphenol-rich plant extracts as part of a broader strategy to address skin pathogens in animals. Their multifunctional bioactivities, combined with accessibility and sustainability, position them as valuable resources for developing innovative solutions in veterinary practice, especially in the fight against antimicrobial resistance.

14:10– 14:20

ACUTE TOXICITY OF CYPERMETHRIN AND ALPHA-CYPERMETHRIN-BASED INSECTICIDES ON CYPRINID FISHS

Marga Grădilă, Carmen Mincea, Roxana Zaharia
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

This study investigates the acute toxicity of cypermethrin and alpha-cypermethrin-based insecticides on cyprinid fish species. A 96-hour static non-renewal bioassay was conducted in the Ecotoxicology Laboratory of R.D.I.P.P. Bucharest. Juveniles of common carp (*Cyprinus carpio*) and prussian carp (*Carassius gibelio*) were exposed to a range of insecticide concentrations. Acute toxicity data were analyzed using probit analysis, and 96 h LC values (Mean Lethal Concentration) as well as NOEC (No Observed Effect Concentration) were determined. Exposure to cypermethrin and alpha-cypermethrin induced behavioral and anatomical changes, including respiratory disturbances, loss of balance, reduced response to tactile stimuli, and abnormal swimming patterns, which intensified with increasing concentration and exposure duration. Among the tested species, common carp juveniles were the most sensitive, highlighting species-specific differences in susceptibility to these insecticides.

14:20– 14:30

TARGETING DIGESTIVE PATHOGENS: ETHNOPHARMACEUTICAL INSIGHTS INTO ANTIBACTERIAL PLANT EXTRACTS

Oana-Roxana Haralambie, Cristiana-Ștefania Novac, Dragoș Hodor, Florica Ranga, Sanda Andrei
University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania

The growing incidence of antibiotic-resistant gastrointestinal pathogens presents a significant concern in both human and veterinary medicine. As conventional antibiotics become less effective, polyphenol-rich plant extracts are being increasingly investigated for their antimicrobial potential. This study explores the antibacterial potential and total polyphenolic content of selected ethnopharmaceutical plant extracts - *Origanum majorana* (sweet marjoram), *Salvia officinalis* (sage), and *Ribes nigrum* (blackcurrant) - traditionally used in the treatment of gastrointestinal disorders. Extracts were obtained using ethanol-based methods and evaluated through standard *in vitro* assays to assess their effectiveness against digestive bacterial strains. Extracts were analysed for activity against six common digestive pathogens: *Escherichia coli*, *Salmonella enteritidis*, *Enterobacter cloacae*, *Yersinia enterocolitica*, *Listeria monocytogenes*, and *Enterococcus faecalis*, using agar spot diffusion and minimum inhibitory concentration assays. All extracts exhibited bactericidal activity; *R. nigrum* demonstrated the most potent effect against *Y. enterocolitica*, while *S. officinalis* showed the highest efficacy against *E. faecalis*. *O. majorana* was notably effective against both. The extracts were rich in polyphenols, with *S. officinalis* containing the highest concentration. The results highlight the promising role of plant-derived compounds as complementary or alternative strategies in managing digestive infections, particularly in the face of growing resistance to conventional antibiotics. Overall, the findings support further exploration of these plant extracts as natural alternatives or adjuncts to antibiotics in managing gastrointestinal infections.

14:30– 14:40

DONKEY MILK PROTEINS AS NATURAL MODULATORS OF INFLAMMATION IN DSS-INDUCED COLITIS IN RATS

Andreea-Georgiana Morohoschi, Cristina Ștefănuț, Alina Hașaș, Maria-Simona Ciupe, Adrian Gal, Sanda Andrei
University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania

Owing to its bioactive proteins and suggested anti-inflammatory activity, donkey milk (DM) is increasingly investigated as a functional food. This study assessed the effects of whole donkey milk (DM) and donkey whey proteins (DW) in Wistar rats with colitis induced by Dextran Sulfate Sodium (DSS). One group (n = 6) served as a negative control, while the positive control group (n = 6) received a 5% DSS solution to induce intestinal inflammation. Two groups (n = 7) received DSS combined with either DW (DW + DSS) or DM (DM + DSS), while two others (n = 7) received DM or DW alone to evaluate effects in the absence of inflammation. Clinical parameters (body weight, Disease Activity Index), metabolic profile (ALT, AST, ALP, GGT, urea, creatinine, glucose, total proteins, albumin, total cholesterol, triglycerides, total bilirubin), histopathological features, and inflammatory markers (interleukins, CRP, TNF-α) were evaluated.

Histological analysis revealed marked tissue damage in DSS-treated rats, including epithelial erosion, crypt loss, goblet cell depletion, and intense mucosal and submucosal infiltration by inflammatory cells. Ulcerations were also observed at the cecal level, indicating widespread inflammation. In contrast, DM+DSS and DW+DSS groups showed improved mucosal integrity, reduced inflammation, and partial crypt preservation. No histological alterations were found in the control, DM, or DW-only groups. These findings confirm the protective effect of donkey milk and its protein fraction on intestinal architecture in DSS-induced colitis.

Clinically, both DM and DW treatments significantly reduced Disease Activity Index scores and preserved body weight compared with untreated DSS rats, with the strongest effects seen in the DM+DSS and DW+DSS groups. Pro-inflammatory cytokine profiling further confirmed the immunomodulatory activity of donkey milk proteins. These results support the anti-inflammatory and protective potential of donkey milk and its whey proteins in experimental colitis, highlighting their promise as natural therapeutic candidates for managing intestinal inflammation.

14:40– 14:50

ASSESSMENT OF THERMODYNAMIC AND ACOUSTIC PARAMETERS IN HONEYBEE COLONIES UNDER EXPOSURE TO NON-IONIZING ELECTROMAGNETIC RADIATION

Viorel Fătu, Agripina Șapcaliu, Roxana Zaharia, Mihaela Monica Dinu, Iulian Voicea
Research Development Institute for Plant Protection, Bucharest, Romania
The National Institute of Research-Development for Machines and Installations Designed for Agriculture and Food Industry Bucharest, Romania

Twenty-one clinically healthy honeybee colonies were monitored in a private apiary located in Vâlcea County, Romania, within an area influenced by electromagnetic fields (EMF) according to the National Authority for Management and Regulation in Communications (ANCOM) allocations. The site was situated below the activation threshold of the 5G n78 band (3.3–3.8 GHz), where mean field intensities of 12.74 mW/m² and peak values of 17.96 mW/m² were recorded. For each colony, five thermographic measurements were conducted (at the hive entrance, left lateral wall, rear wall, right lateral wall, and interior), totaling 105 recordings. During the inactive beekeeping season of 2025, strong colonies initiated winter clustering at approximately 7 °C, medium-strength colonies at 8 °C, and swarms at 10 °C, values consistent with the literature (7–10 °C). Thermographic analyses

showed that only strong colonies consistently maintained the optimal internal range (32–36 °C), although peripheral zones exhibited peaks up to 52 °C. Medium-strength colonies displayed higher variability, with maxima of 52–55 °C, while swarms remained unstable, fluctuating around the minimum optimal temperature (≈25 °C) and frequently dropping to lower values (21–24 °C), confirming significant differences in thermoregulatory capacity among colony categories. Acoustic monitoring of the colonies revealed a nonlinear profile of sound level: ~36 dB at 50 m, maximum levels of 43–45 dB at 400–540 m due to reflections and interferences of EMF, and ~40 dB at 640–1000 m, with high variability influenced by terrain and nearby constructions.

14:50– 15:00

STUDY ON THE MORPHOHISTOLOGICAL EVOLUTION OF THE SPLEEN IN CHICKS DURING THE POST-HATCHING PERIOD

Loredana Horodincu, Carmen Solcan
"Ion Ionescu de la Brad"Iași University of Life Sciences, Romania

The study investigated how the spleen develops in chicks according to age, given its role in bird defence mechanisms. The morphohistology and biometric analysis were performed on 30 broiler chickens at their post-hatching days 7, 14, 21, 28, 35, and 42. After the cervical subluxation, the spleen was collected and macroscopic examined. It was found in a dorsal position on the right side of the abdominal cavity, oval or rounded, and reddish-brown. Microscopic examination using HE staining revealed a thin capsule of connective tissue that surrounded the spleen and a small number of trabeculae in the parenchyma. The splenic tissue consisted of white pulp and red pulp. The white pulp was composed of a network of reticular cells and reticular fibers, within which immunocompetent cells were diffusely distributed in the periarterial lymphoid sheath (PALS), perielipsoidal lymphoid sheath (PELS), and lymphatic follicles. The red pulp of the spleen consisted of venous sinuses and anastomosed splenic cords, describing a closed circulation in the spleen. The manifestation of these elements depended on age. Raw morphometric observations: average weight, organ index, cell density in PALS, PELS, and lymphoid follicles showed a significant increase throughout the entire period ($p<0.05$). This study provides insight into the development of the spleen in broiler chickens at different age intervals, thereby enriching our knowledge and paving the way for new research in the field of modulation of spleen immune activity, which would be impossible without knowledge of basic morphohistology.

15:00– 15:10

AMINOPEPTIDASE N AND POTENTIAL CELLULAR RECEPTORS INVOLVED IN AVIAN CORONAVIRUS INFECTIONS

Ivona Popovici, Andreea Paula Cozma, Carmen Solcan
"Ion Ionescu de la Brad"Iași University of Life Sciences, Romania

Avian coronaviruses, including infectious bronchitis virus (IBV) and various deltacoronaviruses, are significant pathogens in poultry, causing respiratory, renal, and reproductive diseases with substantial global economic impact. Central to their infection process is the interaction between viral spike (S) proteins and host cellular receptors, which regulate viral tropism and pathogenesis. Recent studies have identified aminopeptidase N (APN) as a key cellular receptor mediating the entry of certain avian deltacoronaviruses—such as HKU11, HKU13, and HKU17—via binding to the S1 subunit of the spike protein. In addition to APN, other host receptors and co-factors have been proposed that may influence viral replication, host immune modulation, and tissue specificity. This review synthesizes current knowledge on the molecular interactions between avian coronavirus spike proteins and host receptors, emphasizing APN's central role and discussing its

implications for cross-species transmission, viral pathogenesis, and the development of targeted vaccines and antiviral strategies.

15:10– 15:20

CELLULAR RECEPTORS MEDIATING CORONAVIRUS SPIKE PROTEIN BINDING AND ENTRY IN MAMMALS: AN UPDATED REVIEW

Ivona Popovici, Cristina Mihaela Rîmbu, Cristina Elena Horhogea
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The initial step in coronavirus infection involves attachment and entry into host cells through interactions between the viral spike glycoproteins and specific receptors on the cell membrane. These receptor-spike interactions determine viral pathogenicity, influencing host, tissue tropism, and the ability to cross species barriers. In mammals, key cellular receptors identified for coronavirus attachment include angiotensin-converting enzyme 2, dipeptidyl peptidase 4, aminopeptidase N, and sialic acid–containing glycoconjugates. In addition to receptor recognition and binding, proteolytic enzymes such as TMPRSS2 and cathepsins facilitate membrane fusion and viral entry. This paper provides an overview of the structural characteristics, diversity, and evolutionary dynamics of coronavirus receptors across various mammalian hosts. It highlights interspecies differences in receptor binding, discusses their role in viral host adaptation and interspecies transmission, and underscores how spike–receptor interactions drive zoonotic spillover events and pandemic emergence.

15:20– 15:30

PATHOLOGICAL INSIGHTS INTO *ICHTHYOPHONUS SP.* INFECTION IN ORGANIC RAINBOW TROUT

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Ichthyophonus sp. is a cosmopolitan parasitic pathogen causing chronic, systemic infections in marine and freshwater fish. Its incidence is increasingly higher in farmed fish, spreading mainly through ingestion of contaminated feed, and it is sometimes influenced by husbandry conditions. This study characterizes its infection pathological features in organically farmed rainbow trout (*Oncorhynchus mykiss*) from a Greek aquaculture facility.

Thirty-three trout were examined through necropsy, wet mount assessment and histopathology within the Pathology Laboratory of FVM, UASVM of Bucharest. Gross lesions and microscopic features were documented to assess lesional morphology and organ distribution.

Fifteen of the 33 fish were diagnosed with the presence of *Ichthyophonus sp.* by the specific lesional findings, completed by microscopic assessment of granulomas and different evolutive stages of the parasite. Gross pathology revealed multifocal white nodules in the heart, liver, and kidney. Wet mounts identified spherical spores, some germinating. Histopathology confirmed granulomatous inflammation surrounding multinucleated spores encapsulated in multilayered fibrous structures. Additional findings included spore aggregation, cytoplasmic vacuolization, and coelomic fat depletion, supporting the chronic nature of the disease. The observed organotropism and lesion progression were consistent with previously reported infection patterns. Notably, the absence of external and sometimes gross lesions of organs underlines the diagnostic limitations of gross examination alone.

This study provides a regional pathological overview of *Ichthyophonus sp.* infection under organic aquaculture conditions. The combined diagnostic approach proved effective in confirming systemic infection and characterizing lesion variability. Findings reinforce established pathological features,

highlight the value of histopathology in accurate detection, and emphasize the impact of the disease on fish health and production.

15:30– 15:40

ANTIOXIDANT AND ANTIPROLIFERATIVE POTENTIAL OF *ARTEMISIA ANNUA* EXTRACTS: *IN VITRO* EVALUATION ON NORMAL AND TUMOR CELL LINES

Rareș Terzea, Camelia Tulcan, Roxana Popescu, Sorin Morariu, Romeo Teodor Cristina, Eugenia Dumitrescu
University of Life Science"Regele Mihai I", Timisoara, Romania.
Faculty of Medicine, "Victor Babes," University of Medicine and Pharmacy, Timisoara, Romania

Artemisia annua (sweet wormwood) is a medicinal plant known for its rich content of bioactive compounds, including artemisinin and polyphenols with potential therapeutic applications. This study aimed to evaluate the antioxidant capacity and antiproliferative effects of A. annua extracts obtained using different solvents and extraction methods. Antioxidant activity was assessed by the DPPH radical scavenging method, with IC_{50} values calculated from dose–response curves. Extracts obtained with methanol showed stronger antioxidant activity compared to ethanol, and ultrasonication significantly enhanced extraction efficiency compared to shaking. The lowest IC_{50} value (341.98 µg/ml) was recorded for the methanolic extract obtained by ultrasonication, indicating the highest radical scavenging activity. The biological effects of the extracts were further evaluated in vitro on normal human fibroblast cells (HdFa) and two tumor cell lines (Caco2 – colorectal adenocarcinoma, and MCF-7 – breast adenocarcinoma). Extracts maintained high proliferation rates in normal fibroblasts, suggesting low cytotoxicity, while significantly inhibiting proliferation in Caco2 and MCF-7 tumor cells. Antiproliferative effects increased with extract concentration and incubation time, with proliferation rates ranging between 65–85% compared to untreated controls.
These findings demonstrate that A. annua extracts possess strong antioxidant activity and selective antiproliferative potential, supporting their role as promising natural candidates for complementary approaches in cancer prevention and therapy.

15:40– 15:50

EFFECTS OF YEAST (*SACCHAROMYCES CEREVISIAE*) AND NETTLE FLOUR (*URTICA DIOICA*) SUPPLEMENTATION ON BROILER CHICKENS

Tudor-Nicolae Pojar, Adrian Cîmpean, Sorana Daina, Adrian Macri
University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania

This study investigated the effects of dietary supplementation with yeast (*Saccharomyces cerevisiae*) and nettle flour (*Urtica dioica*) on growth performance, carcass traits, feed efficiency, organ development in broiler chickens. A total of 90 broiler chicks were assigned to three groups: control, yeast-supplemented, and nettle-supplemented. Body weights were recorded at 3, 7, 14, 21, 28, and 35 days. At slaughter, carcass and organ weights were determined, feed intake and feed conversion ratio (FCR) were calculated. Results showed that both yeast and nettle supplementation improved body weight gain, carcass yield, and feed efficiency compared with the control. At 35 days, yeast-fed broilers reached the highest final weight (2402.67 ± 266.85 g), followed by nettles (2355.23 ± 212.92 g), versus 2019.2 ± 226.48 g in controls. FCR was superior in the yeast (1.59) and nettle (1.66) groups compared with control (2.14). Carcass evaluation indicated improved breast and thigh development in yeast-fed birds, while nettles additionally increased wing mass. Organ analysis revealed greater liver and bursa of Fabricius weights in the nettle group, suggesting immunostimulatory effects. These results demonstrate that yeast supplementation is most effective for optimizing growth performance and feed efficiency, while nettle flour provides additional benefits

in immune and metabolic functions. Both additives represent promising, natural alternatives to antibiotic growth promoters in broiler production.

15:50– 16:00

EVALUATION OF NUTRITIONAL VALUE, PALATABILITY, FECAL CHARACTERISTICS, AND OWNER PERCEPTION OF COMMERCIAL INSECT-BASED DRY DOG FOODS

Sorana Daina, Anamaria Blaga-Petrean, Claudiu-Nicușor Ionică, Tudor-Nicolae Pojar, Adrian Macri
University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania

The increasing demand for sustainable protein sources in pet nutrition has promoted the use of edible insects as alternative ingredients. This study evaluated ten commercial insect-based dry dog foods available on the Romanian market in terms of proximate composition, energy value, palatability, fecal quality, and owner perception. The chemical composition of the samples showed the following ranges: crude protein 22.4–25.6%, ether extract 10.5–15.8%, crude fiber 2.3–5.4%, crude ash 5.2–7.1%, nitrogen-free extract 36–45%, moisture 6.5–8.9%, and an estimated metabolizable energy between 3,650 and 4,150 kcal/kg. Palatability and fecal quality were assessed in ten healthy adult dogs using a two-bowl test and the Royal Canin fecal scoring system. Overall, 83% of the dogs accepted the insect-based food immediately, while 17% consumed it after brief investigation; no refusals were recorded. Fecal consistency was generally good, with a mean score of 2.5 ± 0.3. Additionally, an online questionnaire was completed by 155 dog owners and revealed that 68% were aware of insect-based pet foods, 54% were willing to try them, and 72% considered them environmentally friendly, while 46% identified price as a limiting factor. These findings demonstrate that insect-based pet foods meet canine nutritional requirements, are well accepted by dogs, and are viewed positively by owners, supporting their potential as a sustainable protein source in modern dog nutrition. However, further efforts are needed to improve owner awareness and acceptance through education and effective communication about the nutritional and environmental benefits of insect-based diets.

16:00– 16:10

THE THERAPEUTIC ROLE OF THE *BERGENIA GENUS*: A COMPARATIVE ANALYSIS BETWEEN HUMAN AND VETERINARY MEDICINE

Oana-Raluca Rusu, Marian Burducea, Andra-Cristina Bostănaru-Iliescu Mirela Cojocariu
"Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Medicinal plants are a fundamental resource for the discovery and development of new therapies, having been used for centuries in both traditional medicine and modern practice. The genus *Bergenia* (family *Saxifragaceae*), known in particular for the species *Bergenia ligulata*, *Bergenia ciliata*, and *Bergenia pacumbis*, occupies a special place in Asian phytotherapy, where it is called "Paashanabheda" ("stone breaker") due to its use in the treatment of urinary lithiasis. Modern studies confirm the presence of important bioactive compounds, such as bergenin, gallic acid, tannins, and phytosterols, which give the plant anti-inflammatory, antioxidant, hepatoprotective, antidiabetic, and antimicrobial activities (Koul et al., 2020; Gohain et al., 2022). While *Bergenia* is already well documented in human medicine, its applications in veterinary medicine are less explored, although there are mentions of the topical use of extracts for their astringent and healing effects in animals (Ahmad, 2018). The purpose of this article is to conduct a comparative analysis of the uses of

Bergenia in human and veterinary medicine, starting from the ethnopharmacological tradition and continuing with the results of modern research, in order to highlight both therapeutic perspectives and future directions for research.

16:10– 16:20

DIFFERENTIAL CHARACTERISTICS OF BONES IN THE COMMON BUZZARD (*BUTEO BUTEO*) AND THE WESTERN MARSH HARRIER (*CIRCUS AERUGINOSUS*)

Alina Lupu, Sorina-Andreea Mihai, Cristian Belu, Cristian Marin, Petronela Roșu, Nicoleta Drăguț, Ștefania Mariana Raita
University of Agronomic Sciences and Veterinary Medicine, Bucharest, Romania

Achieving a high degree of accuracy in identifying the bones of different bird species requires a solid knowledge of avian osteology and above all intensive and sustained study. Confusions may be due to the large number of species that belong to this class of vertebrates. Identifying species based on various skeletal characters is not only useful to archaeologists and taxonomists. Practically, legal medicine is also faced with problems that require such identification skills, especially in the case of settling disputes following acts of poaching. Different species of birds have different harvesting periods and in some cases poachers try to mislead the authorities entitled to examine the biological samples. The study material was represented by two corpses each of the species common buzzard (*Buteo buteo*) and western marsh harrier (*Circus aeruginosus*) from specimens collected between August 2023 and January 2024 from the perimeter of the Henry Coandă International Airport – Bucharest. The bones of the appendicular skeleton and the sternum have been described in detail, because these are the bones that most clearly and consistently show the species characters. The rest of the bones show differences, but are difficult for non-specialists to assess. It was concluded that between the two species the most important morphological contrasts appear in the case of the bones of the pelvic limb, this can be explained by the different method of capturing their prey.

16:20– 16:30

RESEARCH ON THE DISTRIBUTION OF THE CELIAC ARTERY IN DUCK (*Anas platyrhynchos*)

Costin Gabriel Boarcăș, Sorina-Andreea Mihai, Cristian Belu, Iulian Dumitrescu, Petronela Roșu, Anca Șeicaru, Gabriel Predoi
University of Agronomic Sciences and Veterinary Medicine, Bucharest, Romania

Birds have developed a highly specialized cardiovascular system to meet the rigorous energy demands of running, flying, swimming or diving in different environmental conditions, some of them extremely harsh. Although the bibliographic study showed the interest of anatomists in researching the cardiovascular system in birds, the structure and functions of this system are far more limited than in mammals. It was found that individual morphological variants appear in any new research. This represents a motivation in carrying out a morphological study of the celiac artery in duck, in order to complete the data from the literature, through original descriptions and images. The studies were carried out on ten duck corpses (*Anas platyrhynchos*), by the injection method with plastic contrast material. Some results corresponded to the data from the literature, but it was also possible to identify elements for the first time, such as an anastomosis observed between the dorsal and ventral proventricular arteries in 70% of the cases. Also as novel elements, peculiarities of the topography of the origin of some arteries were identified in some specimens, as well as different sources of irrigation for certain segments of the digestive tube in this species.

SECOND SECTION
CLINICAL SCIENCES

➔ 1st Lecture room (A1)

PLENARY SESSION
Chairpersons: Prof. Radu LĂCĂTUȘU, PhD - USAMV Cluj
Assoc. Prof. Gheorghe Valentin GORAN, PhD – USAMV București
Prof. Marius ILIE, PhD - USV Timișoara

14:00 – 14:10

PRELIMINARY RESULTS REGARDING THE INCIDENCE OF DIFFERENT TYPES OF CRYSTALLURIA IN CATS

Cristian Ionuț Florea, Alina Ștefănescu, Crina Alexandra Boancă, Ioana-Bogdana Nicola, Alexandru Bogdan Vițălaru
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

Urolithiasis is a common condition in veterinary medicine, primarily affecting the lower urinary tract in cats. Unlike in humans, involvement of the upper urinary tract is rare. This study aimed to describe epidemiological characteristics, identify potential risk factors, and review diagnostic aspects of feline urinary lithiasis. The study included 30 cats diagnosed with urinary lithiasis at a private veterinary clinic in Bucharest between January 2024 and May 2025. Patient data regarding age, breed, sex, and reproductive status were collected. The cats ranged in age from 11 months to 18 years and represented multiple breeds, including European Shorthair, Persian, British Shorthair, Russian White, and Birman. Epidemiological evaluation showed that 66% of affected cats were male. Hormonal status influenced the prevalence, with 76% of male cats diagnosed being castrated. Similarly, reproductive status in females was significant: 90% of spayed females developed lithiasis compared with 10% of intact females. Clinical signs were frequently subtle or absent, requiring additional diagnostic investigations for confirmation. Feline urinary lithiasis is influenced by both sex and reproductive status, with castrated males and spayed females at higher risk. Early diagnosis remains challenging due to a non-specific clinical presentation, emphasizing the need for vigilant screening and further research to clarify pathophysiological mechanisms and improve preventive strategies.

14:10 – 14:20

ASSESSMENT OF COLOSTRUM IMMUNOGLOBULIN G CONCENTRATION AND PASSIVE IMMUNE TRANSFER IN CHAROLAIS CALVES

Nicolae Tiberiu Constantin, Chloé Bocquel, Florin Petrișor Posastiuc, Crina Raluca Andrei
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

Passive immunity is essential for neonatal calf survival, as bovine neonates are born without circulating immunoglobulins due to the synepitheliochorial placenta (Tizard, 2018). This study evaluated passive immune transfer in Charolais calves by assessing colostrum quality, focusing on immunoglobulin G (IgG) concentrations. Sixteen colostrum samples were collected within six hours postpartum and analyzed using two methods: optical refractometry and zinc sulphate precipitation, both validated techniques for estimating IgG content (Buczinski & Vandeweerd, 2016).

The refractometry results indicated Brix values ranging from 17% to 25%, with a mean of 20.38%, classifying 25% of colostrum as high quality (>22% Brix, >50 mg/ml IgG), 69% as moderate (18–22% Brix, 40–50 mg/ml IgG), and 6% as low quality (<18% Brix, <40 mg/ml IgG). Similarly, zinc sulphate precipitation confirmed these findings, with mean absorbance of 0.71 at 420 nm, resulting in 31% high-quality, 63% moderate, and 6% low-quality colostrum. Clinical monitoring of calves during the first month of life revealed that those receiving high-quality colostrum remained healthy, while moderate and low-quality intake was associated with cases of pneumonia, diarrhea, or omphalitis (Jessop et al., 2024; Jourquin et al., 2023).
These results demonstrate a strong correlation between colostrum immunoglobulin concentration and calf health, confirming the reliability of both refractometry and zinc sulphate precipitation in field and laboratory settings.

14:20 – 14:30

A FIELD STUDY TO CONTROL VARROOSIS IN NATURALLY INFESTED HONEY BEE COLONIES, IN CENTRAL ROMANIA

Cerbu (Boanfă) Daniela, Mitrea Emanuel, Mitrea Ioan Liviu, Ionita Mariana
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

Varroosis is a severe disease caused by the ectoparasitic mite *Varroa destructor* (Mesostigmata: Varroidae) that affects honey bees worldwide. Currently it is recognized the most damaging parasitic disease and one of the main threats of the European honey bee - *Apis mellifera*. Varroosis can be controlled through conventional treatments based on the use of synthetic compounds or by the use of natural miticides, such as natural organic acids, for which there is a growing interest. From the natural organic acids, oxalic acid is increasingly used due to relevant advantages, including preserving the mite's susceptibility to it. Therefore, this study aimed to assess the efficacy of an oxalic acid based product (VarroMed) to control varroosis in an apiary, in Central Romania. The study was conducted on natural infested honey bee colonies (n=10) in field conditions over a period of 40 days. The treatment was applied according to the manufacturer's recommendations. The efficacy of the product and the tolerance of bees by monitoring colony development (number of bees, colony strength, brood) were evaluated. The results showed an efficacy of 86.30% and good tolerance of honey bees. These findings highlight the importance of applying appropriate measures to control varroosis adapted to the geographical areas, combined with good beekeeping practices.

14:30 – 14:40

HEPATIC SYNDROMES IN DOGS

Hilal Gencer, Mehmet Erman Or
Istanbul University-Cerrahpasa, Istanbul, Turkey

The liver plays a critical role in maintaining systemic metabolic and vascular balance. Hepatic failure can lead to serious complications in other organ systems. Hepatopulmonary syndrome, hepatorenal syndrome, and cirrhotic cardiomyopathy–hyperdynamic circulation syndrome are among these complications. Hepatopulmonary syndrome is characterized by pulmonary vasodilation and impaired gas exchange, arising as a consequence of portal hypertension. Increased levels of nitric oxide and prostaglandins lead to arterial hypoxemia, and pulmonary vascular dilatation, anatomical shunts, and ventilation–perfusion mismatches play important roles in the development of the syndrome. Hepatorenal syndrome is defined as functional and reversible renal failure that develops secondary to hepatic failure. As renal perfusion decreases, the renin–angiotensin–aldosterone system becomes activated and the glomerular filtration rate falls. This process results in increased renal vasoconstriction and decreased renal blood flow, ultimately leading to progressive renal failure.

Cirrhotic cardiomyopathy is characterized by increased cardiac output due to impaired myocardial contractility, β-adrenergic receptor dysfunction, and systemic vasodilation. Cardiac dysfunctions that develop in chronic liver disease lead to reduced exercise tolerance and hemodynamic instability. Although there are some studies in the veterinary field demonstrating hepatorenal syndrome, more research is needed to determine the prevalence and prognosis of hepatopulmonary syndrome and cirrhotic cardiomyopathy. We believe that a better understanding of liver failure–related syndromes in dogs will contribute to the development of earlier diagnostic and treatment options.

14:40 – 14:50

CHARACTERIZATION OF A CONGENITAL PELVIC LIMB PROCESS IN A NEONATAL CALF USING COMPUTED TOMOGRAPHY: A CASE STUDY

Nicolae Precupescu, Felix Daniel Lucaci , Codrin Irimescu, Teodora Sonia Patrichi, Cristian-Marian Pavel, Robert Cristian Purdoiu, Cosmin Petru Peștean, Sorin Marian Mârza, Ionel Papuc, Florin Ioan Beteg, Mariana Tătaru, Raluca Marica, Radu Lăcătuș
University of Agricultural Sciences and Veterinary Medicine Cluj Napoca, Romania

This case study investigates a one-week-old calf presenting with a congenital process on the left pelvic limb near the tarsal joint, identified through comprehensive clinical, radiographic, and histopathological evaluations. Clinical examination revealed lameness, localized pain, elevated temperature, and ulcerative lesions, with the process appearing detached from surrounding skeletal structures. Computed tomography (CT) imaging, utilizing Hounsfield Unit (HU) measurements, provided critical insights into tissue composition, identifying fluid-filled necrotic regions (-72 to -4 HU), low-density soft tissues (0 to 41 HU), fibrous and inflamed tissues (45 to 94 HU), and calcified structures (104 to 292 HU). Histopathological analysis confirmed a neurofibroma-like lesion characterized by necrotic, inflammatory, and spindle cell components, with areas of increased cellular density suggesting potential malignant progression. These findings underscore the importance of integrating advanced diagnostic techniques, including clinical assessments, CT imaging, and histopathology, to accurately characterize congenital limb abnormalities in cattle.

14:50 – 15:00

TRAUMATIC INJURIES IN EUROPEAN ROE DEER: CLINICAL AND RADIOGRAPHIC INSIGHTS FROM A FOUR-YEAR STUDY

Codrin Irimescu, Felix Daniel Lucaci, Teodora Sonia Patrichi, Robert Cristian Purdoiu, Cosmin Petru Peștean, Sorin Marian Mârza, Ionel Papuc, Mariana Tătaru, Radu Lăcătuș
University of Agricultural Sciences and Veterinary Medicine Cluj Napoca, Romania

This retrospective study investigated traumatic injuries in nine European roe deer (Capreolus capreolus) admitted to the Emergency Unit of the Faculty of Veterinary Medicine, University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania, from 2021 to 2025. Clinical and radiographic evaluations, utilizing the Synthesis Opera G800 DR x-ray system under sedation (butorphanol 0.2 mg/kg, medetomidine 8–10 µg/kg, ketamine 2 mg/kg), revealed a spectrum of skeletal and soft tissue injuries, primarily resulting from vehicle collisions and predatory attacks. Findings included transverse, spiral, and comminuted fractures, as well as soft tissue complications such as edema, hematomas, and pneumothorax. Only one case was amenable to surgical intervention, highlighting the challenges of managing severe trauma in wild ungulates. Radiographic imaging proved critical for accurate diagnosis, underscoring its value in wildlife veterinary medicine. These results emphasize the need for advanced diagnostic protocols and preventive strategies to mitigate the ecological and clinical impacts of traumatic injuries in roe deer populations.

15:00 – 15:10

ASSESSMENT OF SUBCALVARIAL HOUNSFIELD UNITS FOR DETECTING AGE-RELATED CEREBRAL ATROPHY IN DOGS

Teodora Sonia Patrichi, Eduard Vălean, Robert Cristian Purdoiu, Sorin Marian Mârza, Ionel Papuc, Florin Beteg, Cosmin Petru Pește an, Răzvan Andrei Codea, Felix Daniel Lucaci, Codrin Irimescu, Radu Lăcătuș

University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Romania

The objective of this study was to determine whether Hounsfield Unit (HU) measurements in the subcalvarial region can be used as an imaging indicator of cerebral atrophy in dogs. Computed tomography scans from 20 dogs aged 2–13 years were analysed, with HU values obtained at the cranial bone, immediately beneath the calvaria, and at 1 cm depth in the cerebral parenchyma. The results demonstrated significantly lower subcalvarial HU values in dogs aged ≥8 years compared to younger subjects, consistent with an age-related reduction in cerebral density and potential atrophic changes affecting brain structure. Outlier values were identified that deviated substantially from expected ranges, suggesting possible imaging artefacts, individual anatomical variation, or measurement inconsistencies, and emphasising the importance of methodological precision in HU assessment. These findings indicate that HU may have potential as a marker of cerebral atrophy in ageing dogs, contributing to the broader understanding of canine cognitive dysfunction. Validation requires larger and more diverse populations, longitudinal monitoring, and rigorous standardisation to confirm its diagnostic relevance, reproducibility, and eventual clinical applicability.

15:10 – 15:20

OXIDATIVE STRESS RESPONSE TO DIFFERENT INJECTABLE ANESTHETICS IN ANIMALS

Lindsay Duchatelet, Cosmin Pește an, Sanda Andrei

University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania

General anesthesia is an essential component of veterinary practice, providing analgesia, unconsciousness, and muscle relaxation for surgical procedures. While injectable anesthetics are widely used for their efficacy and practicality, their effects extend beyond predictable pharmacodynamics. Increasing attention is being given to their potential influence on oxidative stress and antioxidant defenses, processes closely linked to inflammation, postoperative recovery, and peri-anesthetic complications. Although several agents appear to exhibit anti-inflammatory and antioxidant properties, current knowledge remains limited (Bell, 2017; Djuric et al., 2020; Senoner et al., 2021; Serrao et al., 2022).

This study aims to investigate oxidative stress induced by injectable anesthetics in companion and farm animals. It focuses on identifying markers that reflect redox imbalances and comparing the effects of different agents across species. The goal is to provide insights that support safer anesthetic choices and improved postoperative recovery.

Most injectable anesthetics exhibit antioxidant properties, which can help mitigate oxidative stress during anesthesia. However, their effects may vary between species and depend on physiological or pathological conditions, highlighting the need for context-specific considerations. While these agents generally support redox balance, careful selection and monitoring remain essential to minimize potential adverse effects. Understanding these nuances is crucial for optimizing anesthetic protocols and improving outcomes in both companion and farm animals.

15:20 – 15:30

COMPARATIVE ASSESSMENT OF OOCYTE QUALITY AND EMBRYONIC COMPETENCE IN VITRO FROM SLAUGHTERHOUSE-DERIVED COW AND BUFFALO OVARIES

Crina-Raluca Andrei, Nicolae Tiberiu Constantin, Florin Petrișor Posastiuc, Alexandru Ilie Diaconescu, Mariana Ionita, Ioan Liviu Mitrea

University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
Research and Development Institute for Bovine Balotești, Balotești, București-Ploiești, Ilfov, Romania
Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium

Assisted reproductive biotechnologies, such as *in vitro* fertilization (IVF), play an important role in increasing reproductive efficiency in livestock production. Although the cow is an intensively studied species from this point of view, data on in vitro embryo competence in buffalo remain limited. In this context, this study to compare the capacity of oocytes from cow (*Bos taurus*) and buffalo (*Bubalus bubalis*) to generate viable embryos under standard in vitro culture conditions. This study aimed to compare several parameters (cleavage rate, embryo production rate and embryonic development stage) between cows and buffaloes following in vitro embryo production (IVEP) (Speckhart et al., 2023). Oocytes (40 from each species) were obtained from ovaries from slaughtered animals, were graded (Kouamo et al., 2014), and after maturation, fertilization and culture, the resulting embryos were evaluated on day seven (Shorten et al., 2018). The embryo formation rate was significantly higher in cows (59.02%) compared to buffaloes (15.38%), with the difference being highly statistically significant ($p < 0.001$). Similarly, the cleavage rate also showed a statistically significant difference between species, with buffaloes achieving 53.84% and cows 72.22% ($p < 0.001$). These findings highlight the need for buffalo-specific IVF protocols to enhance reproductive biotechnology efficiency. The study contributes to the understanding of interspecific differences in embryonic development in the laboratory and may represent a starting point for optimizing IVF protocols adapted to buffalo species, with direct applications in assisted reproduction and genetic management of herds.

15:30 – 15:40

THE MOST IMPORTANT HELMINTHS INFECTION OF PIGS IN EXTENSIVE BREEDING

Ivan Pavlović, Jovan Bojkovski, Aleksandra Tasić, Ivan Dobrosavljević, Slavonka Stokic-Nikolic, Dragos Constantin Anita, Adriana Elena Anita, Vesna Karapetkovska-Hristova, Renata Relić

University of Belgrade, Faculty of Veterinary Medicine, Belgrad, Serbia
Faculty of Veterinary Medicine, University of Life Sciences, Iasi, Romania
Scientific Institute of Veterinary Medicine, of Serbia, Belgrade, Serbia
Specialistic Veterinary Institute, Požarevac, Serbia
Faculty of Veterinary Medicine, Ss. Cyril and Methodius University, Skopje, Macedonia

Parasitic infections are constant companions of pig production, regardless of the method of breeding. They are equally found in farm and extensive rearing in all production and age categories of animals. Extensive pig breeding has a long tradition. Although this kind of behavior provides pigs with a much more comfortable life than farming (after all, organic production was developed on its principle), it also has many negative consequences for their health. Pigs are exposed to the risk of outbreaks of infectious and parasitic diseases that can cause large losses in production. Extensive and semi-extensive breeding means that pigs have direct contact with a multitude of transitional hosts of parasites, they are in contact with wild swine, and there is also frequent contamination of the area where they are discharged with the excrement of wild animals. Parasitic infections, along with other

infectious diseases, are extremely common in this way of breeding. Infection is most often with biohelminths (*Metastrongylu*s sp, causative agents of verminous gastritis, *Macracanthorhynchus hirudinaceus*) and zoonotic parasites to which pigs are transitional (*Trichinella spiralis, Taenia solium, Ascaris ssum*) or parent hosts (*Alaria alata*). There are also species that are equally present in extensive and farm farming, such as e.g. *Trichuris suis*, *Oesophagostomum* sp. or *Strongyloideus ransomi.*

15:40 – 15:50

THE DRAMATIC RE-EMERGENCE OF SHEEPPOX, A VIRAL DISEASE ERADICATED IN ROMANIA SINCE 1957

George Burciulescu, Olimpia Iacob
„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Sheeppox (small pox) is an eruptive infectious-contagious disease, with an acute course, characterized by fever, localized or generalized papulo-vesicular-pustular rash on the skin and mucosae, associated with granulomatous pneumonia lesions. It causes mortality losses of over 60% in young sheep and goats and in sheep with poor maintenance status. In Romania, sheeppox has been eradicated since 1957. The present investigations were carried out in a severe episode of sheeppox that broke out in the period June-July 2025 in Teleorman (Dobrotești) and Olt (Tufeni) counties, with dramatic consequences on a herd of 3,300 sheep and goats. The samples were taken and sent to the Institute for Diagnosis and Animal Health (IDAH), Bucharest, where they were examined using the real-time PCR method. Clinically, the evolution was hyperacute in youth and acute in adults, characterized by localized or generalized skin rashes (maculae - papules - vesicles - crusts). The 5-7 month old lambs died instantly. In adult sheep, rashes appeared on the skin in the head region (labial, buccal, mental, supraorbital, infraorbital, auricular, facial, ocular, nasal, palpebral), on the limbs, in the neck region, axillary, abdominal, inguinal, mammary, preputial, foot (interdigital, metacarpal, tarsal), perianal, and on the tail. Anatomo-pathologically, ulcerations and erosions were found on the nasal, buccal, and conjunctival mucosa associated with conjunctivitis. In the upper respiratory tract, catarrhal inflammation and abundant muco-purulent exudate in the nasal cavities were present. The edematous and hyperemic lungs showed small disseminated nodules, both superficially and deeply, in the lung mass, and the tracheobronchial lymph nodes were hypertrophied and congested. Smallpox nodules were present in the heart, rumen, abomasum, on the internal side of the intercostal muscles, prediaphragmatic region, with generalized dissemination. Molecular results confirmed sheeppox and the infected sheep and goat herds were destroyed by stamping out. The re-emergence of sheeppox in Romania was confirmed, reported and included in the Official Bulletin of World Organisation for Animal Health (WAHIS-OEI).

15:50 – 16:00

LOCAL MUSCLE TISSUE REACTIVITY IN NATURAL INFECTION OF RED FOXES (*VULPES VULPES*) WITH *TRICHINELLA BRITOVI*

Olimpia Iacob, Laura Andreea Olariu
„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Trichinellosis is a serious parasitic zoonosis maintained in nature by wild animals, among which the red fox (*Vulpe vulpes*) makes an important contribution. The research was carried out during 2023-2025, on muscle tissue samples taken from red fox specimens shot in the campaign to evaluate the effectiveness of anti-rabies vaccination in the north-eastern part of Romania. Individually taken samples (tongue, diaphragm, intercostals, masseters) were frozen at -80°C for 10-15 days, and thawing was done in stages, at a temperature of +4°C, for 14 - 16 hours. The selection of positive

cases was done by direct trichinoscopy, examining 72 muscle sections/fields for each fox. From intensely positive cases (10-35 cysts/field), muscle tissue fragments were taken and processed histopathologically, sectioned at 5 µm and stained with Hematoxylin-Eosin. Examination and micro-photography were done on a Leica DM750 photon microscope. The histopathological results revealed normal aspects of the muscle tissue without pericystic, perifibrillary or borderline inflammatory processes of the trichinella cysts. Both in transverse and longitudinal section, the cysts were round in shape and adipocytes were observed at the poles. The number and dispersion of polar adipocytes suggest the active period of the lesional process, while the incipient partial to total calcification suggests the inactivation and progressive death of the larvae in the cysts. Local, cellular and tissue reactivity to trichinella cysts was similar in both the lingual muscle tissue and the muscle tissue in the diaphragm, intercostals, and masseters, suggesting acceptance of the development of parasitic formations as "self". It seems that the enzymatic and antigenic equipment of the parasite substitutes the enzymatic equipment of the myocyte, canceling the ability to recognize foreign parasitic proteins and finally, the larvae transform the myocyte into their own home (cyst wall) and source of nutrients (nurse cell).

16:00 – 16:10

MOSQUITOES (*DIPTERA: CULICIDAE*): BIOINDICATORS OF CLIMATE CHANGE. CASE STUDIES FROM THE DANUBE DELTA AND THE IAȘI REGION

Liviu Miron, Acatrinei D. Mihai, Gabriela Martinescu, Raluca Mîndru, Lavinia Bianca Rotariu, Larisa Ivănescu
„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

The study analyzes the role of mosquitoes (Diptera: Culicidae) as bioindicators of climate change by comparing communities from two climatically contrasting regions: the Danube Delta and the Iași area. The research examines how variations in temperature, humidity, and precipitation influence the abundance, diversity, and phenology of Culicidae species. The results highlight an extension of the activity season and an increase in the frequency of thermophilic species in years with higher temperatures. In the Danube Delta, higher values of diversity and population density were recorded compared to the Iași region, confirming the sensitivity of mosquitoes to local climatic conditions. The study emphasizes the potential of Culicidae species to serve as effective bioindicators of regional climate change

16:10 – 16:20

COMPARATIVE EVALUATION OF TRAPPING METHODS FOR PHLEBOTOMINE SAND FLIES IN ROMANIA

Bianca-Lavinia Andronic, Larisa-Maria Ivănescu , Gabriela-Victoria Apopei, Raluca Mîndru, Liviu Miron
„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Phlebotomine sand flies (Diptera: Psychodidae) are vectors of *Leishmania infantum*, the causative agent of leishmaniosis, a zoonosis ranking among the most important vector-borne diseases worldwide. Despite recent reports of autochthonous and imported cases of leishmaniasis in Romania, current data about the geographical distribution of sand flies remain scarce. Constant surveillance and updated records of the distribution of these vectors are essential to evaluate the epidemiological risk and possible disease expansion. For good and reliable monitoring of these vectors, effective and standardized capture methods are needed.

Between May and September of 2023, 2024, and 2025, a total of 55 sand fly specimens were collected from 13 sites across northeastern (Suceava, Botoșani, Iași) and southeastern (Brăila, Tulcea,

Constanța) Romania. Three capture methods were employed: the New Standard Miniature Light Trap (John W.Hock Company, USA), Laika Trap 4.0 (LaikaLab, Pozzuolo, Italy), and sticky traps. Traps were placed in habitats favorable for sand flies (wind-sheltered, shaded areas with organic matter, close to animal shelters), from dusk until down, during periods when mean temperatures exceeded 15°C. Captured specimens were preserved in 70% ethanol and morphological identification was perfomed for confirmation using standard taxonomic keys under a Zeiss Stemi 305 stereomicroscope.

Our results showed that in the sites where sand flies were present, New Standard Miniature CDC Trap and Laika traps provided comparable yields, whereas sticky traps proved far less effective. Both light-based traps rely on similar principles (light attraction and downdraft aspiration) and performed similarly under field coniditions, although they differ in technical aspects, like Laika Trap 4.0 uses LED light, has reduced energy consumption and tends to capture fewer non-target insects, while CDC Light Trap is incandescent-light based, robust, and widely used as a reference method in entomological surveys.

This comparative study highlights that both light-based traps, New Standard Miniature CDC Light Trap and Laika Trap 4.0, remain efficient options for routine sand fly surveillance, with the choice depending on field conditions. These findings support the implementation of light-based traps for systematic sand fly surveillance in Romania, where updated distribution data are essential for leishmaniasis risk evaluation.

16:20 – 16:30

SEVERE REPRODUCTIVE DISORDERS AFTER ABDOMINAL FAT NECROSIS IN DAIRY CATTLE

Vasilică Gotu, Sorin Aurelian Pașca, Ștefan Gregore Ciornei, Dragos Constantin Aniță, Daniela Porea, Geta Pavel, Răzvan Nicolae Mălăncuș, Gheorghe Savuța, Mariana Ioniță, Gheorghe Solcan, Ioan Liviu Mitrea

„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
University of Agronomical Sciences and Veterinary Medicine Bucharest

Abdominal fat necrosis is a dystrophic–necrotic process that is relatively common in dairy cows. It is determined by productive strain (excess fat in the diet), negative energy balance after calving, a lack of physical activity, vitamin E and selenium deficiency, etc. Lipomatous masses are predominantly located in the omentum and mesentery in cattle, potentially causing intestinal obstruction. We report on an outbreak of abdominal fat necrosis that affected 135 of 220 cows and heifers (61.36%); this involved massive fat accumulation in the uterine and salpingian ligaments and severe reproductive disorders (reducing fertility to 20% in cows and 10% in heifers) caused by a hyperenergetic diet (supplementation with saturated fats). A transrectal ultrasound examination of the genital apparatus—both in heifers and in cows in the puerperium—revealed a diffuse pathological hyperechogenicity of the cervical folds, suggesting lipid infiltration, proliferation of the endocervical folds and hyperechogenic lipogranulomas located paracervically or in the uterine ligaments. An ultrasound examination of the ovaries showed the presence of parasalpingial lipogranulomas on the mesovarium, with a uniformly pixelated greasy appearance, that altered the topography of the salpinx, leading to the impossibility of oocyte retrieval.

At the histopathological examination, in addition to the necrosis of adipocytes and the subacute–chronic inflammation of the abdominal and retroperitoneal adipose tissue, lipid infiltration of the uterine walls was also observed in the uterine ligaments and lymph
nodes. Additionally, lipid infiltration was observed in the wall of the uterine artery. All muscular-type branches of the ovarian artery exhibited subendothelial (subintimal) amyloid deposits, severely reducing their lumen and leading to ischaemia. Amyloidosis was secondary to the systemic inflammatory process triggered by lipid deposition and necrosis. Fertility returned to normal 45–60 days after the exclusion of fat supplements from the diet and their replacement with a vitamin–mineral supplement rich in antioxidants.

16:30– 16:40

CONTROL OF OVARIAN FUNCTION IN THE FERTILITY MANAGEMENT OF DAIRY CATTLE

Hârbu Amalia-Ioana, Borș Silviu-Ionuț, Roșca Petru, Florin Nechifor, Ciornei Ștefan Gregore, Drugociu Dan Gheorghe

„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
Research and Development Station for Cattle Breeding Dancu,Iasi, Romania

Reproductive performance in dairy cows has become increasingly challenging due to the demands of intensified milk production. This surge in productivity has led to significant physiological strain on the animals, resulting in a notable decline in fertility rates. Thus, high-yielding cows are often predisposed to reproductive challenges, such as delayed resumption of ovarian cyclicity, cystic ovarian disease, and anovulation, which decrease conception rates. These disorders are closely linked to the metabolic stress and hormonal imbalances associated with intensive milk production. Controlling ovarian function through timed artificial insemination (TAI) protocols has become an essential strategy for addressing various challenges. Protocols like Ovsynch, Presynch, Double Ovsynch, and other TAI protocols, allow precise synchronization of ovulation. This approach reduces the dependence on estrus detection. In addition, the incorporation of progestative devices further supports luteal function and enhances reproductive outcomes. In parallel, advanced assisted reproduction techniques, including embryo transfer and *in vitro* fertilization, expand the options available for genetic improvement and reduce the gap between generations. While metabolic status and individual variation in ovarian response can influence the outcomes of TAI protocols, continual advancements in protocol development and reproductive management strategies are enhancing cow fertility. Integrating TAI protocols with assisted reproduction techniques can significantly enhance fertility management in dairy cows, supporting farm profitability.

16:40-16:50

TYPE I HYPERSENSITIVITY IN CATS: ALLERGEN SPECIFIC IGE ASSESSMENT BY IMMUNOBLOT

Cristina-Elena Horhogea, Anamaria Strichea, Alice-Teodora Calance, Gheorghe Solcan, Cristina-Mihaela Rîmbu

„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Type I hypersensitivity causes serious problems in animal pathology, affecting pets health and well-being. The immunopathological mechanism is based on two stages. In the sensitizing phase, the animal body is exposed to various allergens, followed by the synthesis of specific, cytophilic immunoglobulin E (IgE). In the triggering stage, a new exposure of sensitized animals will cause mast cells to degranulate and produce specific symptoms (intense pruritus, dermatitis, allergic rhinitis and, in severe cases, anaphylaxis). The present study was carried out between April 2023 and April 2024 on serum samples obtained from thirty cats of different breeds, ages and sexes who presented with cutaneous, respiratory or digestive symptoms at the Faculty of Veterinary Medicine (Iasi University of Life Sciences), as well as veterinary clinics from Moldova region. The evaluation was assessed using Polycheck FELIS CCD immunoblot test, allowing the identification and quantification of specific antibodies (IgE isotype) against aeroallergens from house dust mites (*Dermatophagoides farinae*, *Dermatophagoides pteronyssinus, Lepidoglyphus destructor, Tyrophagus*, *Acarus siro*), fungi and yeasts (*Malassezia*, *Aspergillus fumigatus/Penicillium notatum/ Alternaria tenuis/Cladosporium herbarum*), pollen from various plants, flea saliva. Various degrees of positivity for antibody titers were recorded in 17 cats. Allergies management requires a complex approach, that includes identifying and avoiding allergens, antihistamines and corticosteroids administration to

reduce inflammation and allergic reactions, and allergen-specific immunotherapy in chronic or severe cases.

16:50-17:00

EXTRA-ARTICULAR UHMWPE CRCL RECONSTRUCTION IN A CANINE: A CASE REPORT WITH TWELVE-MONTH CLINICAL FOLLOW-UP

Eusebiu-Viorel Șindilar, Iulian Mihăilă, Alexandra Ciubotariu
„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Extra-articular reconstruction of the cranial cruciate ligament (CrCL) using ultra-high-molecular-weight polyethylene (UHMWPE) implants demonstrated encouraging clinical outcomes in a Labrador Retriever presenting with an acute, complete CrCL rupture. Although this surgical approach is not yet widely implemented, it offers several noteworthy clinical advantages.
Positive long-term outcomes were recorded at twelve-month follow-up. Only minimal craniocaudal joint laxity was noted, indicating sustained mechanical stability provided by the implant. The stifle joint remained pain-free, with no clinically significant complications. Radiographic evaluation confirmed preservation of joint congruency and no progression of osteoarthritic changes.

17:00-17:10

A NEW TREATMENT STRATEGY FOR LYMPHOPLASMACYTIC GINGIVOSTOMATITIS IN DOMESTIC CATS

Eusebiu-Viorel Șindilar, Iulian Mihăilă, Alexandra Ciubotariu
„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Lymphoplasmacytic gingivostomatitis (LPGS) is a chronic, immune-mediated inflammatory condition affecting the oral mucosa of cats, often resulting in severe pain, dysphagia, and decreased quality of life. This study presents a novel therapeutic approach involving (briefly mention treatment – e.g., immunomodulatory therapy, laser treatment, stem cell therapy, etc.), applied to a clinical case of a domestic feline patient. Results indicated significant clinical improvement in inflammation, oral discomfort, and feeding behavior within 4-12 weeks post-treatment. This case highlights the potential efficacy of emerging therapies in managing refractory LPGS.

17:10-17:20

ULTRASOUND DIAGNOSIS OF GRASS AWNS IN DOGS AND SURGICAL EXTRACTION WITH REDUCED SURGICAL TRAUMA

Iulian Mihăilă, Constantin Lazăr, Eusebiu-Viorel Șindilar, Vasile Vulpe
„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Vegetative foreign bodies, especially grass awns, are a common cause of paw lesions in dogs and can be difficult to differentiate from other inflammatory conditions, such as interdigital furunculosis. The aim of this study was to evaluate the utility of ultrasound in the diagnosis of interdigital vegetative foreign bodies and in guiding surgical interventions.
The study included 15 dogs with clinical signs of lameness and paw lesions (swelling, erythema, fistulas with purulent secretion). All patients underwent high-resolution ultrasound examination, which allowed the identification of vegetal foreign bodies in the form of hyperechoic linear structures surrounded by hypoechoic inflammatory reaction. Subsequently, the foreign bodies were surgically removed through an incision located according to the ultrasound trajectory.
In all cases, ultrasound facilitated precise localization of the foreign body and contributed to successful surgical extraction, with no recurrences at postoperative re-evaluations. The results confirm that ultrasound is a rapid, non-invasive and efficient diagnostic method, useful both for

identifying vegetal foreign bodies and for planning minimally invasive surgical procedures in dogs with penetrating lesions.

17:20-17:30

REVERSIBLE LEFT VENTRICULAR HYPERTROPHY IN A CAT WITH TRANSIENT MYOCARDIAL THICKENING: A CASE REPORT

Mălina-Cristina Maftei, Laura Marina Scîntei, Radu Andrei Baisan, Vasile Vulpe
„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania

Background: Transient myocardial thickening (TMT) is a relatively recently described entity in feline cardiology first introduced in 2018 by Novo Matos et al, characterized by reversible left ventricular wall thickening (LVWT) that initially mimics hypertrophic cardiomyopathy (HCM). Recognition of TMT may have a significant impact on daily clinical cardiology, as it can encourage both clinicians and owners to pursue treatment in cases that would traditionally be considered to carry a poor prognosis, thereby reducing the risk of premature euthanasia. The aim of this study is to present a case of TMT in a young cat and to illustrate the role of serial echocardiography.

Case description: A 1-year-old British Shorthair, male, was presented with acute dyspnea and lethargy. On physical examination tachypnea, gallop rhythm, and systolic murmur were detected. Thoracic radiographs revealed the presence of pulmonary edema and pleural effusion, and echocardiography showed marked concentric LVWT (IVSd:0.62 cm; LVPWd: 0.75cm) with severe left atrium dilation and the presence of spontaneous echocardiographic contrast. The cat was treated with furosemide, oxygen supplementation and anticoagulants. At re-evaluation three months later, echocardiography showed complete normalization of left ventricular wall thickness with no evidence of persistent hypertrophy, supporting the diagnosis of transient myocardial thickening rather than HCM. The cat remained clinically stable during follow-up.

Conclusion: This case highlights the importance of recognizing transient myocardial thickening as a differential diagnosis for hypertrophic cardiomyopathy phenotype in cats presenting with acute myocardial changes. Serial echocardiographic assessment is essential for accurate diagnosis and prognosis, as TMT carries a more favorable long-term outcome compared to HCM. Notably, this syndrome is most often reported in young cats and closely resembles stress-induced cardiomyopathy described in humans, further underlining its clinical and comparative relevance.

17:30– 17:40

EFFECT OF OFFSPRING NUMBER AND SEX ON OXIDATIVE STRESS AND LIPID PARAMETERS IN SAANEN GOATS

Aynur Simsek, Ilhan Sabancilar, Kenan Sezer
Dicle University, Faculty of Veterinary Medicine, Department of Internal Medicine, Diyarbakır, Turkey
Burdur Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Internal Medicine, Burdur, Turkey
Dicle University, Faculty of Medicine, Department of Biochemistry, Diyarbakır, Turkey

In this study, serum lipid and oxidative stress levels at birth were investigated in Saanen goats giving birth to different sexes and numbers of offspring. The goats used in the study were grouped according to the number and gender of their offspring. Accordingly, goats were grouped as pregnant (control group), giving birth to a single male (group 1), giving birth to a single female (group 2), giving birth to twin males (group 3), giving birth to twin females (group 4), giving birth to female and male (group 5) and goats birth to triplets (group 6). Blood samples were drawn from each animal within approximately 1 hour after birth. GGT, ALT, TAC, TOC, PON, LDL, CHOL, VLDL, TG and HDL parameters were measured in blood serum. Considering the mean TOC serum values between

the groups, the highest value was found in goats that gave birth to triplets ($p<0.01$). It was observed that the PON level was highest in pregnant goats and there was a statistical difference ($p<0.05$) between those who gave birth to triplets. It was determined that the LDL level of pregnant goats was higher than that of goats that gave birth to one offspring ($p<0.05$). The mean serum VLDL and TG levels of pregnant goats were higher than that of goats giving birth ($p<0.001$). The lowest serum HDL (<0.01) and the highest ALT ($p<0.001$) values were registered in pregnant goats and goats giving birth to triplets. The difference of serum TAC, CHOL and GGT levels was statistically insignificant ($p>0.05$) between the groups.

THIRD SECTION
PUBLIC HEALTH

➔ Pharmacology laboratory, 1st floor, bulding 5

PLENARY SESSION

Chairpersons: Prof. Hab. Nicolae STARCIUC, PhD – Univ. Tehnică Chișinău
Assoc. Prof. Eugenia DUMITRESCU, PhD – USV Timișoara
Assoc. Prof. Adriana Elena ANIȚĂ, PhD – USV Iași

14:00 – 14:10

THE POWER OF DIGITAL PCR – ADVANCING SCIENCE, SAVING LIVES

Alexandra Livescu
Sales Director Life Science, Food Safety and Veterinary Diagnostics - Dialab Solutions

In the last decade Digital PCR technology gained the reputation of a powerful technology which delivers accurate, sensitive detection, and absolute quantification of the molecular targets of interest. Today Bio-Rad offers the most comprehensive line of digital PCR products. With a multiplexing capacity from one to twelve targets, and a throughput choice of up to 384 wells, the digital PCR platforms from Bio-Rad support numerous applications including mutation detection, copy number determination, genome edit detection, gene expression, expert design assays, residual DNA quantification, and library quantification and many more. With the recent addition of four new instruments, the digital PCR portfolio sets a new benchmark in providing advanced Droplet Digital PCR (ddPCR) solutions and world-class expertise, tested and proven by 12,000 publications. The QX Droplet Digital™ PCR Systems Portfolio includes platforms based on droplets (ddPCR), as well as cartridges, capitalizing on the benefits, advantages and applications offered by both partitioning technologies. Showing excellent performances and a workflow easy to integrate in every molecular laboratory, Digital PCR is a powerful research and diagnostic tool in diverse domains, such as oncology, rare diseases studies, microbiology, infectious diseases, food and water testing, GMOs, environmental studies. Digital PCR is becoming a method of choice for epidemiological surveillance, thanks to the capacity of early detection of low pathogen loads from difficult samples like waste water, sewage, soil. Thus, an increasing number of studies point towards digital PCR as a powerful and valuable method for early detection, tracking, and containment of infectious diseases.

14:10 – 14:20

PRODUCTION MEDICINE - THE IMPACT OF TEMPERATURE IN MILK PRODUCTION

Șerban Blaga, Daniel George Bratu, Bianca Cornelia Zanfira, Ioana Spătaru, Iuliu Torda, Călin Mircu, Ioan Huțu
University of Life Science "Regele Mihai I", Timisoara, Romania

In the context of global warming, considering temperature as a technological management factor is becoming increasingly necessary. This study evaluated the influence of temperature on milk yield and composition in a herd of 1,333 dairy cows of the Simmental and Brown Swiss breeds, starting from the hypothesis that temperature significantly modifies these parameters. The variable used to stratify temperature level was the monthly sum of temperature degrees—a climatic indicator represented by the total of the daily mean air temperature values recorded within a month. The analysis relied on official milk recording (test-day) data of daily milk yield and chemical composition, with particular reference to fat, protein, casein, and lactose, as well as on the assessment of the

Somatic Cell Count (SCC — Somatic Cell Count) as an indicator of udder health. The effect of season was estimated using mixed models, with adjustments for parity and Days in Milk (DIM — Days in Milk), controlling for variability between animals and for the order of the recording sessions. The results indicated that, during warm periods, milk yield is lower, and protein and casein contents decrease compared with the cold periods; fat percentage shows a moderate reduction, lactose remains relatively stable, and SCC increases, suggesting a higher summer vulnerability of udder health. We conclude that temperature level significantly influences milk yield and composition and should be considered in dairy production medicine, which argues for management measures adapted to ambient temperature to maintain the technological performance of milk and udder health.

14:20 – 14:30

ANALYSIS OF NON-GENETIC FACTORS AFFECTING MILK UREA CONTENT IN DAIRY COWS

Daniel George Bratu, Șerban Blaga, Bianca Cornelia Zanfira, Călin Mircu, Ioana Spătaru, Iuliu Torda, Alexandru Eugeniu Mizeranschi, Daniela Elena Ilie, Ioan Huțu
University of Life Science "Regele Mihai I", Timisoara, Romania

The study analyzed 26,105 test-day records from 1,465 dual-purpose cattle (Romanian Brown and Romanian Simmental) collected between 2011-2025 to identify non-genetic factors affecting milk urea concentration and optimize nitrogen utilization in Romanian cattle farms. Linear mixed models revealed that while season was the most significant environmental factor ($p<0.001$), with summer concentrations exceeding winter values by 4.3 mg/dl, the fixed effects of season, lactation stage, parity, breed, and year explained only 1.92% of total phenotypic variance. A significant breed × season interaction demonstrated differential responses, with Romanian Brown showing a 6.1 mg/dl seasonal variation (18.8 mg/dl winter to 24.9 mg/dl summer) compared to only 2.5 mg/dl in Simmental (21.5 to 24.0 mg/dl). Milk urea concentration increased progressively through lactation stages from 21.2 mg/dl in early lactation to 23.2 mg/dl in late lactation, while multiparous cows maintained 0.96 mg/dl higher concentrations than primiparous animals. The unexplained variance (84.5%) and moderate intra-animal correlation (ICC=0.138) indicate that individual animal factors and unmeasured nutritional variables predominate over systematic environmental effects. The remaining variation likely reflects genetic differences between animals, nutritional factors not captured in this study, and their interactions. These findings suggest that while seasonal dietary adjustments are justified, particularly for Romanian Brown cattle, precision feeding approaches targeting individual animal requirements, would be more effective than traditional group-based nutritional strategies for optimizing milk urea levels in Romanian cattle systems.

14:30 – 14:40

RESEARCH ON RESISTANCE PHENOTYPES OF *E. COLI* STRAINS ISOLATED FROM FOXES (*VULPES VULPES*) IN TIMIȘ COUNTY

Alex Cristian Moza, Iulia-Maria Bucur, Andreea Tîrziu, Andrei Alexandru Ivan, Ingrid Dolores Moldovan, Emil Tîrziu
University of Life Science "Regele Mihai I", Timisoara, Romania

E. coli represents a particularly important pathogenic agent. The bacterium is **commonly found** in the intestines of mammals, with a remarkable ability to adapt to diverse environments and is **recognized for its resistance** to multiple antibiotics. The study of *E. coli* strains originating from wild animals is not only ecologically relevant, but also highly significant for public health, as it

provides essential insights into the circulation of resistant bacteria and the risk of their transmission to other species, including humans.

The aim of this study was to isolate and identify *E. coli* strains from wild foxes from hunting grounds in Timiș County and as well as to determine the frequency of their antimicrobial resistance profiles. Thus, a total of 50 samples were collected from 25 fox carcasses from the hunting grounds of Buziaș, Moșnița, Oloșag, Boldur, and Sacoșul Mare, leading to the isolation and identification (using the Vitek2 Compact system) of 31 *E. coli* strains. These strains were tested for antimicrobial resistance to 15 antibiotics by Kirby-Bauer method. The highest frequencies of resistance phenotypes were observed against ceftazidime (63–75%), ciprofloxacin (56–60%), and imipenem (44–60%). Multidrug resistance was identified in 8 (57.1%) isolates of *E. coli*, suggesting a potential capacity for both inter- and intraspecific transmission of resistance factors.

This study highlights the antimicrobial resistance of *E. coli* strains found in wild foxes, underlining the importance of continuous monitoring of these populations for public health and for the prevention of antimicrobial resistance dissemination.

14:40 – 14:50

DETECTION OF MICROBIOLOGICAL INDICES IN MEAT ASSORTMENTS FROM SOME SPECIES OF YOUNG ANIMALS

Rita Golban
Technical University of Moldova, Chișinău, Rep. of Moldova

Microbiological research on some bacteriological laboratory investigations aims at a study on the determination of microbiological indices in meat assortments from young animals sold in the halls of a market in Chisinau. A higher number of colonies was determined in the lamb meat samples in the investigations in hall 1, namely 3 microbial colonies, compared to the veal and rabbit meat assortments where the number of colonies determined in the veal samples a number of 4 colonies and in the rabbit meat a number of 3 colonies. In the veal and rabbit meat samples the number of microbial colonies constituted 1-2 microbial colonies.

The results obtained concern the bacterial indices on microscopic smears, of the microbial colonies obtained as a result of the passages according to the comparative aspects regarding the standards on food products. The microbiological indices obtained fall into the category of assessment norms, concluding on the quality of the sausages investigated in the sales halls.

14:50– 15:00

HEALTH MANAGEMENT IN THE ERA OF ARTIFICIAL INTELLIGENCE: CHALLENGES AND OPPORTUNITIES IN DAIRY PRODUCTION

Ioan Huțu, Călin Mircu, Daniel George Bratu, Șerban Blaga, Ioana Irina Spătaru, Iuliu Torda, Bianca Cornelia Zanfira
University of Life Science "Regele Mihai I", Timisoara, Romania

The rapid advancement of Artificial Intelligence (AI) is transforming health management practices across various industries, including dairy production. This paper examines how AI-driven tools and technologies can improve animal health monitoring, disease prevention, and overall production efficiency. Specifically, it proposes the development and use of a database derived from the Official Milk Production Control system, updated at 28-day intervals, to collect and analyze key health and production data from dairy cows. The system would use AI algorithms to analyze data patterns such as changes in milk production levels, variations in milk composition (e.g., fat, protein, and fat-to-protein ratio), somatic cell count (SCC), and milk conductivity trends. It would also consider factors like days in milk (DIM) and the lactation curve to provide a comprehensive health assessment. By correlating these parameters, the system could detect early warning signs of

diseases—such as mastitis—and generate accurate predictions of potential health risks. Diagnostic reports, trend analyses, and prognoses could then be automatically compiled into easy-to-interpret graphs and summaries, which would be sent to veterinarians, farm managers, and owners for timely intervention. In addition, the paper explores critical challenges associated with implementing AI in production medicine, including ensuring data accuracy, addressing ethical considerations around data usage, and providing adequate training for farmers to effectively utilize these technologies. Through real-world examples from dairy farming operations, this study highlights AI's potential to revolutionize livestock health management while emphasizing the practical and ethical considerations necessary for successful adoption.

15:00 – 15:10

MICROFLORA OF REFRIGERATED POULTRY MEAT. INDICES OF ANTIMICROBIAL RESISTANCE AND POTENTIAL RISKS FOR PUBLIC HEALTH

Valentina Crețu, Nicolae Starciuc, Adriana Anită Dragoș Aniță, Cristina Mihaela Rîmbu
Technical University of Moldova,
Faculty of Veterinary Medicine, University of Life Sciences, Iasi, Romania

Poultry meat, due to its nutritional and dietary qualities and comparatively low cost, is one of the most accessible food products for humans. At the same time, globally, the most frequent cases of food poisoning in humans occur as a result of the consumption of poultry meat contaminated with zoonotic bacteria. This fact suggests increased responsibility for the level of biosecurity throughout the technological chain of production, obtaining and marketing of poultry products.

Based on the above, the purpose of our research was focused on establishing the presence and diversity of bacteria in refrigerated poultry meat taken from commercial units of the municipality of Chisinau. The research was carried out on 21 samples of refrigerated poultry meat (neck skin, muscle, minced meat). As culture media for the isolation of bacterial flora, the following were used: XLD agar, MacConkey Agar, Levine EMB Agar, Buffered Peptone Water, Columbia Agar, Rappaport–Vassiliadis Soja Broth, ESBL Brilliance plates (for the detection of ESBL-producing strains), Columbia Agar plates (for fresh cultures intended for antibiogram).The identification of bacterial colonies was carried out using MALDY-TOF mass spectrometry techniques. The research results established a wide range of potentially pathogenic bacteria that represent hygiene indicators, with a greater frequency of bacterial genera such as: *E. coli* (and variants such as *Escherichia albertii, Escherichia fergusonii), Proteus mirabilis, Proteus vulgaris, Morganella morganii, Plesiomonas shigelloides, Moellerella wisconsensis, Aeromonas veronii, Citrobacter braakii, Citrobacter amalonaticus, Serratia liquefaciens, Klebsiella oxytoca, Klebsiella pneumoniae, Raoultella ornithinolytica, Hafnia alvei, Enterobacter hormaechei, Acinetobacter hemolyticus, Acinetobacter baumannii*. The presence of such a wide variety of Gram-negative bacteria indicates extensive microbial contamination in meat samples. Many of these bacteria are considered indicators of poor hygiene and/or opportunistic pathogens, which can cause infections in humans. The presence of *E. coli*, *Klebsiella* and *Citrobacter* in meat samples, especially ESBL-positive strains, highlights a potential risk to public health, as these bacteria can transfer antibiotic resistance to other pathogenic microorganisms. The results of the antibiogram demonstrated the presence of resistance to 3rd generation Cephalosporins in most strains of *E. coli* and *Klebsiella pneumoniae*, indicating a significant prevalence of ESBL-producing strains in these samples. The fact that most strains remain sensitive to Imipenem and Meropenem is a strong point. These would be the antibiotics of first choice for severe ESBL-producing infections. At the same time, a universal sensitivity to Colistin was established, an important signal, as it offers a treatment option for the most resistant cases. The wide resistance to Fluoroquinolones and Penicillins with inhibitors emphasizes the need to avoid their

empirical use in areas with high prevalence of ESBL, and the presence of intraspecific variability of sensitivity even between strains of the same species (*E. coli*), emphasizes the importance of performing an antibiogram for each clinical isolate. The obtained results provide us with a valuable picture of the resistance profile of the bacteria in the analyzed samples and are an essential tool for the clinical management of bacterial infections caused by Gram-negative bacteria with high risk for public health.

15:10 – 15:20

UNDERSTANDING HUMAN BRAIN AND RESPIRATION THROUGH ANIMAL MODELS

Serban Morosan, Mihaela Anca Dascalu, Andreea Paula Cozma
Faculty of Veterinary Medicine, University of Life Sciences, Iasi, Romania

Respiration is increasingly recognized as a fundamental modulator of brain activity across species. In humans, electroencephalographic and neuroimaging studies reveal respiration-locked neural oscillations influencing sensory perception, cognition, and emotion. Importantly, similar respiratory signatures have been documented in animal models, suggesting an evolutionarily conserved mechanism. In rodents, local field potential recordings demonstrate strong coupling between breathing cycles and oscillatory activity in the olfactory bulb, hippocampus, and prefrontal cortex, supporting respiration as a neural "pacemaker." Non-human primates show comparable respiratory entrainment of cortical rhythms, with measurable effects on attention and decision-making. In other mammals such as cats and dogs, respiration-locked cortical activity has long been observed, particularly during sleep–wake transitions, while in birds, breathing patterns are tightly linked to neural circuits controlling vocalization. These cross-species findings highlight respiration as a universal modulator of brain function, while in humans its perceptible and consciously controllable nature confers unique clinical and behavioral significance.

15:20 – 15:30

STUDY OF RETROVIRAL INFECTIONS IN CATTLE AND HORSES: A RETROSPECTIVE EPIDEMIOLOGICAL PERSPECTIVE FROM NORTH-EASTERN ROMANIA

Adriana-Valentina Trandaf, Diana Neghină (Cibotariu), Dragoș Constantin Anița, Gheorghe Savuța
Faculty of Veterinary Medicine, University of Life Sciences, Iasi, Romania

Retroviruses are characterized by their ability to establish persistent infections, and in livestock, EBL and EIA represent the most relevant examples with significant epidemiological and economic consequences. Characterized by lifelong persistence through viral genome integration and immune evasion, these diseases transform infected animals into continuous reservoirs, leading to productivity losses and trade restrictions. The absence of effective vaccines complicates control, which relies on surveillance, early detection, and strict biosecurity measures. Across Europe, epidemiological outcomes differ according to the success of eradication programs; in Romania, EIA remains endemic, while EBL poses an ongoing threat to the cattle industry. This study provides a retrospective epidemiological assessment of EBL and EIA in North-Eastern Romania, based on official veterinary records, serological testing, and field investigations conducted in Iași, Suceava, and Botoșani counties between 2020 and 2024. Results underline the persistence of both infections in the region and highlight the necessity of reinforced surveillance and adaptive control strategies.

15:30 – 15:40

ENZOOTIC BOVINE LEUKOSIS AND FOOD SAFETY: RISKS AND CONTROL APPROACHES

Oana-Raluca Rusu, Gheorghiță Vlad, Alina Borș, Viorel-Cezar Floriștean, Carmen Daniela Petcu, Adriana-Valentina Trandaf

„Ion Ionescu de la Brad" Iași University of Life Sciences, Romania
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Faculty of Veterinary Medicine

Enzootic bovine leukosis (EBL), caused by the Bovine leukemia virus (BLV), is a retroviral disease of major veterinary and economic significance worldwide. Although the primary impact is on animal health, the presence of viral genetic material in milk and lymphoid tissues has raised concerns regarding food safety and possible zoonotic potential. Pasteurization considerably reduces viral infectivity, but complete inactivation remains debated, while ultra-high temperature (UHT) treatment eliminates viral RNA. BLV has not been detected in bovine muscle tissue, yet lymph nodes, spleen, and liver may act as reservoirs. The European Union applies strict eradication programs and prohibits the marketing of raw milk from BLV-positive cattle, while the United States and Canada permit products from infected animals provided thermal processing is ensured. This paper provides a systematic review of scientific evidence, international legislation, and risk management strategies. The findings emphasize the importance of harmonized global standards, strict hygiene, and continued surveillance to ensure consumer confidence and protect food safety.

15:40 – 15:50

PESTE DES PETITS RUMINANTS OUTBREAK IN ROMANIA – CLINICAL SIGNS AND MACROSCOPIC PATHOLOGICAL FEATURES

Ioana Alexandra Răți, Gheorghe Savuța, Daniel Narcis Maftei, Daniela Porea , Luanda Elena Oșlobanu

"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania
Biodiversity Conservation and Sustainable Use of Natural Resources, Danube Delta National Institute for Research and Development, Tulcea, Romania
Laboratories and Research Stations Department, Danube Delta National Institute for Research and Development, Tulcea, Romania

Peste des petits ruminants (PPR) is a significant transboundary animal disease. It is a viral contagious disease of small ruminants, capable of causing considerable socioeconomic disruption in livestock-dependent regions. PPR is recognized as a growing threat to animal health and food security, particularly in the context of its' emergence in 2024–2025, in southeastern Europe, with reported outbreaks in Romania, Greece, Bulgaria, Hungary, and Albania. Ensuring control of PPR in Romania is of utmost importance, given the country's significant share of the EU's small ruminant population. With approximately 11.7 million sheep and goats, ranking second in the Union, Romania requires swift recognition and response to potential outbreaks. Early identification of clinical signs and lesion patterns is a critical step in initiating timely control measures. This paper presents an assessment of the clinical manifestations and gross pathological findings observed during one of the PPR outbreaks that occurred in 2024 in Tulcea County, Romania, with the aim of contributing to a better understanding of the disease's evolution under local epidemiological conditions.

15:50 – 16:00

WEST NILE VIRUS ENDEMICITY IN HORSES A SEROSURVEY STUDY IN IASI COUNTY

Luanda Elena Oșlobanu, Ingrid Ecaterina Ursachi, Denisa Iftene (Belecciu), Ioana Rățoi, Stefania Anderco, Diana Neghină (Cibotariu)
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania
Research for Emerging Diseases, Zoonoses and Food Safety (ROVETEMERG)
Sanitary Veterinary and Food Safety Laboratory Iași

West Nile virus causes a mosquito-borne zoonotic disease of public health importance. It's evolution trends in human population is clearly predicted by the seroconversion in horses. The study was carried out in Iași County, Romania and 180 horses were screened for the presence of antibodies against WNV using an IgG competitive enzyme-linked immunosorbent assay. Of the 180 samples tested, 127 (70.55%) were positive for WNV antibodies. Our findings sustain the hypothesis that WNV is endemic in the County. Determination of the seroprevalence and risk factors that are associated with WNV in horses is essential for adoption of effective prevention strategies and sustain the need for public awareness.

16:00 – 16:10

DETECTION OF PAPILLOMAVIRUS DNA IN FELINE ORAL AND CUTANEOUS NEOPLASTIC LESIONS USING PCR

Paul Tutu , Irina Oana Tanase ,Mihaela Anca Dascalu ,Octavian Dumitru Soreanu , Florentina Daraban Bocaneti , Mihai Mares
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

This study evaluated the presence of papillomavirus DNA in 12 tumor samples from cats diagnosed with various types of squamous cell carcinoma affecting the oral mucosa and the skin. A pair of degenerated PCR primers (FAP59/64) designed to recognize two relatively well conserved regions of the L1 open reading frame of most papillomaviruses were used for DNA amplification in the tested samples. By PCR testing, six samples (50%) resulted positive. Of the positive cases, 2 were from male cats and 4 from females; 2 were Persian cats and 4 European cats. Tumor locations included oral mucosa (50%) and skin (ear region, 50%). Histopathological diagnoses among positive samples included Bowenoid carcinoma in situ (n = 2), oral squamous cell carcinoma (n = 2), and cutaneous squamous cell carcinoma (n = 2). These findings suggest a potential association between feline papillomavirus and different subtypes of neoplastic lesions in cats..

16:10 – 16:20

CONTAMINATION OF PLANT AND ANIMAL PRODUCTS WITH PATHOGENIC *ESCHERICHIA COLI*: IMPLICATIONS FOR PUBLIC HEALTH AND FOOD SAFETY

Oana-Raluca Rusu, Adriana Trandaf , Gheorghiță Vlad, Andra-Cristina Bostănaru-Iliescu, Sebastian-Florian Purice, Robert Capotă, Carmen Daniela Petcu , Vasile Stoleru
"Ion Ionescu de la Brad" University of Life Sciences, Romania
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Bucharest, Romania

Food contamination with Escherichia coli is one of the most important public health problems worldwide, being associated with multiple outbreaks of foodborne infections. Although E. coli is a commensal bacterium of the intestinal tract, certain pathogenic strains – such as enterohaemorrhagic (EHEC), enterotoxigenic (ETEC), enteropathogenic (EPEC) or enteroaggregative (EAEC) – can cause severe diseases in humans, including hemorrhagic colitis and hemolytic uremic syndrome

(HUS) (Kaper et al., 2004; Pennington, 2010). Plant products, especially those consumed raw (lettuce, spinach, sprouts), but also those of animal origin, such as beef, raw milk, and unpasteurized derivatives, are major vehicles for the transmission of these pathogens. Contamination can occur both at the primary production stage (through irrigation water, organic fertilizers, or animal hygiene) and along the food chain (in slaughterhouses, processing and handling units). The objective of this article is to carry out a comparative analysis of the sources and mechanisms of contamination with toxigenic E. coli in plant and animal products, to highlight the risks to public health, and to present current and emerging prevention and control strategies, in line with the "One Health" principle.

16:20 – 16:30

THERAPEUTIC POTENTIAL OF THE GENUS *BERGENIA*: A COMPARATIVE PERSPECTIVE ON HUMAN AND VETERINARY MEDICINE

Oana-Raluca Rusu, Marian Burducea, Mirela Cojocariu, Andra Bostănaru-Iliescu
"Ion Ionescu de la Brad" University of Life Sciences, Romania
Research and Development Station for Aquaculture and Aquatic Ecology, "Alexandru Ioan Cuza" University

Medicinal plants represent a fundamental resource for the discovery and development of new therapies, having been used for centuries both in traditional medicine and in modern clinical practice. The genus *Bergenia* (family Saxifragaceae), particularly represented by species such as *Bergenia ligulata*, *Bergenia ciliata*, and *Bergenia pacumbis*, holds a distinctive place in Asian phytotherapy, where it is known as "Paashanabheda" ("the stone-breaker") due to its traditional use in the treatment of urinary calculi. Modern studies have confirmed the presence of significant bioactive compounds, including bergenin, gallic acid, tannins, and phytosterols, which provide the plant with anti-inflammatory, antioxidant, hepatoprotective, antidiabetic, and antimicrobial properties (Koul et al., 2020; Gohain et al., 2022). While in human medicine *Bergenia* has been extensively documented, its applications in veterinary medicine remain less explored, with some references to the topical use of its extracts for their astringent and wound-healing effects in animals (Ahmad, 2018). The aim of this article is to present a comparative analysis of the uses of *Bergenia* in human and veterinary medicine, beginning with its ethnopharmacological background and extending to the findings of modern research, in order to highlight both its therapeutic potential and future research directions.

16:30 – 16:40

EVALUATION OF PHENOTYPIC RESISTANCE PROFILES OF BACTERIA ISOLATED FROM COMMONLY CONSUMED FOODS

Sebastian-Florian Purice, Andra-Cristina Bostănaru-Iliescu, Robert Capotă, Oana Raluca Rusu, Dana Ciauşu-Sliwa, Mălina Maria Şurubaru, Paula Cucu, Dragoş-Constantin Aniţă, Mihai Mareş
"Ion Ionescu de la Brad" Iasi University of Life Sciences, Iaşi, Romania

This study investigated antimicrobial resistance (AMR) in Enterobacterales isolated from retail foods in Iași County, Romania. A total of 156 samples (ready-to-eat salads, ground beef, and fresh cow cheese) were analyzed, revealing high resistance rates to beta-lactams across all products (36.8–73.8%), with fresh cheese showing the highest prevalence. Multidrug-resistant profiles were frequently observed, particularly in cheese and ground beef, likely reflecting the use of antibiotics in veterinary practices. Ready-to-eat salads also exhibited notable resistance, suggesting possible environmental contamination pathways. Importantly, last-resort antibiotics such as carbapenems remained highly effective (97–100% susceptibility). These findings highlight retail foods as significant reservoirs of AMR and emphasize the need for integrated surveillance and stricter antibiotic stewardship throughout the food production chain to mitigate public health risks.

16:40 – 16:50

CHARACTERIZATION OF ANTIMICROBIAL RESISTANCE IN *ESCHERICHIA COLI* ISOLATES FROM RETAIL POULTRY MEAT

Sebastian-Florian Purice, Andra-Cristina Bostănaru-Iliescu, Robert Capotă, Oana Raluca Strugaru, Dana Ciauşu-Sliwa, Mălina Maria Şurubaru, Paula Cucu, Dragoş-Constantin Aniţă, Adriana Aniţa, Mihai Mareş

"Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania

Purpose: This study aimed to assess the prevalence and antimicrobial resistance profiles of *Escherichia coli* in poultry production as an indicator of public health risks associated with retail poultry products.

Methods: Poultry samples were collected and analyzed using standard microbiological methods. *Escherichia coli* isolates were recovered through conventional culture techniques, followed by biochemical characterization and confirmation with matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS). Antimicrobial susceptibility testing was performed using the Kirby-Bauer disk diffusion method against a panel of clinically relevant antibiotics.

Results: Exceptionally high resistance rates were observed to beta-lactams (92%) and fluoroquinolones (90%), indicating widespread resistance to these critically important drug classes. Substantial resistance was also detected to sulfonamides (50%). Moderate resistance levels were recorded for aminoglycosides (32%) and amphenicols (32%), while comparatively higher susceptibility was retained to tetracyclines (12%), monobactams (6%), and carbapenems (4%). Multidrug resistance was prevalent among the isolates.

Conclusion: The findings reveal high resistance rates to first-line antibiotics in poultry-associated *Escherichia coli*, likely driven by historical antimicrobial use in agriculture. The preservation of susceptibility to last-resort agents such as carbapenems is encouraging. These results emphasize the urgent need for strengthened antimicrobial stewardship, robust surveillance systems, and strict implementation of Hazard Analysis and Critical Control Point (HACCP) principles across the poultry production chain to curb the dissemination of antimicrobial-resistant strains through the food supply and safeguard public health.

16:50 – 17:00

NON-CARBONATED BEVERAGES CONTAINING ALOE VERA PULP AND COCONUT JELLY QUALITY ASSESSEMENT AND FOOD SAFETY

Oana-Mărgărita Ghimpeţeanu, Georgeta Ştefan , Elena Gabriela Sicaru, Cristin Borda, Dana Tăpăloagă

University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Bucharest, Romania

Given the increasing Romanian consumer interest in non-carbonated soft drinks containing fruit pieces, particularly those produced using hot fill technology, this study focused on two specific non-carbonated assortments: a soft drink with aloe vera and a soft drink containing coconut jelly and mango juice from concentrate. The objective of the research was to monitor the technological flow and to ensure compliance with applicable quality and safety standards. A total of 28 samples of juices (14 for each type), collected from different production batches, were analyzed. The analyses included physico-chemical tests, such as volume, density, sugar content (°Brix), pH and titratable acidity, as well as microbiological assessments, testing the presence of *Enterobacteriaceae spp.* by using Violet Red Bile Glucose Agar (VRBG) and the presence of yeasts and molds by using Dichloran Rose Bengal Chloramphenicol Agar (DRBC). The beverage with aloe vera pulp exhibited sugar content ranging from 5.08 to 5.19 °Brix, pH values between 3.82 and 3.90, acidity from 1.66 to 1.74 g/l (citric

acid), density between 1.0138 and 1.0144 g/cm³ and the volume varied from 501 to 505 ml. In comparison, the still product with coconut jelly and mango juice from concentrate showed a sugar content between 5.07 and 5.14 °Brix, pH values from 3.83 to 3.96, acidity levels ranging from 1.38 to 1.44 g/l (citric acid), the density ranged from 1.0144 to 1.0149 g/cm³ and the volumes between 501 and 504 ml. From the microbiological point of view, no colony formation was observed on VRBG and DRBC selective media. By monitoring the entire production process and performing the physico-chemical and microbiological analyzes, it was determined that the food safety standards for both products were fulfilled.

17:00 – 17:10

THERAPEUTIC POTENTIAL OF HONEY VARIETIES FROM ALBA COUNTY: ANTIMICROBIAL AND ANTIBIOFILM EFFECTS AGAINST RESISTANT PATHOGENS

Camil Dan Ștefan Harfaș, Mihai Sorin Cernea, Cristina Gașpar, Florica Morariu, Romeo Teodor Cristina, Eugenia Dumitrescu
University of Life Science "Regele Mihai I", Timisoara, Romania
University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca

The antimicrobial activity of honey is well documented and results from a complex interplay of physicochemical and biological factors such as low pH, high sugar content, enzymatic antioxidants, phenolic compounds, and microbial metabolites. This study evaluated the antimicrobial and antibiofilm properties of 14 honey varieties from Alba County, Romania, against multidrug-resistant *Escherichia coli* and *Staphylococcus aureus* strains isolated from wound secretions. Minimum inhibitory concentration (MIC) was determined by broth microdilution, while biofilm inhibition (PI%) was assessed using the crystal violet microplate assay. MIC values ranged from 8% to 30% (v/v), depending on honey type and bacterial strain. The most effective samples (MIC ≤ 15%) included mountain, forest, raspberry, fir, and polyfloral honeys, while acacia, linden, rape, heather, and dandelion honeys showed lower efficacy (MIC ≥ 25%). Biofilm inhibition rates varied between 55% and 92%, with the highest activity observed in mountains, forest, and polyfloral honeys (PI% ≥ 85%). Statistical analysis revealed significant positive correlations between polyphenol content and antibiofilm activity ($r=0.73$ for *E. coli*; $r=0.65$ for *S. aureus*, $p<0.01$). These findings highlight the therapeutic potential of selected honey varieties as natural complementary agents in the prevention and management of multidrug-resistant bacterial infections.

17:10 – 17:20

ACINETOBACTER SPECIES OF CLINICAL INTEREST IN VETERINARY MEDICINE

Robert Capotă, Andra-Cristina Bostănaru-Iliescu , Dana Ciaușu-Sliwa, Valentin Năstasă, Mihai Mareș
Faculty of Veterinary Medicine, University of Life Sciences, Iasi, Romania

Acinetobacter species, particularly those in the *Acinetobacter calcoaceticus–baumannii* (ACB) complex, are increasingly recognized as opportunistic pathogens in veterinary medicine. While traditionally associated with human nosocomial infections, recent studies document their involvement in various clinical conditions in companion animals, farm animals, and exotic species. *A. baumannii*, *A. pittii*, and *A. lwoffii* have been isolated from urinary, respiratory, dermal, and systemic infections in dogs, cats, and horses, among others. Molecular characterization and phenotypic assays reveal a growing presence of multidrug-resistant (MDR) and extensively drug-resistant (XDR) strains, especially in intensive care units. Resistance to fluoroquinolones,

aminoglycosides, and even carbapenems was reported in several countries, with high rates of co-resistance and potential for nosocomial outbreaks. The zoonotic risk highlights the necessity of implementing standardized diagnostic protocols and molecular surveillance, while a One Health perspective is essential to monitor interspecies transmission and antimicrobial resistance trends. This review compiles current data on taxonomy, infection sites, resistance profiles, and documented outbreaks, aiming to raise awareness and inform effective therapeutic and preventive strategies.

17:20 – 17:30

RESEARCH ON CONFIRMING THE DIAGNOSIS OF RABIES AND AVIAN INFLUENZA IN DOMESTIC AND WILD ANIMALS IN NORTH-EASTERN ROMANIA

Branche Octavian
Faculty of Veterinary Medicine, University of Life Sciences, Iasi, Romania

Epidemiological investigations conducted on some major infectious diseases evolving in NE Romania (rabies and avian influenza) were carried out in the period 2018-2024 in both wild animals of hunting interest and domestic animals. In this regard, laboratory examinations that confirmed the diagnosis were of great importance.
The diagnosis of rabies in foxes and cattle was confirmed by direct immunofluorescence (IFD) and bioassay on laboratory mice, and the diagnosis of avian influenza (flu) in swans was confirmed by Real-time RT-PCR.
3612 brain samples collected from foxes and 27 brain samples from cattle were analyzed for rabies - of these, 178 samples were positive by IFD (70 samples from foxes and 27 from cattle), and 43 samples were confirmed by bioassay. Intense circulation of the rabies virus with high epidemic potential was observed in Iași and Botoșani counties, while in Neamț and Vaslui counties the virus presents a low but persistent risk profile.
When infected with influenza A viruses, H5N1 strains were confirmed in 119 swans out of 197 swans examined (approx. 60%). The highest positivity rate was identified in Neamț, Botoșani and Suceava counties where swans nested in greater numbers in wetlands.

17:30 – 17:40

CARE OF PIGLETS AND MANAGEMENT OF VIRAL DISEASES OF THE DIGESTIVE ORGANS

Jovan Bojkovski, Sreten Nedić, Sveta Arsić, Aleksandra Mitrović, Dragos Constantin Aniță, Adriana Elena Aniță, Luanda Elena Oșlobanu, Ivan Pavlović, Branislav Kureljušić, Nemanja Zdravković, Ana Vasić, Ivan Dobrosavljević, Radiša Prodanović, Branko Angjelovski
Faculty of Veterinary Medicine, Ss. Cyril and Methodius University, Skopje, Macedonia
University of Belgrade, Faculty of Veterinary Medicine, Belgrad, Serbia
Faculty of Veterinary Medicine, University of Life Sciences, Iasi, Romania
Scientific Institute of Veterinary Medicine, of Serbia, Belgrade, Serbia
Specialistic Veterinary Institute, Požarevac, Serbia

In contemporary industrial pig production, there is a tendency to disregard the animals' biological needs, which has deleterious consequences for their health and significantly impacts production efficiency. The health of suckling piglets is a prerequisite for profitable pig production and is contingent on the conditions of their keeping, care, nutrition, and health control. The control of diseases of infectious etiology on farms can be achieved through the implementation of prophylactic and therapeutic measures, in addition to heightened oversight of professional services. Viral diseases of the digestive organs represent a constant threat to pig production. It is a fact that one of the most

prevalent health concerns is the incidence of diarrhea. Diarrhea has been identified as a significant economic and health concern within pig populations. In the majority of cases, therapy is symptomatic and frequently yields unsatisfactory outcomes. Vaccination is not a viable option in most cases, and prevention and disease control are limited to implementing animal hygiene measures. Following the implementation of standard animal hygiene measures on farms, the subsequent step is to introduce internal and external biosecurity measures. This involves the monitoring of biosecurity indicators. In the context of our research project, we undertook the monitoring of diseases affecting the digestive organs of pigs from controlled farms. The objective of the present study was to provide a comprehensive overview of diseases of the digestive organs of viral etiology.

FRIDAY, OCTOBER 24th, 2025

Current aspects about Embryo-Tehnologies in animals

7-TH EDITION

In memoriam DHC Runceanu Liviu

DAY 1- Conference

Lecture Room A1MV [hybrid format]

Chairperson: Prof. Mihai-Cosmin Cenariu, Phd– U.S.A.M.V. Cluj-Napoca
Assoc Prof. Habil. Dr. Călin Mircu-U.S.V.T. Timisoara
Assoc Prof. Habil. Dr. Ștefan-Gregore Ciornei, PhD – I.U.L.S. Iasi

This workshop offers the opportunity to participate together in discussions on reproductive biotechnologies applied to domestic animals.
Interested students and graduates, experienced faculty, specialists, practitioners and researchers in the field of embryo transfer, assisted reproduction, embryology and associated fields are invited.

PART I. Speaker presentations

09:10– 09:30

PRACTICAL INSIGHTS INTO EMBRYO TRANSFER IN CATTLE

Iulian Ibănescu
Swissgenetics Pld, Switzerland

09:30 - 10:00

ESTRUM MANAGEMENT AND ARTIFICIAL INSEMINATION IN DOG

Graça Lopes
Department of Veterinary Sciences
ICBAS - School of Medicine and Biomedical Sciences - U.Porto Portugal

10:00 – 10:30

NILI RAVI SPERM QUALITY AND IN VITRO FERTILIZATION RATE

Shamim AKHTER
Pir Mehr Ali Shah Arid Agriculture University Rawalpindi, Pakistan

PART II.
Presentations of Scientific Papers and Book Events

10:30– 10:40

OXIDATIVE STRESS AND LIPID PROFILE ALTERATIONS IN PLACENTAL TISSUE ASSOCIATED WITH RETAINED FETAL MEMBRANES IN ROMANIAN SPOTTED COWS

Sanda Andrei, Horatiu Rafa, Andreea Georgiana Morohoschi, Francisc Dulf, Cristina Laura Ștefănuț
University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Romania

Retained fetal membranes (RFM) are one of the most relevant postpartum disorders in dairy cattle, as they delay uterine involution, promote chronic endometritis, and ultimately reduce fertility. The periparturient period is characterized by complex biochemical interactions involving steroid and non-steroid hormones, prostaglandins, and other biologically active compounds. Although hormonal and metabolic changes around calving are well described, the excessive production of reactive oxygen species (ROS) and the subsequent oxidative stress remain less well understood in relation to the occurrence of RFM. An imbalance between ROS generation and antioxidant defense may impair immune function, favoring postpartum complications.

The objective of this study was to evaluate oxidative stress markers and placental fatty acid profiles in Romanian Spotted cows, with the aim of identifying potential predictors of RFM and clarifying their temporal dynamics around parturition. A total of 22 samples collected from Romanian Spotted cows were included in the study. Placental tissue was sampled aseptically after calving. Protein extracts were prepared to assess antioxidant enzyme activity, while total lipids were extracted and analyzed for fatty acid composition using GC–MS.

Cows affected by RFM exhibited a significant reduction in the activities of superoxide dismutase (SOD) and catalase (CAT), along with decreased total antioxidant capacity (TAC). In contrast, elevated malondialdehyde (MDA) levels indicated increased oxidative stress, cellular damage, and impaired placental function. Fatty acid analysis revealed a shift toward higher saturated fatty acids and reduced mono- and polyunsaturated fatty acids, suggesting enhanced metabolic stress and an inflammatory environment.

Oxidative stress and lipid imbalance appear to be an important mechanisms associated with RFM. The biochemical and lipid markers identified in this study provide valuable insights and may serve as early predictors for improved monitoring, prevention, and management of RFM in dairy herds.

10:40– 10:50

DOES ASSISTED REPRODUCTION TECHNIQUES NEED ARTIFICIAL INTELLIGENCE?

Călin Mircu, Ioan Huțu, Ioana Spătaru , Iuliu Torda, Bianca Lungu, Daniel Bratu, Șerban Blaga, Gabriel Otav
Faculty of Veterinary Medicine, University of Life Sciences "King Mihai I" from Timisoara

First IVF-made baby was born in 1978, while the term of “artificial intelligence” was coined in 1955. These two landmarks of anthropocene could mark the so called Fourth Industrial revolution. The assisted reproduction (ART) developed tremendously, gaining a worldwide use in humans and animals (domestic and wild species). ART tehniques were continously improved and AI gained an important role in their refining. Up-to-date there are a lot of data reporting the improvement of artificial insemination, embryo selection, embryo transfer, ICSI or cloning based on the use of artificial insemination. The involved algorithms are organized as machine learning, nature language

processing, deep learning and mining data, all of them being based on sophisticated analyses of tremendous data volume, making possible sperm and embryo image analyzing, culture media selection or choosing the right moments for triggering the in vitro process. The development of hardware, software and calculation tehniques offers new dimension for AI involvement in various ART techniques. For sure AI will play a more consistent role in the development of ART, either in human or in veterinary medicine, being a helpful tool for researchers or experts.

10:50-11:00

IMMUNOPHENOTYPING OF UTERINE IMMUNE CELLS IN POST-PARTUM CATTLE USING FLOW CYTOMETRY

Mihai Cenariu
University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca

Reproductive success in domestic animals depends on the precise regulation of immune cell populations within the female reproductive tract. Uterine immune cells play critical roles in maintaining tissue homeostasis and protecting against pathogens. Flow cytometry has emerged as a powerful tool for characterizing these complex cellular populations with high sensitivity and specificity, providing quantitative and functional insights beyond traditional histology or immunohistochemistry. This paper synthesizes current knowledge on the application of flow cytometry for immunophenotyping uterine immune cells in post-partum cattle. Alterations in immune profiles associated with reproductive infections, including endometritis and metritis, are described, and the potential of flow cytometry for identifying biomarkers for early diagnosis and therapeutic monitoring is emphasized. Methodological considerations, including tissue dissociation, antibody panel selection, and data analysis strategies, are addressed, alongside emerging trends such as multi-parameter and small-sample flow cytometry. Integration of findings from reproductive immunology and cytometric techniques provides a framework to guide future research and enhance understanding of immune-mediated regulation of fertility in cattle.

11:00-11:10

REPRODUCTIVE MANAGEMENT IN RABBITS

Dmitrii Mațencu
Faculty of Veterinary Medicine, Tehnical University of Moldova, Chișinău

The management of reproduction in rabbits has a special connotation in the industrial sector, given the fact of the particularities of reproduction in this species. By applying the biotechnological procedures for collecting and evaluating sperm, diluting and obtaining doses, estrus and ovulation stimulation protocols, doubled by artificial insemination techniques, promising results can be obtained in this species as well.

11:10-11:20

EMBRYO TRANSFER IN DAIRY COWS, PROFITABLE OR NOT?

Ștefan-Gregore Ciornei
Faculty of Veterinary Medicine, University of Life Sciences, Iasi, Romania

Animal embryo transfer is a technique used in assisted reproduction of animals, consisting of the transfer of fertilized embryos from a donor animal to a recipient animal to support a pregnancy. This technique is used mainly in the reproduction of farm animals, but also in the conservation of endangered species and in biological research. The effectiveness of embryo transfer in dairy cows is

ultimately determined by the genetic value of the donor cow and the quality of the transferred embryo. If the donor has productive characteristics personalized for the farmer, through genotyping, and the characteristics are transmitted to the farmer's descendants, bringing added value and sustainability, then embryo transfer in dairy cows is profitable.

11:20-11:30

STRATEGIES TO INCREASE LUTEAL FUNCTION IN LATE METESTRUS AND EARLY DIESTRUS IN ASSITED REPRODUCTION OF DAIRY COWS: UPDATES IN ACCESSORY CORPUS LUTEUM FORMATION

Silviu- Ionuț Borș
Research and Development Station for Cattle Breeding Dancu, Iaşi, Romania

In dairy cows, current methods for managing reproduction still need improvement. Future advancements will require new strategies to minimize additional interventions and maintain acceptance among veterinarians. As a result, the development of new therapies in dairy cows' reproduction poses a significant challenge for improving reproductive performances. In recent years, there has been an increasing interest in inducing accessory corpus luteum in dairy cows, but the results have been controversial. It is still uncertain whether this strategy, injecting gonadotropin-releasing hormone (GnRH) or human chorionic gonadotropin (hCG) early in the luteal phase following artificial insemination, can be utilized as a herd management tool to enhance reproduction. Our work suggests that implementing this strategy on the farm is feasible only for repeat-breeder dairy cows with low genetic merit for fertility. In the assisted reproductive technologies this strategy seems to improve reproduction in recipient heifers.

11:30-11:40

COLOSTRUM IMMUNOGLOBULIN G CONCENTRATION IN SFAKIA EWES: INFLUENCE OF ESTRUS SYNCHRONIZATION PROTOCOLS

Nicolae Tiberiu Constantin, Antonia Marketaki, Florin Petrișor Posastiuc, Crina Raluca Andrei
University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

This study investigated the influence of estrus synchronization methods on colostrum quality in Sfakia ewes. Two protocols were compared: natural estrus induction via the "ram effect" and artificial synchronization using intravaginal sponges with fluorogestone acetate. Colostrum, the primary source of passive immunity for lambs (Nowak & Poindron, 2006), was evaluated through immunoglobulin G (IgG) concentration, a major determinant of its protective value (Argüello et al., 2004). Twenty ewes were evenly assigned to the two groups. Samples collected within six hours postpartum were analyzed by Brix refractometry, and IgG was estimated using a validated conversion equation (Çetin et al., 2020).

Hormonal synchronization resulted in higher average IgG concentrations (152.26 g/L) compared with natural induction (129.87 g/L), although both exceeded the 50 g/L threshold required for adequate passive transfer (McGuire et al., 2019). Maternal age was positively correlated with IgG levels, while litter size exerted variable effects. These findings support earlier evidence that reproductive management strategies can modulate colostrogenesis (Mellado et al., 2011) and enhance lamb viability.

In conclusion, hormonal synchronization not only improves reproductive efficiency but also enhances the immunological quality of colostrum, with direct implications for neonatal survival and productivity in sheep farming systems.

11:40-11:50

ASSOCIATION BETWEEN SNPs AND PELVIC TRAILS AND REPRODUCTIVE PARAMETERS IN ROMANIAN SIMMENTAL COWS

Spătaru I.I., Torda I., Zanfira B., Bratu D., Blaga Ș., Mircu C., Huțu I
Faculty of Veterinary Medicine, University of Life Sciences "King Mihai I" from Timisoara

Single nucleotide polymorphisms (SNPs) represent the most common genetic variations in the genome, consisting of the substitution of a single nucleotide base in a DNA sequence. They can occur in both coding and non-coding regions and, depending on their location, may influence gene expression, protein structure, and, consequently, the phenotypic traits of individuals.
A total of 21 SNPs, located on several chromosomes, were identified in the vicinity of genes such as ABL2, CAV2.3, CLSTN2, DCBLD2, DPYD, DST, FBXL13, FBXL7, FRMD6, FSTL4, RSBN1L, RUNX2, SAMD12, SEMA6A, and SH3BP4, suggesting that these genetic variants may influence pelvic conformation. Statistical analysis revealed significant relationships between certain allele variants and external pelvimetry measurements, highlighting the fact that the presence of alternative alleles may alter the morphological traits of this region.
With regard to the association study between genetic markers and reproductive indices, 31 SNPs were identified in the proximity of genes with important roles in reproductive processes, such as ACAP2, ACOXL, AFF1, APBB1, ASB2, BMP6, CD40, CTNNBL1, EPRS, FSHR, IGLL1, KALRN, RGS5, RREB1, SFXN5, SLC24A4, SPRY1, TANC2, THOC5, TMEM260, and TUBD1. The results obtained indicate that certain genetic variants are associated with modifications in gestation length, calving interval, service period, and the number of inseminations per gestation, suggesting a potential influence of these genomic regions on reproductive performance.

11:50-12:00

A SUCCESSFUL TREATMENT STRATEGY BASED ON OVARIAN CYST ASPIRATION IN A DAIRY COW- CASE REPORT

Hârbu Amalia-Ioana, Borș Silviu-Ionuț, Roșca Petru, Ciornei Ștefan Gregore, Florin Nechifor, Drugociu Dan Gheorghe
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Ovarian cysts represent a major reproductive disorder in high-yielding dairy cows, often leading to extended calving intervals and considerable economic losses. This case report describes a successful therapeutic approach that combined ultrasound-guided transvaginal cyst aspiration with autologous platelet-rich plasma (PRP) therapy in a six-year-old Holstein cow diagnosed with both follicular and luteal ovarian cysts, 158 days postpartum. Cyst aspiration was performed under epidural anesthesia, using an Ovum Pick-Up (OPU) system, followed by intraovarian injection of PRP and intramuscular administration of a go nadorelin-based GnRH analogue. Ten days after the procedure, estrus activity was detected through behavioral observation and SenseHub monitoring, allowing timely artificial insemination. Pregnancy was confirmed by ultrasonography 30 days later. The positive outcome of this case suggests that ultrasound-guided cyst aspiration, associated with PRP and GnRH therapy, can serve as a minimally invasive and effective strategy for restoring ovarian function. These findings indicate that regenerative autologous products, such as PRP, could be effectively integrated into reproductive management strategies to enhance fertility in dairy cows.

12:00-12:10

MESENCYMAL STEM CELLS-BASED THERAPEUTIC APPROACHES FOR REPRODUCTIVE DISORDERS IN CATTLE

Sandu Pîndaru, Emoke Pall, Florin Beteg, Mihai Cenariu
Faculty of Veterinary Medicine, University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Romania

Reproductive disorders in cattle represent a major challenge to livestock productivity and farm profitability. Conventional treatment methods often yield suboptimal results, especially in chronic or recurrent cases. Mesenchymal stem cells (MSCs) have gained attention as a novel therapeutic option due to their regenerative, immunomodulatory, and anti-inflammatory properties. This paper provides an overview of current MSC-based therapeutic approaches for the treatment of reproductive disorders in cattle, including conditions such as endometritis and infertility associated with uterine or oviductal damage. Various sources of MSCs are discussed, along with their respective advantages and limitations for veterinary use. The mechanisms of MSC action in reproductive tissues, including tissue repair, immune modulation, and hormonal regulation, are examined. Methods of MSC delivery, safety considerations, and outcomes from in vitro and in vivo studies are also presented. While MSC therapies demonstrate considerable potential for improving reproductive function in cattle, challenges remain regarding standardization, dosing, administration protocols, and regulatory approval, thus key areas for future research to support the clinical application of MSCs in bovine reproductive medicine are proposed.

12:10-12:20

OVARIAN MAPPING THE KEY OF THE TIMING FOR ARTIFICIAL INSEMINATION IN MARES

Emma Iordache, Clara Ionela Maciuc, Florin Nechifor, Dan Drugociu, Petru Roșca, Stefan-Gregore Ciornei
Student 6th year
Faculty of Veterinary Medicine of University of Life Science Iași, Romania

In equines, the reproductive activity is seasonal polyserial, thus starting with the spring months and until the autumn there are cyclic estrous manifestations. The months of May, June and July are characterized by a much more pronounced manifestation and expression of estrus. The duration of the sexual cycle can vary from 9 to 33 days, estrus, on the other hand, has a variation from 2 to 10 days, even more. Ovulation takes place 24-48 hours before the end of heat. The oocyte is released in metaphase II, the moment when the oocyte can be fertilized. In the Friesian horse breed, the expression and intensity of estrus is very variable, a fact that leads to difficulty in anticipating the moment of mating or artificial insemination (AI). Currently, the most widespread method of anticipation of ovulation is the monitoring of follicular development, through which changes in the size, structure and shape of the ovulatory follicle are observed. By using repeated ovarian ultrasound, a map of the ovarian follicles was drawn up and the follicles were followed in the dynamics of evolution as a follicular wave, until the ovulatory type follicle and the appearance of the corpus luteum (CL). With the first probable signs of proestrus, follicle sizing began at T0: left ovary F=1.9 cm, right ovary F=2; F = 3.9; F=1.8 cm, at T1 (+4 days) left ovary: F=2; F=2 cm, right ovary: F=2, F=1,9, F=4.2/4.4 cm, at T2 (+16 h) left ovary F= 2cm and others smaller, right ovary F= 4,5/5.2 cm spherical with thickened wall, at T3 (+12 h) left ovary F=2 cm, right ovary F= 5/5.6 cm conical and cloudy, at T4 (+12 h) left ovary F=ovulate (corpus hemorrhagicum). In this case, the Friesian mare is characterized by the development of several follicles on each ovary, but the follicle ovulates at over 5.5 cm.

12:20-12:30

A COMPREHENSIVE STUDY ON TPI CLASSIFICATIONS IN BULLS AND GLOBAL HERD QUALITY INDICATORS

Valentin Alexandru Lavro, Clara Ionela Maciuc, Nacu Gherasim, Florin Nechifor, Dan Drugociu, Petru Roșca, Stefan-Gregore Ciornei
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TPI is a genetic evaluation tool developed to rank Holstein bulls based on their ability to enhance productivity, health, and longevity within dairy herds. It integrates multiple traits into a single index, allowing farmers to make informed decisions when selecting bulls for breeding. Dairy farming faces growing challenges, including increasing global demand for milk, sustainability pressures, and the need for long-term profitability. TPI simplifies breeding decisions by combining economic, functional, and health traits into one reliable score. Purpose of this studies is to compare TPI with other classification systems, including PLI, LPI, and NM, used in different regions, and to explore the future potential of TPI with advancements in genomics and artificial intelligence (AI).
Overall, TPI is a key tool for achieving sustainable genetic improvement and maintaining competitive, productive dairy farms.

12:30-12:40

EMBRIO TRANSFER IN PUREBRED ARABIAN HORSES

Mohammad KIWAN
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Faculty of Veterinary Medicine of University of Life Science Iași, Romania
AL YAZAN STUD, Sakhnin, Israel

The management of reproduction in Arabian horses has gained increasing attention due to the value and genetic importance of this breed. Embryo transfer has become an important biotechnological tool that allows superior mares to reproduce without interrupting their performance careers. This procedure is applied to improve breeding efficiency, preserve valuable genetic lines, and increase the number of offspring from elite mares. However, its implementation varies among regions, depending on access to technology and expertise. Despite its advantages in genetic preservation and productivity, embryo transfer also presents challenges such as high cost, technical complexity, and potential ethical considerations. Nevertheless, it remains a promising technique for the sustainable development of Arabian horse breeding programs.

12:40-12:50

EFFECTIVENESS OF ASSISTED BREEDING TECHNIQUES IN ASSAF SHEEP IN ISRAEL

Yosef ABU TOAMA
Student 6th year
Faculty of Veterinary Medicine of University of Life Science Iași, Romania
ABU TOMA YOSEF LTD, Baqa al Gharbiya, Israel

The genetic progress and productivity of an Assaf sheep farm in Israel is sustainable only through constantly applied reproductive biotechnologies. Success is guaranteed if the sheep are synchronized in homogeneous batches staggered throughout the year. This managerial distribution ensures that a constant amount of milk is obtained throughout the year, because there are always sheep in the lactation curve. In the farm in Israel, 2400 Assaf sheep were synchronized monthly for a year.

After using rams to collect the semen, it is qualitatively examined and through classical AI techniques the synchronized ewes are inseminated. The total conception rate in Assaf sheep in the Assaf farm in Israel was 83.25%.

12:50-13:00

OVARIECTOMY IN MARES: CLINICAL CASE OF AN OVARIAN TUMOR

Juliette GOLLA
Student 6th year
Faculty of Veterinary Medicine of University of Life Science Iași, Romania

This clinical case presents a 16-years-old Arabian thoroughbred mare, former endurance competition horse now retired as a leisure horse, never been bred. This mare was presented with unusual behaviors and estrous cycle abnormalities. It usually didn't show signs of heat, but suddenly started to demonstrate estrus signs,
triggered in new environment and around new horses outside the normal estrus period.
Clinical examination and ultrasound revealed a suspicious honeycomb appearance of the ovary, typical of ovarian neoplasia, confirmed by blood test. Following this tumor suspicion, an ovariectomy had been performed by laparoscopy, thanks to an early diagnosis of the tumor, allowing a minimally invasive procedure and avoiding the risk of general anesthesia. The affected ovary had been removed successfully, with a great cosmetic result and a return to normal behavior and heat symptoms.

13:00-13:10

EMBRYO TRANSFER PROCEDURES IN WAGHIU COW

Ștefan Mosescu
SC Stefalexu Vet SRL, Brașov, Romania

Animal embryo transfer is a technique used in assisted reproduction of animals, consisting of the transfer of fertilized embryos from a donor animal to a recipient animal to support a pregnancy. This technique is used mainly in the reproduction of farm animals, but also in the conservation of endangered species and in biological research.

Book Events

CLINICAL ASPECTS OF REPRODUCTIVE PHYSIOLOGY

ISBN 978-606-072-383-7, EDITURA EX TERRA AURUM, București 2024

Dorin Țogoe
Faculty of Veterinary Medicine, University of Agronomic Sciences and Veterinary Medicine, Bucharest, Romania

SATURDAY, OCTOBER 25th, 2025

WORKSHOP SESSION – 10:00- PHYSICAL GENITAL EXAM IN BOVINE

Reproduction laboratory

Chairperson: Assoc Prof. Habil. Dr. Ștefan-Gregore Ciornei, PhD – I.U.L.S. Iasi

Organized by – Embryotechnology Club Iași in collaboration with the League of Agronomy and Veterinary Students Iasi.

Participants: Students and young practitioners registered for this event

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