

**UNIVERSITATEA DE ȘTIINȚE AGRICOLE ȘI MEDICINĂ
VETERINARĂ “ION IONÉSCU DE LA BRAD” IAȘI**

FACULTATEA DE HORTICULTURĂ

ASAS - FILIALA IAȘI

SOCIETATEA ROMÂNĂ A HORTICULTORILOR

CENTRUL DE CERCETĂRI HORTICOLE IAȘI

PROGRAM

**SIMPOZIONUL ȘTIINȚIFIC ANUAL CU
PARTICIPARE INTERNAȚIONALĂ**

***“HORTICULTURA – ȘTIINȚĂ, CALITATE,
DIVERSITATE ȘI ARMONIE”***

60 DE ANI DE ÎNVĂȚĂMÂNT SUPERIOR HORTICOL

**26-28 MAI 2011
IAȘI**

Consiliul Profesoral al **Facultății de Horticultură Iași** are deosebita plăcere de a vă invita la Simpozionul științific anual cu participare internațională **“HORTICULTURA–ȘTIINȚĂ, CALITATE, DIVERSITATE ȘI ARMONIE”**, care se va desfășura în perioada **26-28 mai 2011**.

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*The Academic Board of the **Faculty of Horticulture Iași** takes great pleasure in inviting you to Annual Scientific Conference “HORTICULTURE – SCIENCE, QUALITY, DIVERSITY AND HARMONY”, which will be held on **May 26-28, 2011.***

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PROGRAMUL SIMPOZIONULUI

• JOI 26 MAI 2011

AULA MAGNA „HARALAMB VASILIU”

08⁰⁰-09¹⁵ - Primirea și înregistrarea participanților

09³⁰-10³⁰ - Deschiderea festivă a simpozionului și cuvântul invitaților

10³⁰-11⁰⁰ – Prezentarea aniversară a Facultății de Horticultură Iași

“60 de ani de învățământ superior horticol la Iași” - academician Valeriu D. Cotea

11⁰⁰-11³⁰ – Acordarea plachetelor și diplomelor omagiale

11³⁰ – 12⁰⁰ – Prezentarea conferinței cu tema: *Malaria Mosquito Vector Control Beyond Insecticides: Plant Essential Oils As Sources Of Bioactive Compounds With Mosquito Repellent Properties*

Kostas Iatrou - Institute of Biology, National Centre for Scientific Research "Demokritos", Athens, Greece

12⁰⁰ – 12³⁰ – Moment artistic

12³⁰ – 14⁰⁰ - Pauză de masă

ACTIVITĂȚI PE SECȚIUNI

14⁰⁰ - 19⁰⁰ - Prezentarea referatelor (oral/poster) pe secțiuni

19⁰⁰ - 19³⁰ – Discuții, concluzii

20⁰⁰ - Masa festivă (Restaurant Moldova)

• VINERI 27 MAI 2011

10⁰⁰ – 11³⁰ – Masă rotundă: *„Tehnologii moleculare avansate pentru promovarea performanțelor în horticultură”*

12⁰⁰ – 13³⁰ - Prezentarea referatelor (oral/poster)

13³⁰ – 14⁰⁰ – Închiderea lucrărilor simpozionului

14⁰⁰ - 15⁰⁰ - Pauză de masă

15⁰⁰ - Vizitarea laboratoarelor și câmpurilor experimentale

CONFERENCE PROGRAMME

• THURSDAY, MAY 26, 2011

AULA MAGNA "HARALAMB VASILIU"

08⁰⁰ a.m.–09¹⁵ a.m. - Symposium registration

09³⁰ a.m.–10³⁰ a.m. - Opening ceremony, guests speech

10³⁰ a.m.–11⁰⁰ a.m. - Anniversary presentation

"60 years of horticultural higher education in Iași" – acad. Valeriu D. COTEA

11⁰⁰ a.m.- 11³⁰ a.m. – Award ceremony

11³⁰ a.m.–12⁰⁰ a.m. - Plenary session:

Malaria Mosquito Vector Control Beyond Insecticides: Plant Essential Oils As Sources Of Bioactive Compounds With Mosquito Repellent Properties

Kostas Iatrou - Institute of Biology, National Centre for Scientific Research
"Demokritos", Athens, Greece

12³⁰ a.m.–14⁰⁰ p.m - Lunch

1⁰⁰ p.m.–7⁰⁰ p.m. - Oral and poster presentations in sections

7⁰⁰ p.m.–7³⁰ p.m. - Comments upon papers, posters and conference subjects

8⁰⁰ p.m. - Gala dinner (Moldova Restaurant)

• FRIDAY, MAY 27, 2011

10⁰⁰ a.m.–11³⁰ a.m. - Work-shop: *"Advanced molecular techniques for high performances in horticulture"*

12⁰⁰ a.m.– 1³⁰ p.m. - Oral and poster presentations

1³⁰ p.m. - 2⁰⁰ p.m. – Closing ceremony

2³⁰ p.m.– 3⁰⁰ a.m - Lunch

3⁰⁰ p.m. – Labs and experimental fields visit

SECȚIUNEA I - DISCIPLINE FUNDAMENTALE, ECONOMICE ȘI UMANISTE

1.1. Laborator Legumicultură – etaj II

*Botanică
Fiziologie vegetală
Genetica
Ameliorarea plantelor
Chimie- Biochimie
Biofizică și agrometeorologie
Informatică
Statistică biologică și matematică aplicată în biologie*

1.2. Amfiteatrul A₃ – etaj II

*Pedagogie și metodică
Limbi străine
Științe economice*

SECȚIUNEA a II-a - TEHNOLOGII HORTICOLE

2.1. Amfiteatrul A₆ – etaj II

*Legumicultură
Pomicultură
Floricultură
Arboricultură ornamentală
Construcții horticole
Horticultură ecologică*

2.2. Laborator Viticultură – etaj II

*Viticultură
Oenologie
Tehnologia produselor horticole*

SECȚIUNEA a III-a – ȘTIINȚELE SOLULUI. PROTECȚIA PLANTELOR ȘI A MEDIULUI

3.1. Amfiteatrul A₄

*Agrochimie
Agrotehnică
Fitotehnie
Pedologie
Îmbunătățiri funciare
Topografie și cadastru agricol
Mecanizarea agriculturii*

3.2. Amfiteatrul A₅ – etaj I

*Fitopatologie
Entomologie
Microbiologie
Biologia solului
Ecologie
Ingineria mediului*

SECȚIUNEA a IV-a – PEISAGISTICĂ Laborator Floricultură – etaj II

1st SECTION – FUNDAMENTAL, ECONOMIC AND HUMANISTIC SCIENCES

1.1. Vegetable Growing Laboratory, second floor

Botany
Vegetal physiology
Genetics - Plant breeding
Chemistry – Biochemistry
Biophysics and agro-meteorology
Computer science
Biostatistics and Biomathematics

1.2. 3rd Lecture room (A₃), second floor

Pedagogy
Foreign Languages
Economic Sciences

2nd SECTION - HORTICULTURE TECHNOLOGIES

2.1. 6th Lecture room (A₆), second floor

Vegetable Growing
Fruit Growing
Floriculture
Ornamental Arboriculture
Horticultural constructions
Ecological horticulture

2.2. Viticulture Laboratory, second floor

Viticulture
Oenology
Postharvest Technology of Horticultural Products

3rd SECTION - SOIL SCIENCES. PLANTS AND ENVIRONMENT PROTECTION

3.1. Lecture room A₄

Agrochemistry
Agrothechnycs
Phytothechnycs
Pedology
Land ameliorations
Topography and Agricultural cadastre
Mechanization of Agriculture

3.2. 5th Lecture room (A₅), first floor

Phytopathology
Entomology
Microbiology
Soil biology
Ecology
Environmental engineering

4th SECTION - LANDSCAPE ARCHITECTURE

Floriculture Laboratory, second floor

Plenary session

Kostas Iatrou (Institute of Biology, National Centre for Scientific Research "Demokritos", Athens, Greece)

MALARIA MOSQUITO VECTOR CONTROL BEYOND INSECTICIDES: PLANT ESSENTIAL OILS AS SOURCES OF BIOACTIVE COMPOUNDS WITH MOSQUITO REPELLENT PROPERTIES

Every year, over a million children under the age of five die due to malaria infection in countries of the developing world. Responsible for this plague of the Third World is a parasite, which is transmitted by female mosquitoes sucking blood from human hosts. To combat the spread of the disease, insecticides have been used extensively as mosquito control agents, particularly in regions where malaria and its mosquito vector are endemic. However, besides the fact that most insecticides contain constituents that are potent neurotoxic and cancer-causing agents and are thus a great burden to the environment, they also become ineffective with prolonged use due to the rise of resistance in the target mosquito populations. Female mosquitoes locate their hosts by sensing certain volatile chemicals emitted by humans. Specialized molecules in their antennae, the main organs for odor sensing, regulate how they perceive the various odors in their environment. Accordingly, as an alternative to the use of insecticides, we are examining the possibility of achieving a reduction in the rate of disease transmission through the discovery and use of behavior modifying agents capable of interfering with the mosquito olfactory functions. If successful, female mosquitoes would lose their ability to orient themselves towards their human hosts, obtain a blood meal from them and transmit the malaria parasite in the process. Consequently, the rate of transmission of the malaria parasite would be curtailed. This presentation will discuss how plant specimens are used for the isolation of substances that are capable of interacting and interfering with the function of specific components of the smelling apparatus of the mosquito malaria vector. Biochemical screens are employed initially as means for the identification of plants containing components interacting with mosquito olfactory proteins. Extracts of plants shown to be positive in the first screening process are subsequently examined by electrophysiological and behavioral assays that also allow the identification of constituent chemicals having the desirable properties. It is also anticipated that the discovery process for bioactive compounds capable of interfering with mosquito olfaction will include modeling studies leading to rational design of more potent synthetic derivatives. The identification of multiple disruptors of the host seeking behavior of female mosquitoes should provide new and effective tools for a reduction in the frequency of contact between the human host and the disease vector. Additionally, the approach described in this presentation may serve as a paradigm for analogous efforts aimed at a reduction in disease transmission by other vector insects.

1st SECTION

FUNDAMENTAL, ECONOMIC AND HUMANIST SCIENCES

**1.1. BOTANICĂ, FIZIOLOGIE VEGETALĂ, GENETICĂ, AMELIORAREA PLANTELOR,
CHIMIE, BIOCHIMIE, BIOFIZICĂ, INFORMATICĂ, STATISTICĂ BIOLOGICĂ ȘI
MATEMATICĂ APLICATĂ ÎN BIOLOGIE**

**1.1. BOTANY, VEGETAL PHYSIOLOGY, GENETICS, PLANT BREEDING, CHEMISTRY,
BIOCHEMISTRY, BIOPHYSICS, COMPUTER SCIENCE, BIOSTATISTICS AND
BIOMATHEMATICS**

Moderatori:

Prof. univ. dr. **Doina JIȚĂREANU**

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LUCRĂRI PREZENTATE ORAL
ORAL PRESENTATIONS

Luc Swevers¹, Jisheng Liu², Hanneke Huvenne², Guy Smagghe² (¹Insect Molecular Genetics and Biotechnology, Institute of Biology, National Centre for Scientific Research "Demokritos", Athens, Greece, ²Laboratory of Agrozoology, Department of Crop Protection, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium)

THE RNAI RESPONSE IN LEPIDOPTERAN INSECTS: CAN IT BE EXPLOITED FOR PEST CONTROL?

RNA interference (RNAi) is an RNA-dependent gene silencing process that is initiated by double-stranded RNA (dsRNA) molecules. It has been applied with variable success in lepidopteran insects (moths and butterflies, including many agricultural pests), in contrast to the high efficiency achieved in coleopteran insects such as Tribolium castaneum and the agricultural pests Leptinotarsa decemlineata and Diabrotica virgifera. To better understand the relative deficiency in the RNAi response among lepidopterans, we have focused our studies on the silkworm, Bombyx mori, an important lepidopteran model with known genome sequence. Approaches to identify limiting factors in the RNAi response include: (1) gene expression profiling studies for factors of the core RNAi machinery and the dsRNA uptake pathway; (2) studies of uptake of dsRNA by cell cultures in the absence and presence of compounds that inhibit endocytosis or stimulate uptake; (3) identification of nucleic acid degrading enzymes in tissues that could degrade dsRNA. Our current studies focus on the involvement of two RNA-binding proteins, R2D2 and Translin, and an alkaline nuclease that has the capacity to degrade dsRNA, in the efficiency of the RNAi pathway. Our studies aim, through better insights into the RNAi response in this model, for the design of new methods to increase the RNAi efficiency in lepidopteran insects.

BOTANICA
BOTANY

Grigore Marius-Nicușor, Toma Constantin, Ivănescu Lăcrămioara („Al.I.Cuza” University of Iași)

ANATOMICAL AND ECOLOGICAL OBSERVATIONS ON MEDITERRANEAN HALOPHYTES: *SUAEDA* FORSSK. EX SCOP. GENUS.

CONSIDERAȚII ANATOMO-ECOLOGICE LA SPECII DE HALOFITE MEDITERANEENE: GENUL *SUAEDA* Forssk. ex Scop.

In this work, we have anatomically investigated three Suaeda species: S. vera Forssk. ex J. F. Gmel., S. splendens (Pourr.) Gren. & Godr. and S. spicata (Willd.) Moq. (Chenopodiaceae). These taxa were collected from maritime and continental salt marshes from Spain, during July- November, 2010. The obtained results were correlated with some ecological data gathered in the field; they were discussed in order to establish the adaptive value of the evidenced anatomical features

Grigore Marius-Nicușor¹, Toma Constantin¹, Monica Boșcaiu²(¹„Al.I.Cuza” University of Iași, ²Instituto Agroforestal Mediterráneo, Universidad Politécnica de Valencia)

ECOLOGICAL NOTES ON HALOPHYTES SPECIES FROM MEDITERRANEAN CLIMATE.

OBSERVAȚII ECOLOGICE LA SPECII DE HALOFITE DIN CLIMATUL MEDITERANEAN

Salt marshes represent special ecosystems where plant species adopt different adaptive strategies, according to spatial disposition, association with other species or in terms of accurate specialization related to salinity factor. The aim of this work is to present some ecological notes regarding halophytes occurring in maritime and continental salt marshes from Spain. Our observations were conducted during July-November, 2010. These observations lead to the idea that each species has, in fact, a number of morphological, anatomical and physiological adaptations, strictly correlated with environmental factors. Some of these taxa are dominant in salt marshes, having very efficient adaptive strategies assuring them the stability in hyper saline environments. We discuss, extensively, some examples, in a holistic manner.

FIZIOLOGIA PLANTELOR VEGETAL PHYSIOLOGY

Kabashnikova Ludmila, L.M. Abramchik, V.N. Makarov, G.E. Savchenko (Institute of Biophysics and Cell Engineering of National Academy of Science of Belarus, Laboratory for Applied Biophysics and Biochemistry)
STATE OF A PIGMENT APPARATUS IN INTRODUCED CULTIVARS OF GRAPE IN BELARUS

The photosynthetic apparatus of 20 grape cultivars introduced in Belarus during vegetation period was investigated. An essential intervarietal diversity has been revealed regarding chlorophylls and carotenoids content. For almost all unhardy cultivars, the pigment content gained its maximal value already in June, though for the hardy ones it has been still increasing in August. For most of investigated cultivars, the content of photosynthetic pigments falls short of characteristic values for grape plants vegetating in warmer climate zones. The light harvesting system of photosynthetic machinery during the whole vegetation period resembled that of shade-tolerant plants. Most anthocyanins have been detected exclusively in the leaves of red-fruit cultivars. High content of malonic dialdehyde as indicator of oxidative stress, especially at the early stages of vegetation, is typical for most of grape cultivars introduced in Belarus. Composition of photosynthetic pigments being important characteristics for stress resistance of introduced grape cultivars is discussed.

Rotaru Vladimir (Institute of Genetics and Plant Physiology Moldavian Academy of Sciences, Chisinau, Republic of Moldova)

PROLINE CONTENTS IN TWO SOYBEAN CULTIVARS IN RELATION TO NUTRIENT SUPPLY UNDER LOW SOIL MOISTURE REGIME

CONȚINUTUL DE PROLINĂ A DOUĂ CULTIVARE DE SOIA SUB INFLUENȚA FERTILIZĂRII, ÎN CONDIȚII DE UMIDITATE SCĂZUTĂ A SOLULUI

*Proline accumulation is a common physiological response in many plants in response to a wide range of biotic and abiotic stresses. Response of free proline accumulation in two soybean (*Glycine max.L.*) cultivars to phosphorus (P) and iron (Fe) application under suboptimal water regime of soil at the critical flowering stage was studied in a pot experiment. P and Fe were applied at rate 100 mg and 5 mg per kg of soil, respectively. Plants were subjected to low water regime for 2 weeks at flowering stage. Plant dry matter accumulation of both cultivars increased with increasing P level regardless of soil water regimes. After two weeks of water stress (35% WHC- water holding capacity) dry matter production was significantly reduced whereas concentrations of free proline was increased in leaves and roots of both cultivars in treatment without fertilization. Cultivar Zodiac maintained higher level of proline accumulation than Licurici. Recovery upon re-watering was evidently in fertilized-plants than unfertilized plants. Cultivar Zodiac had a higher root/plant ratio of dry matter than Licurici under low nutrient and water environment. We suggest that application of nutrients could partially attenuate the adverse effect of drought on soybean productivity.*

Ștefiriță Anastasia, Toma S., Barbă N., Brânză Lilia, Pojoga V., Robu Ș., Melenciuc M., Buceaceaia Svetlana (Institute of Genetics and Plant Physiology Moldavian Academy of Sciences, Chisinau, Republic of Moldova)

EFFECT OF SALICYLIC ACID'S DERIVATES ON PLANT GROWTH AND PRODUCTIVITY.

EFFECTUL UNOR DERIVAȚI AI ACIDULUI SALICILIC ASUPRA CREȘTERII ȘI PRODUCTIVITĂȚII PLANTELOR.

In experiments in field conditions over several years has been studying the effect of salicylic acid derivatives, in particular of ammonium- and potassium- tioureidosalicilic acid in combination with bioactive co-polymer polyvinylpyrrolidone on processes plant growth and development of cucumbers, potatoes, corn targeting possibility stabilize / increase in the production process. The administration of compounds (by seed treatment and foliar surface) make more economical consumption and productive use of water reserves from the soil by increasing water retention capacity in tissues, activation of the biosynthesis and accumulation of biomass, which ensure the formation of more vigorous plants with high productivity. It was established the compatibility of salicylic acid derivatives with the chemical protective substances against diseases and pathogens, which provides economic returns and environmental safety of the plant cultivation technology and enables reduction of the labour and anthropogenic costs.

Veliksar Sofia, Toma Simion, David Tatiana, Tudorache Gh., Bratco D., Busuioc Valentina (Institute of Genetics and Plant Physiology Moldavian Academy of Sciences, Chisinau, Republic of Moldova)

THE IMPACT OF MICRONUTRIENTS IN THE ACCUMULATION OF PROTECTIVE COMPOUNDS IN THE VINE ORGANS

ACUMULAREA COMPUȘILOR PROTECTORI ÎN ORGANELE VIȚEI DE VIE ÎN FUNCȚIE DE FERTILIZAREA EXTRARADICULARĂ CU MICROELEMENTE

The unfavorable conditions of growth cause significant deviation in intensity of absorption and inclusion of nutrients in the metabolism. Realization of the potential of vine frost resistance and wintering can be enhanced by micronutrients applying, which may serve as a trigger for the accumulation of protective compounds in plant tissues. It has been shown in conditions of production that foliar fertilization of plants in vegetation period contributes to essential changes in the content of free amino acids and carbohydrates in leaves and shoots, the composition of the sap after the winter. The accumulation of stress protective substances (prolin, glutamic acid, glutamine, monosacharides) after fertilization of plants with complex of micronutrients leads to the formation and fuller manifestation of potential of vine resistance to wintering.

GENETICA ȘI AMELIORAREA PLANTELOR
GENETICS AND PLANT BREEDING

Lazăr (Nechita) Adriana, Leonte Constantin, Burlacu (Arsene) Madalina-Cristina (University of Agricultural Sciences and Veterinary Medicine Iași)

DETERMINING THE GENETIC DIVERSITY OF COMMERCIAL SUNFLOWER HYBRIDS BY RAPD ANALYSIS

DETERMINAREA DIVERSITĂȚII GENETICE A UNOR HIBRIZI COMERCIALI DE FLOAREA-SOARELUI PRIN ANALIZA RAPD

Sunflower is the most important oil crop grown in Romania, with wide use in the food and industry sector. The aim of this study was to determine the genetic similarity among 17 commercial hybrids acquired from Pioneer-Hi-Bred International, Limagrain Romanian and two authentic romanian hybrids Fundulea 225 and Favorit. In order to determine the genetic similarity, these hybrids were analysed at the DNA level using RAPD technique. For this purpose an initial screening of 30 decamer primers was made, from which only 7 gave polymorphis bands and were used for further analisys. Based on the polymorphic band obtained, dendrogram was constructed based on UPGMA cluster analysis according to Lei and Ni similarity index.

CHIMIE-BIOCHIMIE
CHEMISTRY- BIOCHEMISTRY

Căpraru Adina-Mirela¹, Ungureanu Elena¹, Trincă Lucia Carmen¹, Popa I. Valentin² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²"Gheorghe Asachi" Technical University Iași)

STUDY CONCERNING OF MODIFICATION OF SPRUCE WOOD BARK BY HYDROXIMETHYLATION REACTION

CERCETĂRI CU PRIVIRE LA MODIFICAREA COJII DE MOLID PRIN REACȚIA DE HIDROXIMETILARE

This work presents a study about reactive extraction of spruce bark by successive treatment of these with an ammonia solution, followed by the hydroxymethylation reaction with formaldehyde and condensation with urea. Products resulting from changes made have been tested for toxicity. For modified and unmodified spruce bark as well as for the products resulting from the extraction were conducted in laboratory tomato plants growing experiments on hard sand. Experimental data showed statistically significant differences according to the sequence of reactions applied to the results of germination experiments. For the sequence of reactions involving the extraction of the shell under the action of ammonia and urea formaldehyde, the results support the recommendation for use as a plant growth stimulator or to obtain slow-release fertilizer.

Căpraru Adina-Mirela¹, Ungureanu Elena¹, Trincă Lucia Carmen¹, Popa I. Valentin² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²"Gheorghe Asachi" Technical University Iași)

CONTRIBUTIONS CONCERNING THE TREATMENT OF BIRCH VENEER WITH LIGNINS MODIFIED AND COPPER COMPOUNDS

CONTIBUȚII PRIVIND TRATAREA FURNIRULUI DE MESTEACĂN CU LIGNINE MODIFICATE ȘI COMPUȘI AI CUPRULUI

This work presents experimental data on the interaction of birch veneer and copper complexes of some commercial products, lignin's Protobind unmodified and modified by hydroxymethylation and epoxydation. The treatments with these compounds were based in a first stage for its successful immersion in solutions of copper chloride or tetra amino copper hydroxide, followed by impregnation with unmodified or modified

lignin's, with a concentration of 5% dissolved in ammonia solution or furfuryl alcohol to achieve in situ of the complexes between the two partners. The efficiency of the treatment was evaluated consecutive by periodically evolution with distilled water to determine the veneer samples impregnated, UV-VIS absorption elution products, and their toxicity experiments by determining the germination of tomato seeds. The results show that the stability of treatment depends on the nature of lignin compound and its ability to copper ion complexity, which ensures optimal interaction with the wood surface.

Tanase Corneliu, Stîngu Alina, Volf Irina, Popa V.I. („Gheorghe Asachi” Technical University Iași)

THE INFLUENCE OF SPRUCE BARK AQUEOUS EXTRACT IN COMBINATION WITH DEUTERIUM DEPLETED WATER (DDW) ON GLYCINE MAX L. PLANT
INFLUENȚA EXTRACTULUI APOS DIN COAJĂ DE MOLID ÎN COMBINAȚIE CU APA SĂRACĂ ÎN DEUTERIU (ASD) ASUPRA PLANTEI GLYCINE MAX L.

The aim of this study was to evaluate the influence of deuterium depleted water (DDW) in combination with spruce bark aqueous extract on soybean plantlet growth and development. Taking this into account, germination tests were carried out in the presence of distilled water (DW-control), DDW, spruce bark extract, and polyphenolic extract in combination with DW and DDW respectively. The characteristic effects of each tested treatment was assessed after ten days from the beginning of the experiment through biometrics analysis and quantitative determinations of plant biomass and by setting the total content of assimilatory pigments. The obtained results have shown that in the presence of DDW a stimulatory effect was evidenced on germination energy and capacity (100%) followed by an increasing trend in primary leaves growth and development. It was observed that the combination of polyphenolic extract with DDW has had a beneficial effect both on the radicles (30%) and steamlet (10%) growth.

BIOFIZICĂ BIOPHYSICS

Budeanu Luiza Camelia, Cazacu Ana, Tartau Liliana, Nica Valentin, Pricop Daniela, Melnig Viorel ("Al.I. Cuza" University of Iași)

HIGH CHEMICAL REACTIVITY OF SILVER-POLY(AMIDEHIDROXYURETHANE) COATED NANOPARTICLES
REACTIVITATEA CHIMICA MARE A NANOPARTICULELOR DE ARGINT ACOPERITE CU POLI(AMIDHIDROXIURETAN)

High chemical reactivity of nanoparticles can be observed in reactions that do not occur in bulk material conditions. For example, bulk silver cannot react significantly with hydrochloric acid (HCl), because the silver chloride (AgCl) product is an insoluble precipitate that forms an insulated layer at the bulk surface silver material. Contrary, if the reaction between Ag nanoparticles and HCl occur, then the product will be AgCl precipitate that can be easily collected for characterization. The water soluble poly (amidehidroxyurethane) (PAmHU) coating polymer can enhance or not the reactivity of silver. The identification and structure characterizations quantify the efficiency of the silver-(PAmHU) coated nanoparticles.

Cazacu Ana, Tartau Liliana, Pricop Daniela, Budeanu Luiza Camelia, Melnig Viorel ("Al.I. Cuza" University of Iași)

ENHANCED PHOTONIC REACTIVITY TO ENVIRONMENTAL STIMULI ANALYSIS OF GOLD-CHITOSAN NANOPARTICLES
ANALIZA REACTIVITATII FOTONICE SPORITE LA STIMULI DIN MEDIU A NANOPARTICULELOR DE AUR-CHITOSAN

Gold nanoparticles were prepared by reducing chloroauric acid with different weight chitosan (which acted as both reducing and stabilizing agent). The samples were heated under an ultrasonic field at room temperature. The composite gold-chitosan nanoparticles are stable in aqueous buffer and retain the respective optical reactivity of the gold colloid to refractive index increases, and of the conductive chitosan biopolymer to pH changes. The new nanoparticles composite displays significant enhancements in photonic performance compared to the individual components, which seem to result from electronic interplay between the two materials in the hybrid structure. The enhanced photonic reactivity of the composite structure offers new opportunities for bio-sensing application.

Cojocaru Nicolae, Constantin Milică (University of Agricultural Sciences and Veterinary Medicine Iași)

D.C. ELECTRICAL STIMULATION OF TOMATO PLANTS
STIMULAREA ELECTRICĂ ÎN CURENT CONTINUU A PLANTELOR DE TOMATE

The results of electrical stimulation on tomato plants are presented. Electrical stimulation was made using 50-100 μ A d.c. with an appropriate polarity. An applied voltage of 15-20V was used between the upper leaves and the ground. Visible effects on growth and development of plants and an increase production as high as 20% were observed.

Oancea Servilia¹, Oancea A.V.² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²"Al.I. Cuza" University of Iași)

CHAOS CONTROL FOR TWO DISSIPATIVE SYSTEMS CONTROLUL HAOSULUI PENTRU DOUA SISTEME DISIPATIVE

Chaos is an interesting phenomenon closely related to nonlinear systems, which is very important for researchers in many disciplines. In medicine and chemistry the phenomenon of synchronization is of interest in studying cardiac rhythms and reactions in chemistry. In industry, synchronization is also used to ensure exact coincidence of frequencies in secure communications and in agriculture the problem of chaos control is important in biological control of weed populations and pests. In this work the master-slave, mutual synchronization and antisynchronization are used in order to control two chaotic dissipative systems governed by jerk functions. Our results show the transient time until synchronization depends on initial conditions of two systems and on the values of negative part of eigenvalues of control parameters. The synchronization can be achieved for all methods but for amplification of chaos very closed initial conditions need to be chosen.

Oancea Servilia², Oancea A.V.² (¹University of Agricultural Sciences and Veterinary Medicine Iasi, ²"Al.I. Cuza" University of Iași)

FRACTAL ANALYSIS OF CORN ROOT CHANGE UNDER ANIONIC CLAYS ACTION ANALIZA FRACTALA A MODIFICARII RADACINII DE PORUMB LA ACTIUNEA ARGILELOR ANIONICE

The fractal analysis is a useful method to characterize the structure of branching trees, root of plants, leaves, membrane surface of cells. The main objective of this study was to evaluate the impact of the treatment with LDH on growth of corn roots, using fractal analysis. In order to evaluate the change on root plants we determined the fractal dimension for untreated and treated corn plant roots. Seeds of corn were put into Petri dishes on double filter paper together with suspensions from anionic clay and they were kept here for five days. The germinated seeds were planted in soil where they continued to growth. After four weeks the root plants have been collected and the fractal analysis was performed. Our results demonstrated that the fractal structure of corn roots changed after the treatment with LDHs. We suggest that these anionic clays increased plant capacity to develop complex roots.

INFORMATICĂ COMPUTER SCIENCE

Călin Marius, Chiruşă Ciprian, Cojocaru Nicolae (University of Agricultural Sciences and Veterinary Medicine Iași)
USING MOODLE TO BUILD A COURSE IN APPLIED MATHEMATICS FOR STUDENTS IN AGRICULTURAL SCIENCES
UTILIZAREA MOODLE ÎN CONSTRUIREA UNUI CURS DE MATEMATICĂ PENTRU STUDENȚII ÎN ȘTIINȚE AGRICOLE

The curricula in different branches of agricultural sciences (Horticulture, Agronomy etc.) include courses in applied mathematics. Previous expertise shows that teaching such a discipline is quite difficult, as the core knowledge of students in agricultural sciences is remote from this area and their skills in dealing with the respective concepts are not always very strong. Such difficulties are more visible when working with distance learning students. Nowadays, e-learning technologies are considered to be among the most efficient ways to improve the quality of teaching and studying. The paper presents an e-learning project for teaching applied mathematics. The software used to build such a course was Moodle.

Croitoru Constantin (University of Agricultural Sciences and Veterinary Medicine Iași)
STUDIES REGARDING THE USE OF GIS AND GPS IN DEVELOPING THE CONCEPT OF PRECISION AGRICULTURE
STUDII PRIVIND FOLOSIREA GIS ȘI GPS ÎN DEZVOLTAREA CONCEPTULUI DE AGRICULTURĂ DE PRECIZIE

The advanced agricultural technologies are based on high level techniques from IT domain. The develop of applications from IT domain is based on the use of systems of geographical informations and satellite navigation, respectively GIS and GPS. This applications allowed farmers to optimize the cost and the product amount, by reducing the costs and maximize the production. In this paper are presented issues regarding the structure and conditions of operation of systems of geographical informations and satellite navigation, GIS and GPS. Also, are analyzed issues regarding the implementation of advanced agricultural technologies wich are based on the use of integrated systems from IT domain. The use of these integrated systems has determined the develop of a new concept under the generic name of „precision agriculture”. Tehnologiile agricole performante se bazează pe utilizarea tehnicilor de vârf din domeniul IT. Dezvoltarea aplicațiilor din domeniul IT se bazează pe utilizarea sistemelor geografice informaționale și de navigație prin satelit, respectiv GIS și GPS. Aceste aplicații au permis agricultorilor să optimizeze costurile pe unitatea de produs, prin reducerea costurilor și maximizarea producției. În cadrul lucrării sunt prezentate aspecte privind structura și condițiile de funcționare ale sistemelor geografice informaționale și de navigație prin satelit GIS și GPS. De asemenea, sunt analizate aspecte privind implementarea tehnologiilor agricole performante, care se bazează pe utilizarea sistemelor integrate din domeniul IT. Utilizarea acestor sisteme integrate a determinat dezvoltarea unui nou concept sub denumirea generică de “agricultura de precizie.



LUCRĂRI PREZENTATE POSTER POSTER PRESENTATIONS

BOTANICA BOTANY

Ghițău Carmen-Simona, Sîrbu Culiță, Huțanu Mariana (University of Agricultural Sciences and Veterinary Medicine Iași)

THE CONTRIBUTION OF ALIEN WEEDS IN CROP INFESTATION, AT EZĂRENI FARM, IAȘI COUNTY
CONTRIBUȚIA BURUIENILOR ADVENTIVE LA INFESTAREA CULTURILOR AGRICOLE DE LA FERMA
EZĂRENI, JUDEȚUL IAȘI

The segetal flora of agricultural crops from Ezăreni farm, Iași County, includes a total number of 107 weed species. Only 10% of these species are alien weeds, but they contribute to a significant degree of weeds infestation, especially in row crops. Amaranthus retroflexus, A. powellii, Xanthium orientale ssp. italicum, Sorghum halepense, Conyza canadensis, and Panicum miliaceum are the most important alien weeds in the studied crops.

FIZIOLOGIA PLANTELOR VEGETAL PHYSIOLOGY

Cauș Maria¹, Brandt Christine², Eichler-Lobermann Bettina² (¹Institute of Genetics and Plant Physiology, Moldavan Academy of Sciences, Chisinau, Republic of Moldova, ²Rostock University, Faculty of Agricultural and Environmental Sciences, Rostock, Germany)

PROTEASE AND ARYLSULFATASE ACTIVITY IN PLANT RESOSPHERE UNDER P AND WATER DEFICIENCY

ACTIVITATEA PROTEAZEI ȘI ARILSULFATAZEI DIN RIZOSFERA PLANTELOR ÎN FUNCȚIE DE DEFICIENȚA PENTRU FOSFOR ȘI APĂ

An experiment was carried in a pot trial under control green house conditions to investigate the impact of soil P and water deficiency on crop rhizosphere protease (PR) and arylsulfatase (ARS) activity. It has been found that edaphic drought led to the decrease of rhizosphere PR activity under sorghum, soybean and ray plants. While the PR activity level under amaranth plants subjected to water deprivation was approximately to that of the control one. The ARS activity in rhizosphere of amaranth and ray plants was not affected by the soil water deficiency. An increasing of soil ARS activity was observed under sorghum and soybean plants.

Coisin Magda, Zamfirache Maria – Magdalena ("Al.I. Cuza" University of Iași)

CONTENT OF THE PHOTOSYNTHETIC PIGMENTS IN SOME SPONTANEOUS SPECIES SALVIA IN FLOWERING STAGE

CONȚINUTUL DE PIGMENȚI ASIMILATORI ÎN UNELE SPECII SPONTANE DE SALVIA ÎN STADIUL DE ÎNFLORIRE

In this study we analyzed the pigments chlorophyll and carotenoids in six spontaneous Salvia (Lamiaceae) species taken in their flowering stage from different regions in our country. We observed that the values obtained for chlorophyll a, chlorophyll b and carotenoid pigments are different from species belonging to the same genus and found in the same ontogenetic stage; also, the intensity of pigment biosynthesis is closely correlated with environmental conditions of leaf development.

Donici Alina, Simion Cristina (Vine and Wine Research and Development Station Bujoru)

STUDY OF THE MORPHOLOGICAL VARIABILITY OF INDIGENOUS VINE VARIETIES BY USING VARIATIONAL STATISTICS IN THE CLIMATIC CONDITIONS OF VINEYARDS DEALU BUJORULUI

STUDIUL VARIABILITĂȚII MORFOLOGICE A SOIURILOR AUTOHTONE DE VIȚĂ DE VIE PRIN UTILIZAREA STATISTICII VARIAȚIONALE ÎN CONDIȚIILE PEDOCIMATICE A PODGORIEI DEALU BUJORULUI

Research has particularity targeted on existing local varieties of SCDVV Bujoru ampelography collection. Cluster analysis acknowledges the existence of similar groups, but not all characterization allows the division between varieties according to the existing degree of dissimilarity or similarity. In this case, groups are formed according to the linked affinity (kinship), and congestion or placing in the group was hierarchical. Distance (dissimilarity) and similarity complement each other, maximum similarity corresponds to short and vice versa and for every individual belonging to the group to the specified distance from its neighbors in the same group of neighbors to the superiors of the group.

Duca Maria¹, Frieder M.², Budeanu O.¹ (¹University Academy of Sciences of Moldova, ²Friederich–Alexander-Universität-Erlangen-Nürnberg)

ASSESSMENT OF THE CARDENOLIDE CONTENTS IN SOME MEDICINAL PLANTS FROM MOLDOVA
EVALUAREA CONȚINUTULUI CARDENOLIDELOR ÎN UNELE PLANTE MEDICINALE DIN FLORA SPONTANĂ A R. MOLDOVA

Research carried out the potential of Moldavian plant. The various contents of cardenolide compounds in different medicinal plants were established.

Jităreanu Carmen Doina, Cristina Slabu, Alina Elena Marta, Elena Stavarache (University of Agricultural Sciences and Veterinary Medicine Iasi)

RESEARCHES REGARDING THE ECO - PHYSIOLOGICAL REACTION OF CERTAIN GRAPEVINE VARIETIES FROM THE VINEYARDS OF IAȘI, COTNARI AND TÂRGU BUJOR, IN THE VEGETATIVE REST PHASE

CERCETĂRI PRIVIND REACȚIA ECOFIZIOLOGICĂ A UNOR SOIURI DE VIȚĂ DE VIE DIN PODGORIILE IAȘI, COTNARI ȘI TÂRGU BUJOR, ÎN PERIOADA DE REPAUS VEGETATIV

The determinations made in this paper are part of a comprehensive study conducted on some vine varieties (White Feteasca, Royal Feteasca, Italian Riesling, Grey Băbească, Francusa, Cotnari Grasa, Romanian Tamaioasa), vines grown in three regions of Moldova: Iași, Cotnari and Târgu Bujor. The research conducted in the climatic conditions of November 2010 - February 2011 enabled us to highlight, in the case of the studied varieties, aspects of tissue aging (wood maturation) - premise of resistance to negative temperatures in winter and bud viability. The maturation degree of the wood can be assessed by determining the water content of the shoots, which varies depending on variety and the wood / bone ratio. The water content of the cells is correlated with the amount of osmotic pressure - another indicator for maturation and assessing of the frost resistance - led by the carbohydrate content, free ions or amino acids, especially proline.

Lisnic Stelian, Toma Simion, Coretscaia Iulia (Institute of Genetics and Plant Physiology of Academy of Sciences, Chisinau, Republic of Moldova)

INTERACTION BETWEEN CATION (Ni^{2+}) AND ANIONS SULFATE AND CLORINE (SO_4^{2-} AND Cl^-) IN THE EXPRESSION OF PEROXIDASE ACTIVITY OF SUGAR BEET DEPENDING ON THE DOSE OF NICKEL AND TEMPORARY WATER STRESS

INTERACȚIUNEA DINTRE CATIONUL NICHEL (Ni^{2+}) ȘI ANIONII SULFAT ȘI CLOR (SO_4^{2-} ȘI Cl^-) ÎN MANIFESTAREA ACTIVITĂȚII PEROXIDAZEI LA SFECLA DE ZAHĂR ÎN DEPENDENȚĂ DE DOZELE DE NICHEL ȘI STRESUL HIDRIC TEMPORAR

The excess of Ni in the environment causing significant alterations in plant growth and development, carbohydrate metabolism, increased activity of peroxidase (POD) in leaves, roots and apoplast of these organs. Lower POD activity in leaves and apoplast under Ni environmental pollution of SO_4^{2-} anion compared to Cl^- anion, especially in water culture conditions, demonstrates the interdependence of the Ni cation and anion that accompanies it on the cation in solution nutrition: increased toxicity in the form of chloride Ni compared to sulfate. POD activity in leaves, roots and apoplast of these organs is in the close interdependence of changes in plant metabolism and are crucial in the expression level of tolerance of plants to increasing doses of nickel in the environment. This interdependence is manifested both in optimal soil moisture conditions (70% WSC), and temporary water stress (35% WSC).

GENETICA ȘI AMELIORAREA PLANTELOR GENETICS AND PLANT BREEDING

Duca Maria, Midoni A., Port Angela (University Academy of Sciences of Moldova)

CYTOPLASMIC MALE STERILITY AND FERTILITY RESTORATION, VARIOUS MECHANISMS, THE SAME EFFECT

ANDROSTERILITATEA CITOPLASMATIĂ ȘI RESTAURAREA FERTILITĂȚII, DIVERSE MECANISME, ACELAȘI EFECT

This work focused a complex study of various modalities of nucleo – cytoplasmic interaction through the prism of CMS-Rf systems of plants. Were evaluated different suppression pathways of cytoplasmic male sterility phenotype. It was elaborated the hypotheticalal mechanism of CMS-Rf interaction in plants which highlights various mechanisms but the same effect.

Duca Maria¹, Port Angela¹, Levițchi A.¹, Șestacova Tatiana¹, Sineavskaia Marina², Aksionova Elena², Davidenko O.² (¹University Academy of Sciences of Moldova, ²Institute of Genetics and Cytology, National Academy of Sciences, Belarus)

CLUSTERING ANALYSIS OF SUNFLOWER GENOTYPES CULTIVATED IN MOLDOVA ON THE BASIS OF MICROSATELLITE SEQUENCES

ANALIZA CLUSTERIANĂ A GENOTIPURILOR DE FLOAREA-SOARELUI CULTIVATE ÎN REPUBLICA MOLDOVA, ÎN BAZA SECVENȚELOR MICROSATELITE

A number of 21 homo- and heterozygous sunflower genotypes were studied by applying 10 pairs of SSR primers. Data revealed a relatively high ability of distinction of genotypes based on SSR loci as shown by the general grouping of all analyzed genotypes as well as the separate clusters of parental and hybrid genotypes. Analysis of distribution of genotypes based on microsatellite sequences gives the possibility of usage of selected markers in fingerprinting and hybridization degree estimation.

Port Angela, Midoni A., Duca Maria (University Academy of Sciences of Moldova)

GENETIC DISTANCE EVALUATION, A USEFUL TOOL IN HETEROSIS EFFECT PREDICTION OF SUNFLOWER GENOTYPES
EVALUAREA DISTANȚEI GENETICE ÎN SCOPUL PRONOSTICĂRII EFECTULUI DE HETEROZIS LA DIVERSE GENOTIPURI DE FLOAREA-SOARELUI

The goal of the research was to assess the RAPD banding pattern among different cytoplasmic male sterile, fertility restorer lines and hybrid sunflower genotypes to be associated with restorer of fertility and heterotic traits. It is discussed the efficiency of parental selection based on genetic distance by RAPD polymorphisms clustering. Also, screening of three Operon primers, previously reported as polymorphic, revealed four amplification products (OPG10₅₁₀; OPG10₆₈₀; OPI16₄₅₀ and OPI16₅₅₀) specific only for studied Rf lines, suggesting on their potential use for indirect selection of fertility restorer trait.

CHIMIE-BIOCHIMIE
CHEMISTRY- BIOCHEMISTRY

Bejan Carmen, Vișoiu Emilia (National Institute of Research and Development for Biotechnology in Horticulture Ștefănești – Argeș)

STIMULATION OF STILBENE POLYPHENOL BIOSYNTHESIS, UNDER *IN VIVO* CONTROLLED CONDITIONS, IN SOME GRAPE VARIETIES FOR RED AND WHITE QUALITY WINE
STIMULAREA BIOSINTEZEI POLIFENOLILOR STILBENICI ÎN CONDIȚII CONTROLATE *IN VIVO* LA UNELE SOIURI DE STRUGURI PENTRU VINURI ROSII SI ALBE DE CALITATE

It is known that, in response to stress (physical or chemical elicitors, a parasitic infection), the vine can synthesize natural molecules, generally called phytoalexins, enabling it to adapt to this stress. Stilbene polyphenols are the major constituents of these molecules, with the resveratrol (trans-3, 5, 4-trihydroxystilbene), as the major one. Among the chemical agents able to induce the synthesis of resveratrol in the grape-vine plants they come in contact with, the aluminium chloride is the most effective. The undertaken study aimed to determine the active usable doses of AlCl₃, able to stimulate the biosynthesis of polyphenols and implicitly of resveratrol in the vine plants, under in vivo controlled conditions. Several Vitis vinifera L. genotypes for obtaining red and white quality wines were selected for this purpose. Four different experiments, with different doses of AlCl₃ aqueous solution, were initiated in order to determine the optimal concentration of aluminium chloride solution, which would lead to the accumulation of large amounts of resveratrol in the vine plants.

Ciornea Elena, Tutu Elena („Al.I.Cuza” University of Iași)

STUDIES CONCERNING THE INFLUENCE OF SOME MINERAL COMPOUNDS ON THE DYNAMICS OF SOME OXIDOREDUCTASES ACTIVITY AT *MONILINIA LAXA* (ADERH.& RUHL.) HONEY PARASITE ON PLUM TREES
STUDII PRIVIND INFLUENȚA UNOR COMPUȘI MINERALI ASUPRA DINAMICII UNOR OXIDOREDUCTAZE LA *MONILINIA LAXA* (ADERH.& RUHL.) HONEY PARAZITĂ PE PRUN

The brown rot made by Monilinia laxa (Aderh.& Ruhl.) Honey is considered to be one of the most important diseases that affects the species of the genus Prunus, being able to generate significant damages by destroying the flowers and fruits and, eventually, the entire tree. Known as efficient, nontoxic and accessible instruments against for fungal diseases control, the inorganic salts are unanimous accepted as alternative method for biological control techniques. This study, orientated in two directions aimed, on one hand, to evaluate the fungi response to oxidative stress generated by the action of inorganic compounds, knowing the concept that enzymes are involved in pathogenically manifestation induced by biotic agents in microorganisms and, on the other hand, the estimation of antifungal effect „in vitro” of the mineral compounds. We used H₃BO₃, CuSO₄ x 5H₂O, MnCl₂ x 4H₂O, NaMoO₄ x 2H₂O, FeCl₃ x 6H₂O, ZnSO₄ x 7H₂O and a mixture of them and also, a control sample. The experimental determinations were made at two time intervals and the results showed the clear fungistatic effect of copper and zinc salts, and of the mix of mineral substances, but also the semnificative differences in the activity of catalase and peroxidase

Ciornea Elena, Tutu Elena („Al.I.Cuza” University of Iași)

PRELIMINARY STUDIES CONCERNING THE AMINOACIDS INFLUENCE ON SOME DEHYDROGENASES AT *MONILINIA LAXA* (ADERH. & RUHL.) HONEY PARASITE ON PLUM TREE

STUDII PRELIMINARE PRIVIND INFLUENȚA UNOR AMINOACIZI ASUPRA UNOR DEHIDROGENAZE LA SPECIA *MONILINIA LAXA* (ADERH.& RUHL.) HONEY PARAZITĂ PE PRUN

*In the process of nutrition there is interdependence between microorganisms and the environment. In this unity, the environment has an active role and the microorganisms adapt to it's conditions, acting and transforming it in an dynamic manner. This interrelation permitted that, in time, some specific adaptations of the microorganisms for difficult conditions could be made. For a medium to be used as nutrition source in the microbial cell, on genetic and catabolic pathways, the cell metabolism is adjusted and, this allows the adaptation to the conditions of the environment. This study aimed the evaluation of the activity of some dehydrogenases from the Krebs cycle, as the principal energy supplier that assures the fabrication of mediators and products so that they may maintain the equilibrium between cells and to avoid the un economic supraproduction of metabolites and, respective, of glucoso-6-phosphate dehydrogenase, ubiquitous enzyme that catalysis the conversion of glucoso-6-phosphate in glucono-lacton-6-phosphate with NADP⁺. The experiments were made using cultures of *Monilinia laxa* (Aderh.&Ruhl.) Honey on mediums supplemented with different types of aminoacids. The enzymes activity was determinated using the spectrophotometric method of Sîsoev and Krasna (modified by Artenie) and some semnificative differences were recorded, variations influenced by the age of the culture and the aminoacid type used in working samples, compared with the control sample.*

Glijin Aliona, Mița Elena, Acciu Adriana, Calmîș Ana, Duca Maria (University Academy of Sciences of Moldova)
PHENYLALANINE AMMONIA-LYASE IN NORMAL AND BIOTIC STRESS CONDITIONS
ACTIVITATEA FENILALANIN AMONIA-LIAZEI ÎN NORMĂ ȘI ÎN CONDIȚII DE STRES BIOTIC

*Phenylalanine ammonia-lyase (PAL) is a key enzyme that converts L-phenylalanine to trans-cinnamic acid, a precursor of various metabolites produced in response to environmental stress, including biotic factors. Artificial infection of different sunflower genotypes with *Orobancha cumana* Wallr. collected from the South part of Republic of Moldova showed significant modification on PAL activity. So *O. cumana* induced a significant increase of PAL activity in the root system at all sunflower genotypes resistant and tolerant to the broomrape (race E), from 20 - 30 days until the final investigated ontogenetic phase (60 days), which confirms the role of PAL in the expression of biochemical mechanisms of host-plant resistance to broomrape attack.*

Prisăcaru Cornelia (University of Agricultural Sciences and Veterinary Medicine Iași)
THE DIMINUTION OF STERYGMATOCYSTIN TOXICITY BY THE ANTIRADICALIC ACTION OF SOME VEGETAL FLAVONOID CONTAINING PRODUCTS
DIMINUAREA TOXICITĂȚII MICOTOXINELOR DIFURANICE PRIN ACȚIUNEA ANTIRADICALARĂ A UNOR PRODUSE VEGETALE CONȚINÂND FLAVONOIDE

*Sterigmatocystin is a mycotoxin derived from difuran, structurally related to aflatoxins, which withdraws the attention of the human and veterinary pathology by having a high incidence in vegetal aliments from the temperate-continental climate. The present paper is part of a more ample experiment which deals with the reduction of the toxicity of this mycotoxin that has been included in first grade carcinogenic category. Taking into consideration the hypothesis that sterigmatocystin acts as a free radical in the form of epoxy-sterigmatocystin, the experiment presented in this paper stresses upon the use of some pharmaceutical preparates of *Hipophæ rhamnoides*. The experiment included four groups of five white Wistar rats each. The first group was the reference group, while the second one experimentally reproduced the chronic sterigmatocystin intoxication. Besides the sterigmatocystin dose, the animals from the third group were given ascorbic acid, a nonenzymatic antioxidant. The third group received *Hipophæ fructus*, along with the sterigmatocystin dose. In the end, the animals were sacrificed and the blood samples were analysed for biochemical investigations with relevance upon the hepatic function and integrity.*

Prisăcaru Cornelia¹, Prisăcaru Anca Irina², Rotaru Liliana¹ (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²University of Medicine and Pharmacy "Gr. T. Popa" Iași)
EVALUATION OF THE ANTITOXIC POTENTIAL OF SOME QUERCETOL CONTAINING VEGETAL PRODUCTS
TESTAREA ACȚIUNII ANTITOXICE A UNOR PRODUSE VEGETALE BOGATE ÎN CVERCETOL

*Acrylamide, chemical compound with a structure containing two unsaturated centers, represents the result of thermally processed foods rich in amino acids and reducing sugars. By the means if glycidamide, its epoxidic metabolite, acrylamide exerts toxic effects as neurotoxicity, carcinogenity, embriotoxicity, and reproductive toxicity. The present experiment aims to establish a way of diminishing the toxic effects of acrylamide by the means of a flavone derivative. Quercetol, a flavonol remarkable by its antiradicalic effect, is found in high concentrations in fruits and vegetables as cabbage, parsley, onion, soy, blueberries. This flavone derivative exerts its antiradicalic potential in sinergy with glutathione, ascorbic acid (vitamin C) and vitamin E, with which it forms efficient redox systems. The experiment related in this paper analyses the antioxidative potential of quercetol from a phytopreparation obtained from the fruits of *Vaccinium myrtillus*. The evaluation of the antiradicalic activity of quercetol was established by the means of biochemical parameters that give indications upon the oxidative stress. The results are positive, confirming the antioxidant potential of the phytopreparation obtained from *Vaccinium myrtillus*.*

Tanase Corneliu, Hainal Anca Roxana, Ignat Ioana, Volf Irina, Popa Valentin ("Gheorghe Asachi" Technical University Iași)

DEVELOPMENT OF *RHODOTORULA* YEAST STRAIN UNDER THE INFLUENCE OF POLYPHENOLIC COMPOUNDS IN THE PRESENCE OF COPPER IONS

DEZVOLTAREA TULPINEI DE DROJDIE *RHODOTORULA* SUB INFLUENȚA COMPUȘILOR POLIFENOLICI ȘI A IONILOR DE CUPRU

The paper presents the results of a study on the influence of polyphenolic compounds in combination with free metal ions on the growth, development and biosynthesis of specific pigments by Rhodotorula spp. yeast strain. For this purpose, the aqueous extract obtained from Vitis vinifera (Merlot) was characterized from the point of view of the total and individual phenolic content. We added in the aqueous extract different concentrations of copper ions, the solution obtained was used for preparation of culture medium for Rhodotorula yeast in a fermentative process. Under these circumstances, we monitored the effect of polyphenolic aqueous extracts on the amount of wet biomass and the biosynthesis of carotenoid pigments. Thus, it was noticed that the same metal concentration in the extract might have a stimulating effect on the amount of wet biomass while an inhibitory effect was registered on the carotenoid pigments biosynthesis.

Trofin Alina¹, Oniscu Corneliu² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²"Gheorghe Asachi" Technical University Iași)

THE PRODUCTION INCREASE FOR TOMATOES IN FIELD CROPS UNDER THE INFLUENCE OF TREATMENTS WITH GROWTH STIMULATORS

CREȘTEREA PRODUCȚIEI LA TOMATE ÎN CULTURĂ DE CÂMP, SUB INFLUENȚA TRATAMENTELOR CU STIMULATORI DE CREȘTERE

The work is part of a three-year study on the influence of treatments with growth promoters on tomatoes in various stages of development. This part presents data on the effect of treatments applied on tomato production in field crops. We used two growth promoters, conditioned as potassium and dimethylamine salts, in two dilutions, with and without added solution of zinc acetate. Three treatments were applied and followed the general development and production - average yield per plant (g) and average production in tones per hectare. Treatments applied to tomatoes in field culture led to higher output compared to control sprinkled with distilled water and compared with the variant treated with zinc acetate solution 5 ppm. The variant with the highest production this year was the one treated with the stimulator BCO 4 K - 20 ppm followed by BCO 4 K + -20 ppm Zn, with production increases of 41.6 respectively 38.9 t / ha.

Tucaliuc Roxana¹, Cotea V. Valeriu¹, Drochioiu Gabi², Mangalagiu Ionel² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²"Al. I. Cuza" University of Iași)

SYNTHESIS AND THE EFFECT OF SOME PYRIDAZINE DERIVATIVES IN GERMINATION AND SEEDLING GROWTH OF WHEAT

SINTEZA ȘI EFECTUL DERIVAȚILOR PIRIDAZINICI ASUPRA GERMINAȚIEI ȘI CREȘTERII PLANTELOR DE GRÂU

1,3-Dipolar cycloaddition is one the most important methods of constructing the diazinic derivatives. Several studies to test the biologic effect of pyridazine derivatives have been done using simple experiments of wheat germination/ develop of the wheat plantlets. The results showed that the influence for tested compounds in germination percentage, shoot and root length, fresh weight varied as a function of structure of each investigated compound.

Tutu Elena, Ciornea Elena, Cojocaru Sabina Ioana („Al.I.Cuza" University of Iași)

STUDIES CONCERNING THE INFLUENCE OF TRACE ELEMENTS ON THE DYNAMICS OF SOME BIOCHEMISTRY MARKERS ACTIVITY OF OXIDATIVE STRESS AT *MONILINIA LAXA* (ADERH. & RUHL.) HONEY PARASITE ON PLUM TREES

STUDII PRIVIND INFLUENȚA OLIGOELEMENTELOR ASUPRA DINAMICII ACTIVITĂȚII UNOR MARKERI BIOCHIMICI AI STRESULUI OXIDATIV LA *MONILINIA LAXA* (ADERH. & RUHL.) HONEY PARAZITĂ PE PRUN

Because some microorganisms like fungi owe their pathogenicity, aggressivity and virulence to their rich enzyme equipment, we have to monitor their biological activity by analyzing some biochemical markers like oxidoreductases. This paper synthesizes some experimental results concerning the influence that some oligoelements like Bo, Cu, Mn, Mo, Zn, Fe and a mixture between them, on the time activity of catalase and peroxidase at Monilinia laxa (Aderh. & Ruhl.) Honey parasite on different types of plum tree species. „In vitro” culture of the fungus was made on Leonian medium and the experimental determinations involved some samples from the fungus mycelium and the liquid used for the culture, at intervals of 7, respective 14 days from the inoculation. The evaluation of catalase activity was made using the method of Sinha and the peroxidase activity was determined by Moller's method with an o-dianisidine. The experimental data analysis indicated that the variation of the two oxidoreductases is correlated directly with the age of the culture and that there are some substantial differences between the types of oligoelements used in the culture medium.

Tutu Elena, Ciornea Elena („Al.I.Cuza” University of Iași)

STUDIES CONCERNING THE INFLUENCE OF SOME OLIGOELEMENTS ON THE ACTIVITY OF KREBS CYCLE DEHYDROGENASES AT MONILINIA LAXA (ADERH.& RUHL.) HONEY PARASITE ON PLUM TREES

CERCETĂRI PRIVIND INFLUENȚA UNOR OLIGOELEMENTE ASUPRA ACTIVITĂȚII DEHIDROGENAZELOR CICLULUI KREBS LA SPECIA MONILINIA LAXA (ADERH.& RUHL.) HONEY PARAZITĂ PE PRUN

Present in microorganisms in small quantities, trace elements have the ability to interfere with some important biological functions, including enzymatic activities on some important metabolic pathways. This study systematizes the experimental results concerning the „in vitro” activity modulation of enzymes that defines each step of the tricarboxilic acids cycle by microelements like Bo, Cu, Mn, Mo, Zn, Fe, or their mixture at Monilinia laxa (Aderh.&Ruhl.) Honey parasite on different types of plum tree species. The researches were made using the fungus mycelium sampled at 7 and 14 days from the inoculation on Leonian medium. The activity of the dehydrogenases complex was determined by spectrofotometry using the Sisoiev and Krasna method's (modified by Artenie). The studies showed the main differences in the enzymes activity dynamics related to the type of oligoelement added to the culture.

1.2. PEDAGOGIE ȘI METODICĂ, LIMBI STRĂINE, ȘTIINȚE ECONOMICE

1.2. PEDAGOGY AND METHODOLOGY, FOREIGN LANGUAGES, ECONOMIC SCIENCES

Moderatori:

Conf. univ. dr. **Mihai STANCIU**
Conf. univ. dr. **Stejărel BREZULEANU**
Conf. univ. dr. **Gabriela PETRUȚA**

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Drd. **Ștefan VIZITEU**
Drd. **Adriana SPÎNACHE**



LUCRĂRI PREZENTATE ORAL

ORAL PRESENTATIONS

PEDAGOGIE ȘI METODICĂ

PEDAGOGY AND METHODOLOGY

Colibaba Anca Cristina^{1,2}, Vrinceanu Cezar², Colibaba Stefan^{2,3}, Colibaba Cintia⁴ (¹University of Medicine and Pharmacy "Gr. T. Popa" Iași, ²EuroEd Foundation Iași, ³"Al. I. Cuza" University Iași, ⁴University of Agricultural Sciences and Veterinary Medicine Iași)

VIRTUAL SUPPORT FOR REAL LIFE
LET'S GO, APLANET, ISPY PROJECTS

The three projects presented within this article develop on the idea of user virtual support. It is highly recommended that both students and teachers are presented with such resources which enhance efficiency, relevance and achievement. However, despite the vast quantity of online materials, users often find themselves at a loss: there are too many, too varied materials and too little time for selection. Directly addressing this situation, the three projects focus on online material selection, development of tutor guidance, online courses for direct beneficiaries with user support and international collaboration opportunities. Before actually being supportive, virtual support needs to be clearly structured and labeled so that target beneficiaries can easily access relevant material directly. Although direct transfer to real life use necessarily includes adaptation of the material, the products of the above mentioned projects will facilitate selection of online material and will thus support use of relevant material appropriate the context of implementation.

Durbaca Nicoleta¹, Stratu Anișoara² (¹"Petru Rareș" School Group, Botoșani, ²"Al. I. Cuza" University of Iași)
CURRICULUM TO SCHOOL DECISION: TRAINING METHODS ENVIRONMENTAL EDUCATION AT SECONDARY LEVEL.
CURRICULUM-UL LA DECIZIA ȘCOLII – MODALITATE DE FORMARE A EDUCAȚIEI ECOLOGICE LA NIVEL LICEAL

A real opportunity to achieve environmental education is the curriculum at the school decision. Starting from high school profile (Natural resources and environmental protection) and considering the importance of the flowers and of the decorative plants in human life, environment and economy have proposed a draft curriculum for an optional course titled "Decorative plants". The optional course aims to study various aspects on ornamental plants: history, classification, morphological characterization, environmental requirements, propagation, crop establishment, use and capitalization.

Durbaca Nicoleta¹, Stratu Anișoara² (¹"Petru Rareș" School Group, Botoșani, ²"Al. I. Cuza" University of Iași)
EXTRACURRICULAR ACTIVITIES: TRAINING METHODS ENVIRONMENTAL EDUCATION AT SECONDARY LEVEL
ACTIVITĂȚILE EXTRAȘCOLARE - MODALITĂȚI DE FORMARE A EDUCAȚIEI ECOLOGICE LA NIVEL LICEAL

The extracurricular activities can be carried by pupils guided by teachers outside the classroom, in various forms: excursions, hiking, cleaning actions in some areas, competitions, etc. Some of these activities can be performed to mark certain days dedicated from the environmental calendar. Based on these considerations and taking into account the profile of high school we have designed a set of activities to mark several events from the environmental calendar. Three of these activities are the subject of this paper: "Black Sea needs us", "Botoșani - City of my childhood" and "The Wetlands and their importance". All these activities aim to stimulate awareness and motivation for environmental protection, capacity for observation, exploration and understanding of the surrounding reality, developing a positive attitude towards the environment and environmentally appropriate behavior.

Petrescu Lucia¹, Colibaba Anca Cristina², Colibaba Stefan¹, Colibaba Cintia³ (¹EuroEd Foundation, „Al. I. Cuza” University of Iași; ²EuroEd Foundation, University of Medicine and Pharmacy “Gr. T. Popa” Iași; ³University of Agricultural Sciences and Veterinary Medicine Iași)

INTERGENERATIONAL LEARNING MYSTORY, BILFAM & ENIL
INVATARE INTERGENERATIONALA – MYSTORY, BILFAM & ENIL

Because social dynamics have lately been restructured we no longer have the time and the opportunities we once had to transfer the experience of one generation up to another. Establishing collaboration patterns among various age groups is not only a form of socialisation. Beyond that, intergenerational learning is a very practical way of developing on transferred information and thus equip beneficiaries with new skills and abilities. MyStory project (511641-LLP-1-2010-1-RO-KA3-KA3MP) plans to collect a series of life stories engaging seniors and young people who are very good computer operators. Materials produced will be freely available online. BILFAM(511515-LLP-1-2010-1-IT-KA2-KA2MP) is a transfer of innovation project involving parents in children's language teaching and in reflection activities on the margin of this topic. Online support will also be available. ENIL (510890-LLP-1-2010-1-FR-GRUNDTVIGGNW) focuses on involving parents and grandparents in volunteering activities in schools to present children with direct learning experiences within their families.

Petrescu Lucia¹, Colibaba Anca Cristina², Colibaba Stefan¹, Colibaba Cintia³ (¹EuroEd Foundation, „Al. I. Cuza” University of Iași; ²EuroEd Foundation, University of Medicine and Pharmacy “Gr. T. Popa” Iași; ³University of Agricultural Sciences and Veterinary Medicine Iași)

SOCIAL INTEGRATION AND LSP INTEGRA & TOOL TIPLS PROJECTS
SOCIAL INTEGRATION AND LSP – INTEGRA & TOOL TIPLS

It is well known that language learning is best contextualised by cultural information. Teaching and learning languages in school has now long focused on integrating these two components to create a real life-like study background. Globalisation and migration of workforces have lately transferred this into real social inclusion needs: The aim of the Integra project(510258-LLP-1-2010-1-LTGRUNDTVIG-GMP) is to work together with social partners such as migrant communities and financial institutes to create a Europe wide network of relevant institutes in order to reach migrants in partner countries to improve their integration into local society by providing them with opportunities to gain language skills on basic financial matters. The aim of the Tool TIPLS project(LLP-LdV-TOI-2009-LT-0042) is to develop the tool to improve transparency of professional English language (as lingua franca) skills in the selected target sectors of the Hospitality industry. This will ensure future relevant levels of foreign language competences and their evaluation to people employed or seeking employment in this area.

Petruța Gabriela-Paula (University of Pitești)

OPTIMIZING THE FORMATION OF FUTURE SCIENCE TEACHERS FOR ACTIVATING THE STUDENTS DURING LESSONS
OPTIMIZAREA FORMĂRII VIITORILOR PROFESORI DE ȘTIINȚE ÎN VEDEREA ACTIVIZĂRII ELEVILOR ÎN LECȚII

In the modern school, an important role of the teacher consists in the organization of didactical activity in such way to determine the students to participate actively to their own formation, as subjects of learning. By organizing diversified learning situations with respect to the didactical methodology used, and differentiated in accordance with the different learning styles of the students, the teacher creates conditions needed for the activation of students within the lesson. Taking into consideration the importance of formation of future science teachers, in accordance with the exigencies of present education, we have carried out an empirical research, based on the questionnaire and interview methods. We consider that the formation of future science teachers for activating the students during lessons can be optimized by stimulating the practicum students' creativity, and by encouraging the cooperation among the practicum students who are using a diversified methodological register within the lesson and the other students.

Petruța Gabriela-Paula (University of Pitești)

POSSIBILITIES OF STIMULATING THE STUDENTS' CREATIVITY BY THE STUDY OF BIOLOGY
POSSIBILITĂȚI DE STIMULARE A CREATIVITĂȚII ELEVILOR PRIN STUDIUL BIOLOGIEI

Human creativity stands at the base of all the progress made by the humankind during the time, in all fields of knowledge and social life. In school, the creativity potential of students can be positively or negatively influenced, depending on the methods used by the teacher within the lesson. Avoidance of the excessive use of methods centered on stimulation of memory and opting instead for the use of some active-participative and interactive methods within the biology lessons, elaboration of some products (rebuses, materials with interdisciplinary character, etc.) by the independent work in class or at home, as well as the organization of out of school activities aiming at realization of some artistic and literary creations, of some student's exhibitions on various themes, realization of posters, collages, etc., represent possibilities of stimulating the students' creativity by the study of biology in gymnasium and high school. Our paper is aiming at presenting a full range of such possibilities.

Stanciu Mihai (University of Agricultural Sciences and Veterinary Medicine Iași)

EXAMPLES OF GOOD PRACTICES OF A NATIONAL TRAINER IN THE FIELD OF IN-SERVICE TRAINING OF TEACHERS FROM PRE-UNIVERSITY LEVEL
EXEMPLE DE BUNE PRACTICI ALE UNUI FORMATOR NAȚIONAL ÎN DOMENIUL FORMĂRII CONTINUE A CADRELOR DIDACTICE DIN ÎNVĂȚĂMÂNTUL PREUNIVERSITAR

This communication presents the author's living experiences as a national trainer. There are presented not only some examples as good practices in the field of in-service training, but also some difficulties encountered within the in-service training programs. I presented examples of curricular design focused on the competences, of strategies for in-service training, and examples of the evaluation methodology as well. The in-service training process of teachers from pre-university level should be modernized according to the development standards of a postmodern society.

ȘTIINȚE ECONOMICE **ECONOMIC SCIENCES**

Brezuleanu Stejărel, Brezuleanu Carmen Olguța, Ungureanu George (University of Agricultural Sciences and Veterinary Medicine Iași)

ANALYSIS OF PERFORMANCE IN BUSINESS OF COMPANIES IN WINE MAKING DOMAIN BY THE "BALANCED SCORECARD" MODEL
ANALIZA PERFORMANȚEI ÎN AFACERI LA FIRMELE DIN DOMENIUL VITI-VINICOL PRIN MODELUL „BALANCED SCORECARD”

In search of success, performance management uses a variety of models, techniques and methods, some taken from other systems and improved and others of their own, more focused on strategy and differentiating elements that provide a competitive advantage. The Balanced Scorecard model applied to the SC Cotnari proposes a series of objectives grouped into four categories: financial, customers, internal processes and development / potential. All collected data, all measurements and tests made relate to each of these four perspectives. After the analysis, the characteristic of SC Cotnari SA is represented by the structural stability of income, by concentrating a large part of income in exploitation. This competitive advantage of the company has led to the reduction of sales uncertainty, currently holding one of the highest shares on the market.

Diaconu Mihaela, Lache Cătălina (“Petre Andrei” University of Iași)

THE VALUE OF WAITING – A FUNDAMENTAL OF INVESTMENT DECISION
VALOAREA DE AȘTEPTARE – FUNDAMENT AL DECIZIEI DE INVESTIȚIE

This paper focuses on essential aspects of the impact of uncertainty and irreversibility of capital expenditure on investment decisions in physical assets, drawing on the substantive aspects of research in this field. Using the neoclassical approach, we reflect theoretically the value of waiting involved in investment decision making at the enterprise level, being a dependent variable in implementation of investments at different points of time. Although empirical studies at the aggregate level are not very numerous, we highlight the causes that may lead to non-convergent results on the impact of uncertainty and irreversibility on investment decisions of firms.

Dospinescu Nicoleta (“Al. I. Cuza” University of Iași)

THE EFFICIENCY OF THE INFORMATION DISSEMINATION IN AGRICULTURE AREA THROUGH THE PUBLIC RELATIONS (PR) EVENTS
EFICIENȚA MEDIATIZĂRII INFORMAȚIILOR ÎN DOMENIUL AGRICOL PRIN EVENIMENTE PR.

In a changing society where information technologies plays an important role in transmitting news, most times about virtual, events “live” complement a specific type of public access. Usually it is the public who needs a concrete impact, direct meetings. It is for those who invest in agricultural machinery, plant or animal biological material or those who wish to acquire new technologies. This paper aims to highlight the importance and effect of direct events such as “Indagra” to coverage of useful information in the shortest time among those involved that need improvement and efficiency. The purpose of this study is to demonstrate if the events of public relations (PR) may contribute to the transmission of news, if they are effective through the direct impact to the specific audience. The results show that agricultural producers and investors are more receptive to such forms of promotion, implement more easier the technological news because they can test and learn directly about them, are credible.

Dumitrașcu Roxana Arabela, Dumitrașcu Vadim („Petre Andrei” University of Iași)

BUSINESS MODEL DIMENSIONS AND THEIR IMPACT ON COMPANY
DIMENSIUNILE MODELULUI DE AFACERE ȘI IMPACTUL LOR ASUPRA FIRMEI

The business model explains how to create economic value. Any business model indicated key resources and core competences. Company fails to obtain necessary resources and powers only if it has enough appeal and credibility (reputation). The business success is reflected in increase the market value of the company. We propose a modality of analysis of the business model based on the identification of the distinctive competencies which, in our conception, may facilitate the optimization of the processes of creation of the economic value.

Florescu Doina Geanina (Bioterra University Bucharest)

EFFECT OF CURRENT FINANCIAL CRISIS THE WORLD ECONOMY COUNTRIES AND THE EUROPEAN UNION
EFECTELE ACTUALEI CRIZE FINANCIARE ASUPRA ECONOMIEI MONDIALE ȘI A ȚĂRILOR UNIUNII EUROPENE

2007-2009 world economic crisis began in July 2007, at the loss of investor confidence in U.S. mortgage securitization has led to a liquidity crisis that led to a substantial injection of capital in financial markets from the U.S. Federal Reserve, Bank of England and the European Central Bank. TED spread index (describing the perceived credit risk in the general) made a jump sharply in July 2007, oscillated for a year and then rose again in September 2008, reaching a record 4.65% on October 10, 2008. The crisis worsened in 2008, as world stock markets have collapsed or have entered a period of acute instability, when a large number of banks, lenders and insurance companies went bankrupt during the weeks that followed.

Iuroaea Gheorghe¹, Aurel Chiran² (¹A.P.I.A. Galați, ²University of Agricultural Sciences and Veterinary Medicine Iași)

MECHANISMS AND INSTRUMENTS OF FINANCIAL SUPPORT FOR THE AGRICULTURE OF GALAȚI COUNTY

MECANISME ȘI INSTRUMENTE DE SPRIJIN FINANCIAR ÎN AGRICULTURA JUDEȚULUI GALAȚI

The paper aims to provide an input in analyzing the economic efficiency of farms and the effects of payment schemes on their performance. The study also aims to analyze the changes that have occurred in the European agricultural space by implementing the payment system, knowing that the new Member States which apply the single area payment scheme (including Romania), have the possibility of applying this simplified system beyond 2013. The financial assistance granted to farmers in the form of the single payment scheme following both the historical model and the regionalized one is based, more or less, on a past reference period (currently set between 2000 and 2002). Very important for the agricultural development of Galați County is also the economic-financial support to farmers, which will be achieved through mechanisms and instruments, in accordance with the law. So far, the economic and financial support for crops production has been granted to certified seeds, fertilizers, pesticides, according to OUG. 65/2006. Because the current measures of the agricultural development policy involve Romania directly the authors will present a summary of the key reforms proposed and the options that Romania has in applying these agricultural policies.

Onea Angelica-Nicoleta ("Al. I. Cuza" University of Iași)

COSMOPOLITAN MANAGER – REALITY OR UTOPIA?

MANAGERUL COSMOPOLIT – REALITATE SAU UTOPIE?

Being caught between his own cultural dominants and the need to achieve competencies for the accommodation in a multicultural environment, the Romanian manager may be confused. How can he overcome his own cultural predispositions, which intercultural competencies should acquire in order to handle himself in the new economic context which increasingly involves inter- and multi-culturality and which would be the ways to form it are questions that we intend to answer in this article, starting from the analysis of the cosmopolitan manager model proposed by Moran and Harris and taking into account, in the same time, on the elements of cultural specificity that may constitute in imprints or barriers against change.

Onea Angelica-Nicoleta ("Al. I. Cuza" University of Iași)

EDUCATIONAL MANAGEMENT – ADAPTATION TO CULTURAL SPECIFICITY

MANAGEMENT EDUCAȚIONAL – ADAPTAREA LA SPECIFICITATEA CULTURALĂ

We live in constant transition, both economically and socially. In management we are guided by criteria more or less universalist, often copied/borrowed without any effort to cultural appropriateness. This also happens in the educational plan because the programs and methodologies, but also the effective work with human resource, ignore the fact that people from certain cultures have a specific potential, that must be valorised. Some ideas related to this national or regional specificity were raised in a research developed in order to analyse the regional cultural differences, on equivalent samples of students. They may help the integration in class, taking into account the cultural values, in order to increase performance in both sides: teacher and student.

Tătărușanu Maria ("Al. I. Cuza" University of Iași)

STUDENT'S BEHAVIOUR AS CONSUMERS

COMPORTAMENTUL DE CONSUM AL STUDENTILOR

The paper presents the mean aspects concerning the student's behaviour when they buy products and services. In this order, we have analyzed the all products and services bought by the student's from the Faculty of Economics and Business Administration – specialization Marketing, between 1st and 31st of November 2010. The main objective was to identify the products and services bought by the respondents, the place and the day of buying, types of shops and the distance and the place of the products on the shelf into the shop.



LUCRĂRI PREZENTATE POSTER POSTER PRESENTATIONS

ȘTIINȚE ECONOMICE ECONOMIC SCIENCES

Brezuleanu Stejărel, Brezuleanu Carmen Olguța, Ciurea Ion Valeriu, Mihalache Roxana (University of Agricultural Sciences and Veterinary Medicine Iași)

MANAGERIAL SKILLS NECESSARY FOR MANAGERS OF AGRICULTURAL FARMS FROM VASLUI COUNTY IN ORDER TO ABSORB EUROPEAN FUNDS
COMPETENȚE MANAGERIALE NECESARE MANAGERILOR EXPLOATAȚIILOR AGRICOLE DIN JUDEȚUL VASLUI PENTRU ABSORBȚIA FONDURILOR EUROPENE

The farm managers must take into account the future development of their business the impact of changes in the environment, the complex issues and situations circumstantial that tend to appear. An important issue related to the development of rural development projects is the professional competence of economic and social agents who initiate, develop and implement such projects, the existence of an effective infrastructure for consultancy of such projects. In order to produce efficiently and competitively, the agricultural farms, irrespective of their type, must enroll in the tendencies that currently exist in the global agriculture, in order to promote qualitative factors among which we mention developing knowledge, managerial training, technical upgrade, application of modern technology, computerization, etc.. Consultancy will help to better inform the farmers for farm modernizing, qualitative reorientation of production, farm diversification, application of production practices compatible with landscape conservation and promotion, environmental protection, hygiene standards and animal welfare and to acquire management skills necessary to administer economically viable farms.

Dumitrașcu Roxana Arabela, Dumitrașcu Vadim („Petre Andrei“ University of Iași)

BUSINESS MODELS BASED ON INTELLECTUAL CAPITAL
MODELE DE AFACERE FONDATE PE CAPITALUL INTELECTUAL

In knowledge based economy acquire an increasing importance of business models focused on intellectual capital. To explain the influence of intellectual capital on business competitiveness, we agreed to divide in following three categories: conceptual capital, relational capital and functional capital. A business model based on intellectual capital requires intensive use of one of these categories to create economic value. Identify, in this way, three types of generic business model: „Knowledge master“, „Network orchestrator“ and „Execution master“.

Iuroaea Gheorghe (A.P.I.A. Galați, University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES CONCERNING RESULTS OF PRODUCTION AND ECONOMIC-FINANCIAL IN THE AGRICULTURE OF GALAȚI COUNTY
STUDII PRIVIND REZULTATELE DE PRODUCȚIE ȘI ECONOMICO-FINANCIARE ALE AGRICULTURII JUDEȚULUI GALAȚI

The process of integration into the European Union allows access to various european funds, targeted to raise the living standards of the rural population in general, but especially for farmers. This process marked a new stage in our country's agriculture. Thus, Romania has to adapt to the European model of agriculture that is based on competitiveness, market orientation, environmental protection, integration of agriculture with forestry and environment etc. In the economy of Galati county, agriculture occupies an important place due to the wide extent of arable agricultural land in general and in particular due to livestock and poultry, the land improvement, the supply with tractors and agricultural machinery. In Galati county agriculture, due to the fact that the arable land represents as much as 82.5% of all agricultural land, the most important crops are oilseed plants and grains. In animal husbandry, the largest flocks we encounter are cattle, pigs, sheep and poultry. An increase of economic efficiency in crop and animal production can be achieved by: obtaining high average yields, improving product quality, developing new storage spaces and ensuring competitive selling prices, promoting new investments in crop and livestock through accessing grants, bank loans and other sources. Attracting funding is an opportunity for farmers to develop and modernize their agricultural activities. Also, competitiveness in agriculture can be achieved through developing multifunctional agricultural holdings oriented towards the competitive market through an association and cooperation of farmers to access grants directed at upgrading and modernizing production and processing the raw materials.

2nd SECTION
HORTICULTURE TEHNOLOGIES

2.1. LEGUMICULTURĂ, POMICULTURĂ, FLORICULTURĂ, ARBORICULTURĂ ORNAMENTALĂ, CONSTRUCȚII HORTICOLE, HORTICULTURĂ ECOLOGICĂ

2.1. VEGETABLE GROWING, FRUIT GROWING, FLORICULTURE, ORNAMENTAL ARBORICULTURE, HORTICULTURAL CONSTRUCTIONS, ECOLOGICAL HORTICULTURE

Moderatori:

Prof. univ. dr. **Dorel HOZA**
Prof. univ. dr. **Gică GRĂDINARIU**
Prof. univ. dr. **Lucia DRAGHIA**
Prof. univ. dr. **Neculai MUNTEANU**
C.P. I dr. ing. **Silvia AMBĂRUȘ**

Secretari:

Șef lucr. dr. **Teodor STAN**
Drd. **Oana CÎRSTEA**
Drd. **Laurențiu ȚIBULCĂ**



LUCRĂRI PREZENTATE ORAL ORAL PRESENTATIONS

LEGUMICULTURĂ VEGETABLE GROWING

Aștefanei Dan¹, Bulgariu Dumitru^{1,4}, Bulgariu Laura², Munteanu Neculai³ (¹„Al.I.Cuza” University of Iași, ²„Gheorghe Asachi” Technical University Iași, ³University of Agricultural Sciences and Veterinary Medicine Iași, ⁴Iași Filial of Romanian Academy – Geography Staff)

DISTRIBUTION AND MOBILITY OF LEAD IN SOILS CULTIVATED WITH VEGETABLES. (I) TRADITIONAL CROPS
DISTRIBUȚIA ȘI MOBILITATEA PLUMBULUI ÎN SOLURI CULTIVATE CU LEGUME. (I) CULTURI TRADIȚIONALE

In this study we have follow the determination of total contents and extractible fractions, the estimation of inter-phases distribution tendencies and the risk potential of lead in soils cultivated with vegetables, in traditional systems. The experiments were performed using soil samples cultivated in field and in solariums. The results have showed that: (i) studied soils are not contaminated, and the main lead sources are the amendments applied to soils and irrigation water; (ii) reported to total contents of lead, the weight of mobile fractions varied between 9.36 – 20.81 %, and of pseudo-mobile fractions between 42.58 – 80.19 %, (iii) in relation to chemical-mineralogical components of soils, lead is selective distributed and has high affinity towards organic matter, phosphates and carbonates, (iv) the risk potential of lead is reduced due to relative low concentrations and thermodynamic control manifested by organic matter and carbonate – bicarbonate system on inter-phases distribution processes of lead.

Bulgariu Dumitru^{1,4}, Buzgar Nicolae¹, Stoleru Vasile², Munteanu Neculai², Bulgariu Laura³ (¹„Al.I.Cuza” University of Iași, ²University of Agricultural Sciences and Veterinary Medicine Iași, ³„Gheorghe Asachi” Technical University Iași, ⁴Iași Filial of Romanian Academy – Geography Staff)

DISTRIBUTION AND MOBILITY OF CHROMIUM IN SOILS GROWN BY VEGETABLES. (II) ORGANIC CROPS
DISTRIBUȚIA ȘI MOBILITATEA CROMULUI ÎN SOLURI CULTIVATE CU LEGUME. (II) CULTURI ECOLOGICE

In this study we have follow the determination of total contents and extractible fractions, the estimation of inter-phases distribution tendencies and the risk potential of chromium in soils cultivated with vegetables in ecological systems. The experiments were performed using soil samples cultivated with vegetables, in field and solariums. The results have showed that: (i) studied soils are not contaminated, and have a high supply level with chromium; (ii) reported to total contents of chromium, the weight of mobile fractions varied between 21.52 – 34.37 %, and of pseudo-mobile fractions between 44.71–56.29 %, (iii) in relation to chemical-mineralogical components of soils, chromium is selective distributed and has high affinity towards organic matter and iron oxy-hydroxides, (iv) the risk potential of chromium is low due to the thermodynamic control manifested by organic matter and iron oxy-hydroxides on mobility and speciation forms, and due to high probability of reduction of Cr(VI) to Cr(III).

Hoza Gheorghița, Chiorean Ștefania, M. D. Drăgușin (University of Agronomic Science and Veterinary Medicine Bucharest)

RESEARCH REGARDING MANAGEMENT SYSTEMS FOR PLANTS WITH TWO STEMS, CULTIVATED IN SOLAR

CERCETĂRI PRIVIND CONDUCEREA PLANTELOR DE TOMATE CU DOUĂ TULPINI, CULTIVATE ÎN SOLAR

The tomato plants were cultivated in solar, in extended cycle, managed with one stem as the classical plant management system for tomato, and with two stems, V shaped. The V shape was obtained by pinching the seedlings while planting them, removing only the growth top, and during the period when the shoots appeared, the first two shoots from the base of the plants were maintained, the rest of them being removed. The two shoots were individually supported on strings, V shaped, in order for the light to better penetrate to the plants. During the vegetation period, specific maintenance works were applied, with the observation that they were applied on agrotexile soil with mulch purpose and five phasal fertilizations, locally with Universol 18-11-18, 200 ml/pl, with a concentration of 1,5 %. The scheme of the experiment: V1- control, managed with one stem, at 80 cm / 40 cm , realizing a density of 31 250 pl/ha; V2 – plants managed with two stems, at 100 cm /40 cm, realizing a density of 25 000 pl/ha. After the interpretation of the results it could be observed that the plants managed with two stems behaved very well both from the point of view of vegetative growth and from the point of view of fructification. The fruit production calculated per plant was 3,8 kg for the plants managed with one stem and 6 kg for the plants with two stems. The production per meter square was 11,9 kg for the one stem variant and 15,1 kg for the two stem variant. From the point of view of the size of the fruit measured by weight, most of them were in the 100 – 150 g category, 35 % respectively 38 %, followed by the under 100 g category.

Hura Carmen¹, Perju Cristina¹, Munteanu Neculai², Stoleru Vasile² (¹NIPH/Regional Center of Public Healthy Iași, ²University of Agricultural Sciences and Veterinary Medicine Iași)

THE STUDY OF ORGANOPHOSPHORUS PESTICIDE RESIDUES IN SOIL AND VEGETABLE PRODUCTS IN DIFFERENT GROWING SYSTEMS

STUDIUL REZIDUURILOR DE PESTICIDE ORGANOFOSFORICE DIN SOL SI LEGUME, IN DIFERITE SISTEME DE CULTIVARE

In this paper are presented the research results obtained in 2010, in SIECOLEG Project, regarding the assessment of some organophosphoric pesticide residues (55 active substances) from 80 samples soils and 25 samples vegetables from different growing systems (ecological, in conversion and conventional). In all samples analysed the organophosphoric pesticide residues were included in admissible limits (Regulation (EC) nr. 396/2005).

Hura Carmen, Perju Cristina¹, Pancu Cornel¹, Munteanu Neculai², Stoleru Vasile² (¹INSP/Regional Center of Public Healthy Iași, ²University of Agricultural Sciences and Veterinary Medicine Iași)

ASSESSMENT OF THE HEAVY METALS CONTENT FROM SOIL AND VEGETABLE PLANT IN DIFFERENT GROWING SYSTEMS

EVALUAREA CONTINUTULUI DE METALE GRELE DIN SOL SI LEGUME, IN DIFERITE SISTEME DE CULTIVARE

In this paper are shown research results, on the assessment of heavy metals (lead, cadmium, copper, manganese), from 80 soil samples and 25 vegetables samples from different systems cultivation (organic, in conversion, conventional). Determination of heavy metals in different matrices was performed by atomic absorption spectrometry (AAS) - Shimadzu 6300, graphite furnace and autosampler. Heavy metals concentrations in the samples analyzed were within the maximum limits.

Iliev Petru, Ilieva Irina (Scientific-Practical Institute for Horticulture and Technologies, Republic of Moldova)

EFFICIENCY OF POTATO PRODUCTION IN REPUBLIC OF MOLDOVA IN DEPENDENCE OF VARIETY, SEED QUALITY AND GROWING AREA

EFICACIENȚA PRODUCERII CARTOFULUI ÎN REPUBLICA MOLDOVA ÎN FUNCȚIE DE SOI, CALITATEA SEMINȚEI ȘI ZONA DE CULTIVARE

In results of long-term studies where established that the main factors increasing sufficiently potato production are the right choice of variety and seed quality. In the same time high and quality yield could be obtain only using a good management as for ware and seed potato production. When the organizatoric and tehnological proceses are managed well one hectar of potato with the yield of 30 t/ha could give a profit around 800-1000 euro/ha.

Murad Erol, Maican Edmond, Haraga Georgeta, Biriș Sorin Ștefan (Polytechnic University Bucharest)

GREENHOUSE HEATING WITH BIOMASS

CERCETĂRI PRIVIND ÎNCĂLZIREA CU BIOMASĂ A UNUI MODUL DE SERĂ

In cold season, the greenhouses can provide local market with fresh vegetables at competitive prices if production costs are low, especially for fuel production. From economic and environmental considerations

it will be studied a vegetable greenhouse heated with hot air generator that burn biomass with an almost null CO₂ balance. Biomass used can be in the form of pellets of corn stalks, creeping stalks or other wooden materials, and corn kernels. Burning is done with a multifunction burner for granular biomass - pellets or corn kernels, burner developed in recently research. The aim is to conduct a greenhouse microclimate for a cold winter day through simulated experiments with the CLIMASERE software developed in Free Pascal 2.1.2 at U.P.B. It makes a comparison between heating with biomass and LPG or diesel economic both legally and environmentally.

Murad Erol, Safta Victor Viorel, Haraga Georgeta, Făraoanu Cristina, Panțiru Adrian (Polytechnic University Bucharest)

CONVECTIVE DRYER THERMAL COUPLED OF A GREENHOUSE USCATOR CONVECTIV CUPLAT ENERGETIC DE O SERĂ

Currently, we require for a reduction of producer prices of agricultural products and CO₂ emissions. For this purpose we study the operation of a convective dryer for agricultural products which during warm season is fueled with energy from thermal instalation with nominal power of 60 kW in a greenhouse heated by biomass type pellets or corn kernels. The convective dryer modulated type USCIMER 30/60AC is powered by low pressure steam (0.7 bar) from generator heat the greenhouse. Consumption of biomass is analyzed both during the cold season of heating the greenhouse and during the hot season in which agricultural products are dried. We will compare the costs for thermal energy produced by LPG or diesel to those for biomass and we will remark that there is a substantial reduction in fuel costs and a faster amortization of the thermal instalation.

Stoleru Vasile¹, Munteanu Neculai¹, Hura Carmen², Perju Cristina² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ² NIPH/ Regional Center of Public Healthy Iași)

THE STUDY OF ORGANOCHLORINE PESTICIDE RESIDUES IN SOIL AND VEGETABLES IN DIFFERENT GROWING SYSTEMS STUDIUL REZIDUURILOR DE PESTICIDE ORGANOCLORURATE DIN SOL SI LEGUME, IN DIFERITE SISTEME DE CULTIVARE

In this paper are presented the research results obtained in 2010, in SIECOLEG Project regarding the assessment of some organochlorine pesticide residues (20 active substances), from 80 samples soils and 25 samples vegetables from different growing systems (ecological, in conversion and conventional). In all samples analysed the organochlorine pesticide residues were included in admissible limits (Regulation (EC) nr. 396/2005).

POMICULTURĂ FRUIT GROWING

Babuc Vasile, Bostan Mihail (Agrarian State University of Moldova, Chișinău, Republic of Moldova)

DEVELOPMENT OF APPLE TREES GRAFTED ON M26 ROOTSTOCK DEPENDING ON THE METHOD OF CROWN FORMATION IN THE NURSERY. DEZVOLTAREA POMILOR DE MĂR ALTOIȚI PE PORTALTOIUL M26 ÎN FUNCȚIE DE METODA DE FORMARE A COROANEI ÎN PEPINIERĂ

Investigations were conducted in 2009-2010 in Nursery Fruit Company „Codru-ST” Ltd., which is located in the centre of Moldova. As objects of research were used apple varieties Idared, Golden Reinders and Gala Must and were bench-grafted on rootstocks M26. Planting distance was 90x35 cm. The spraying with Arbolin 036 SL 20 ml litre⁻¹ of water or the regular breaking of apical leaves can increase the number of sylleptic shoots on the central axle up to 5.6 times given control. The investigations made demonstrate that superior values of apple trees in the first and second fields of the fruit nursery were registered at the variety of perspective Gala Must, whose vigor of growth and capacity to emit sylleptic shoots is greater in comparison with other studied varieties.

Balan Valerian, Vămășescu S. (Agrarian State University of Moldova, Chișinău, Republic of Moldova)
INTENSIVE APPLE PLANTATION PRODUCTIVITY IN FUNCTION OF FOLIAR FERTILIZATION APPLICATION.

PRODUCTIVITATEA PLANTAȚILOR INTENSIVE DE MĂR ÎN FUNCȚIE DE APLICAREA FERTILIZĂRILOR FOLIARE.

An investigation of development systems in apple foliar fertilization was performed by means of stationary research methods and fields. As study material of apple trees have served trees of three apple varieties Golden Delicious, Idared and Florina 8 years old grafted on rootstock M26. The planting system is 4x2 meters. In orchard was used foliar fertilization based on Urea46% N in different concentration of 0,4% to 1,2% of deferent stages of fruit development, Polyfeed (N₁₉P₁₉K₁₉) at a 0,1% concentration and CaCl₂ (0,5%, 0,7%). The Golden Delicious variety harvest increased from 25.5 t/ha in 2008 up to 31.1 t/ha in

2009, Idared is the variety who yields are from 18,3 t/ha in 2009 in control variant up to 29.1 t/ha in 2010 in variant 4. The Florina crop varieties ranged from 23.1 t/ha in 2008 up to 34.9 t/ha in 2010.

Barboș I.¹, Barboș Ecaterina² (¹Agrarian State University of Moldova, Chișinău, Republic of Moldova, ²Academy of Public Administration under the President of the Republic of Moldova)

DIRECTIONS FOR EFFICIENT USE OF LAND FUND FRUIT GROWING IN THE REPUBLIC OF MOLDOVA

DIRECȚIILE UTILIZĂRII EFICIENTE A FONDULUI FUNCİAR ÎN POMICULTURA REPUBLICII MOLDOVA

Results are exposed on land use efficiency in fruit growing. We propose several directions for improving land use through the establishment of productive perennial plantations in the Republic of Moldova.

Barboș Mihai¹, Bujoreanu N.², Dascălu N.¹ (¹Agrarian State University of Moldova, Chișinău, Republic of Moldova, ²Institute of Genetics and Plant Physiology, Moldavian Academy of Sciences, Chișinău, Republic of Moldova)

GROWTH AND FRUITION OF RASPBERRY PLANTS FOR GETTING IN INTENSIVE CULTURE OF ORGANIC PRODUCTION

CREȘTEREA ȘI FRUCTIFICAREA PLANTELOR DE ZMEUR ÎN CULTURA INTENSIVĂ PENTRU OBTINEREA PRODUCȚIEI ECOLOGICE

We studied the basic indicators of growth, photosynthetic activity, biological productivity and usefulness of raspberry plants in intensive culture for organic growing. Experimental data were obtained on plant growth substances content of plastics, crop and fruit quality. We have established the basic parameters of intensive culture Razzie for obtaining organic fruit.

Botu Mihai¹, Grădinariu Gică², Vicol Adina-Cristina¹ (¹University of Craiova – Research and Development Station for Fruit Tree Growing Valcea, ²University of Agricultural Sciences and Veterinary Medicine Iași)

SOME ISSUES OF LATERAL BEARING WALNUT CULTIVARS UNDER GROWING CONDITIONS IN ROMANIA

UNELE PROBLEME ALE SOIURILOR DE NUC CU FRUCTIFICARE LATERALA IN CONDITIILE CULTIVARII IN ROMANIA

Research The modernization of walnut growing (high productivity and high quality of fruit) involves using a variety assortment of valuable cultivars and modern growing technology. During the last years, along with the terminal bearing walnut cultivars (mostly of Romanian origin) number of cultivars with lateral bearing (originally from California and southern France) were introduced. 16 years ago cultivars walnut trials were established at SCDP Valcea and USAMV Iasi where 22 terminal bearing cultivars and 10 lateral bearing cultivars were planted. Their behavior regarding to the climatic and technological conditions in Romania was evaluated. In the 16th leaf, the average fruit yield varied from 1.35 t / ha (Adams 10) to 2.45 t / ha (Valcor) in the case of, the terminal bearing cultivars and from 2.68 t / ha (Femette) to 3.62 t / ha (Vina) at the lateral bearing walnut cultivars. The most productive cultivars with terminal bearing were Valcor (2.45 t / ha), Jupanesti (2.32 t / ha), Valmit (2.27 t / ha), Velnita (2.22 t / ha) Franquette (2.10 t / ha), etc.. Vina (3.62 t / ha), Hartley (3.52 t / ha), Ferjean (3.22 t / ha), Payne (3.10 t / ha) and others emphasized high yields among the lateral bearing cultivars. The lateral bearing cultivars are susceptible to low temperatures (-22°C, -25°C), even some trees were killed. Temperatures like -1°C; -2°C in April-May period may destroy the flowers, shoots and leaves. Such temperatures can be found in all areas of the country, with the exception of some micro areas from Northern Oltenia. Compared with terminal bearing cultivars, the lateral bearing ones are more sensitive to Xanthomonas campestris pv. juglandis attack on fruits (8.6 to 14.1% compare with 3.3 to 4.4%). The lateral bearing cultivars are strongly influenced during growing and bearing fruits by the technology applied in the orchard (pruning, phytosanitary treatments, fertilization, etc.). Without adequate growing technology, the bearing capacity of lateral cultivars is decreasing drastically, sometimes even lower than the terminal bearing ones, which are more rustic. Growing of lateral bearing walnut cultivars is recommended in those micro areas of Romania where damaging low temperatures during winter and spring do not occur very often and also where bacterial diseases of walnut do not cause major losses on fruits and shoots.

Căuleț Raluca, Negrea Roxana, Pașcu D., Liliana Sfichi-Duke (University of Agricultural Sciences and Veterinary Medicine Iași)

O-J-I-P TRANSIENT ANALYSIS – RAPID AND NON-INVASIVE METHOD FOR REAL TIME RESPONSE MONITORING OF SOME RASPBERRY AND BLACKBERRY GENOTYPES AT CULTURE CONDITIONS
ANALIZA FAZELOR DE FLUORESCENȚĂ O-J-I-P – METODĂ RAPIDĂ ȘI NON-INVAZIVĂ DE MONITORIZARE ÎN TIMP REAL A RĂSPUNSULUI UNOR GENOTIPURI DE ZMEUR ȘI MUR LA CONDIȚIILE DE CULTURĂ

In the last years chlorophyll fluorescence analysis has become one of the most used techniques for detecting in real time the changes which occurs in molecular structure and functionality of photosynthetic apparatus as a response at action of biotic and abiotic factors. The aim of this paper is monitoring of response of some raspberry and blackberry genotypes at different soil pH conditions through O-J-I-P fluorescence transients, induced after excitation of the foliar reaction centers with a 3000 μmol m⁻² s⁻¹ of red light pulse. Vegetal material was represent by 2 raspberry cultivars (Opal and Cayuga) and 2 blackberry cultivars (Lochness and Thornfree)

which were planted in greenhouse on two different pH variants of substrate (4.7 and 5.8). After the analysis of parameters derivate from chlorophyll fluorescence values, measured at different times, it has been observed, on the variants potted on acid substrate, a decreasing of photosynthesis efficiency as a effect of amplification of light dissipation rata as heat.

Cimpoieș Gheorghe, Popa S., Manziuc Valeriu; Popa Ion (Agrarian State University of Moldova, Chișinău, Republic of Moldova)

PRODUCTIVITY OF APPLE TREES IN "V" - SYSTEM ORCHARD.

PRODUCTIVITATEA POMILOR DE MĂR ÎN STRUCTURA PLANTAȚIEI CU CORONAMENTUL ÎN DOUĂ PLANURI OBLICE ("V").

A trial was established in the spring of 2004, one-year-old scab-resistant apple cultivars grafted on dwarfing M.9 rootstock, were planted in the Experimental Station "Criuleni" in central Republic of Moldova. Apple trees of the cultivar Generos and Florina were trained different crown, with trees leaned to 40° from vertical, each in an alternate direction down the row ("V" system). The experiment was designed as a randomized block with three replicates. Each plot consisted of ten trees. The site was drip irrigated. The higher value indices was obtained in the variant were trees was formation on V-palmette and angle of approximately 40° from vertical.

Cireașă Victor (University of Agricultural Sciences and Veterinary Medicine Iași)

POMOSANCTITY

POMOSFINȚENIA

Pomosanctity is a divine-human science who was born in paradise. Trees' flowering is an act of vegetal resurrection, which sanctifies our eyes and the pleasant fragrance of flowers and fruit sanctifies our breath. Fruit trees are the symbol of the Holy Spirit, and brings us the joy of baring whereas our Lord Jesus Christ says: "A good tree is known by its fruit". God draws attention to the fruit growers through His holy words: "If you will follow My laws and keep and fulfil My commands, I will give you rain on time and trees will give you their fruits" (Leviticus 25.3-6). Trees fructification is of great bioenergetic and nutritional value and it's important for human health. Trees illness is like humans falling under the weight of sin. The trees are sprayed with curative substances, and sinful people are cured by praying. Pomosanctity formula is a function of purification, holiness and unity.

Hoza Dorel, Ion Ligia, Asănică A., Iosif F., Diaconescu M. (University of Agronomic Science and Veterinary Medicine Bucharest)

RESEARCH REGARDING THE INFLUENCE OF PRUNING AND PLANTING DISTANCE ON THE GROWTH AND FRUCTIFICATION OF SOME APPLE TREE VARIETIES WITH BIOLOGICAL RESISTANCE

CERCETĂRI PRIVIND INFLUENȚA TĂIERII ȘI A DESIMII DE PLANTARE ASUPRA CREȘTERII ȘI FRUCTIFICĂRII UNOR SOIURI DE MĂR CU REZISTENȚA BIOLOGICĂ

The research was conducted in a high density plantation, 2777 trees/ha, with four varieties resistant to diseases: Pionier, Prima, Generos and Florina and four pruning variants (shortening the semiscaffold with 1/2-1/3 of length with and without shortening of annual branches). The reaction of the trees to the pruning of different intensity was particular per variety regarding the trunk growth, fruit bud differentiation and obtained production. Only the growth of the shoots was directly influenced by the intensity of the pruning. Generally, the shortening of the secmiscaffold with 1/2 with and without shortening the annual branches led to better results on average for the varieties Prima, Pionier and Generos, and for the Florina the shortening of the semiscaffold with 1/3 of length.

Manziuc Valeriu, Cimpoieș Gheorghe, Popa Ion, Popa S. (Agrarian State University of Moldova, Chișinău, Republic of Moldova)

COMPARATIVE EFFICIENCY OF CROWN FORMATION SYSTEMS IN INTENSIVE APPLE PLANTATIONS

EFICIENȚA COMPARATIVĂ A SISTEMELOR DE FORMARE A COROANEI ÎN PLANTAȚIILE INTENSIVE DE MĂR

One of the directions of further improving of intensive culture the technology of apple trees, is to create and test new systems of crown formation. With this purpose in the Republic of Moldova were tested in a stationary experiment on six systems of formation of a crown on varieties of apple Generos and Florina, grafted on rootstock M9. Studies have shown that the rates of accumulation of vegetative mass during the formation of spindle-shaped crown are more emphasized, particularity at the free growing fusiform of apple trees. In conclusion, for the first 3 years of fruiting highest yield per unit area by the variety Generos obtained for the formation of its type Spindle bush, and at variety Florina – respectively is Solax.

Morariu Aliona, Căuleț Raluca Petronela, Dascălu Marius Constantin, Șfichi –Duke Liliana (University of Agricultural Sciences and Veterinary Medicine Iași)

MICROPROPAGATION OF RASPBERRY CULTIVARS BY TERMINAL AND AXILLARY BUD EXPLANTS

MICROPROPAGAREA UNOR SOIURI DE ZMEUR DIN EXPLANTE DE MUGURI TERMINALI ȘI AXILARI

The purpose of this study was to establish the optimal conditions for in vitro micropropagation of two raspberry cultivars (Opal and Cayuga). Axillary and terminal buds were used as explants. After sterilization, the explants were placed into MS medium supplemented with different concentrations of cytokinins (BAP, TDZ and K) and auxins (2,4D and IAA) added alone or in combination with GA₃. The greatest number of shoots, approximately 4.67 per explant, was induced in medium containing 1mg/l AIA+ 1mg/l BAP + 0.5mg/l GA₃ and the maximum shoot length, approximately 2.58 cm, was obtained on medium containing 2mg/l AIA+ 1mg/l BAP. For the induction of roots, the shoots were placed on MS medium supplemented with different concentrations of NAA (0.5, 1 and 2 mg./l). 75% of the regenerated plants were transferred in soil for acclimation to greenhouse conditions.

Peșteanu Ananie, Vasile Babuc, Eugeniu Gudumac (Agrarian State University of Moldova, Chișinău, Republic of Moldova)

PRODUCTIVITY OF LONG-TERM CULTIVARS IN THE APPLE TREE SUPERINTENSIVE CULTURE SYSTEM

PRODUCTIVITATEA SOIURILOR DE PERSPECTIVĂ ÎN SISTEMUL SUPERINTENSIV DE CULTURĂ A MĂRULUI

The investigations were made in a commercial orchard "Codru-ST" Ltd. founded in the spring of 2000 year with bench grafting. Apple trees of the varieties Idared, Golden Reinders, Sir Prise, Florina, Mutsu, Gala Must, Jonagored, Jonagold and Ionica growth on dwarfing M 9 rootstock, the distance of plantation between rows is 4.0 m, and between trees in the row is 1.0 m. The trees were trained by the slender spindle crown formation. From 2003 to 2010 was studied the productivity of the apple orchard and fruit quality. It was established, that the first fruits, was registered in the 2003 year, when the yield of the studied cultivars constituted 13.3-33.8 t/ha. In 2010 year, the yield significantly increased to 26.7-40.6 t/ha. During the study period, the highest averages yield of fruits was obtained at the varieties Ionica – 32.07 t/ha, Gala Must – 32.38 t/ha, Golden Reinders – 32.92 t/ha și Jonagored – 35.06 t/ha. The lowest averages yield was registered at the varieties Jonagold, Florina and Mutsu.

Plopa Catița, Budan Sergiu (Research Institute for Fruit Growing, Pitesti Mărăcineni)

STUDY CONCERNING IN VITRO PROPAGATION OF CHERRY CLONAL ROOTSTOCK GISELA 5

CERCETĂRI PRIVIND PROPAGAREA IN VITRO A PORTALTOIULUI VEGETATIV DE CIREȘ GISELA 5.

In the process of in vitro propagation of Gisela 5 cherry vegetative rootstock, the influence of the culture medium composition and the type of explant were analyzed. Different concentrations of growth regulators added to the culture media M&S, QL and LF induced a different behaviour in the cultures. The initiation phase was started by using two types of explants: meristems from the buds in February and mini seedlings taken from herbaceous shoots in May. The best results were obtained on the M&S medium with 95% of explants regenerated from the meristems and 82% of explants regenerated from the single bud mini seedlings. The hormonal balance in this case was of 0.1 mg/L⁻¹ GA₃ and 1 mg/L⁻¹ IBA respectively. The multiplication rate with the highest value of 1:7 was produced on the M&S culture medium with the hormonal balance of 1 mg/L⁻¹ BAP, 0.1 mg/L⁻¹ GA₃ and 0.2 mg/L⁻¹ NAA. At the stage of root development, the evolution of the plants was assessed by analyzing the time of rooting, root number and root length. Taking these issues into account, the M&S culture medium with 1.5 mg/L⁻¹ IBA had the highest efficiency compared with ½ MS, LF and QL media.

FLORICULTURĂ, ARBORICULTURĂ ORNAMENTALĂ FLORICULTURE, ORNAMENTAL ARBORICULTURE

Berecici D., Băla Maria (Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara)

CHOOSING THE ASSORTMENT OF FREESIA HYBRIDA CULTIVARS, IN ORDER TO OBTAIN FLOWERS IN THE SEASON OF WINTER-SPRING

ALEGEREA SORTIMENTULUI DE SOIURI LA SPECIA FREESIA HYBRIDA, ÎN VEDEREA OBȚINERII DE FLORI ÎN SEZONUL IARNĂ-PRIMĂVARĂ

In the present research, we have used 20 new cultivars of Freesia, with different characteristics of flowering. The research done in three years has shown that for a better lagging of flowering it is important to use a great variety of cultivars in order to assure the cut flower needs of the market at a certain time. We notice the cultivars that have flowered early each year during the research (Cascade, Mosella) and also those that have a great period of flowering (Cascade, Galaxi, Mosella, Santana, Yvonne) no matter the experimental conditions.

Buta Erzsebet, Cantor Maria, Buta Mihai (University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca)

THE INFLUENCE OF PHYTOSANITARY TREATMENTS AND FERTILIZERS UPON *CHRYSANTHEMUM* CULTIVARS

INFLUENȚA TRATAMENTELOR FITOSANITARE ȘI A FERTILIZĂRILOR ASUPRA SOIURILOR DE *CHRYSANTHEMUM*

In the flower market demand grows, so it grows massively the imports of flowers, including the genus Chrysanthemum, who occupies an important place. By increasing competition, the producers in our country are ever more affected financially. Chrysanthemum cultivation importance derives from its esthetic qualities, what make it to match for any occasion, also the diversity of shapes, sizes and colors, the suitability for modern homes makes the chrysanthemum to be highly appreciated by the general public, and in the same time to be economical a profitable crop. In this study was experienced the behavior of some Chrysanthemum multiflora varieties, regarding the effect of protection and nutritional substances. During the experiences were made some observation and determination on the difference in plants development, degree of flowering, the resistance for diseases and pests, and finally the selling price, according their quality. At the obtained data was made their average and were statistically interpreted, using the results obtained, which can lead to some conclusions on low or not, the dose administration of these substances, and ultimately decrease production cost. From this study comes to the fore the importance of using the said substances, without cannot be obtained high quality plants.

Cantor Maria, Buta Erszabet (University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca)

RESEARCHES ON BEHAVIOR OF A NEW HYACINTHUS ASSORTMENT FOR FORCED CULTURE

CERCETARI PRIVIND COMPORTAREA UNUI SORTIMENT NOU DE ZAMBILE IN CULTURA FORTATA

Throughout this experiment, we tried to mark out the characteristics of some hyacinth cultivars, and it's suitability to be produced in greenhouses, in order to determine the preferences to certain environmental factors, which provides the plant a good length and quality flowers. The experiment was conducted in the greenhouse of USAMV Cluj-Napoca, Floriculture Department. The biological material were imported from Holland and it is represented by 9 Hyacinthus officinalis L. cultivars: 'Amethyst', 'Blue Jacket', 'Carnegie', 'Delft Blue', 'Fondant', 'Peter Stuyvesant', 'Pink Pearl', 'Purple Star' and 'Splendid Cornelia'. Following research, on the new nine cultivars of hyacinths, concluded that the mixture of standing garden soil peat and sand provides the requirements of Hyacinth, and it is recommended to be used as a potting soil for producing hyacinth in greenhouses. Remarkable varieties with outstanding results, 'Carnegie', 'Pink Pearl', 'Splendid Cornelia' and 'Peter Stuyvesant' which is recommended for promotion to culture forcing.

Pop Mihai Radu („Lucian Blaga” University of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection)

ANALYSIS IN THE MORPHOLOGICAL ASPECT AND THE PHENOTYPE VARIABILITY FLOWERING WITHIN SPECIES *ANGELICA ARCHANGELICA* L.

ANALIZA SUB ASPECTUL MORFOLOGIC ȘI AL VARIABILITĂȚII FENOTIPICE A INFLORESCENȚEI ÎN CADRUL SPECIEI *ANGELICA ARCHANGELICA* L.

This paper examines the variability of the main components of the inflorescence for the selection of forms with high performance in terms of seed production at Angelica archangelica L.. Researches were conducted in the experimental field of Lucian Blaga University in Sibiu, in the period 2009-2010, using morphological description of the plant method. The results revealed a wide variability the number of stems per plant floriferous, umbels diameter, number of umbels, average seed mass per plant (MMS) and thousand grain weight (MMB) based on the following statistical indicators: mean, variance, standard deviation and variability coefficient.

Poșta Daniela Sabina, Hernea Cornelia (Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara)

RESEARCHES CONCERNING THE PRODUCTION OF PLANTING MATERIAL USING GENERATIVE METHODS ON *ALBIZZIA JULIBRISSIN* Durazz. SPECIES

CERCETĂRI PRIVIND PRODUCEREA MATERIALULUI SĂDITOR PE CALE GENERATIVĂ LA SPECIA *ALBIZZIA JULIBRISSIN* Durazz.

The purpose of this research is to highlight the variation of whole-plant growth characteristics such as height, root collar diameter, number of leaflets and leaf area for Albizzia julibrissin, using different mixtures of soil. For this purpose four experimental trials have been installed The trails had the following design: V₁: 60% manure + 20% sandy + 20% ground leaves, V₂: 40% manure + 40% sandy + 20% ground leaves, V₃: 50% manure + 30% soil + 20% ground leaves, V₄: 30% manure + 50% soil + 20% ground leaves. Biometric observations of seedling were made at 69 days, 123 days and 154 days for each trial. The results indicate the high position of seedlings grown in rooting media composed by 30% manure + 50% sand + 20% ground leaves.



LUCRĂRI PREZENTATE POSTER

POSTER PRESENTATIONS

LEGUMICULTURA VEGETABLE GROWING

Ambăruș Silvica¹, Brezeanu Petre Marian¹, Brezeanu Creola¹, Geng Sansheng² (¹Vegetable Research and Development Station Bacău, ²National Engineering Research Centre for Vegetables Beijing Republic of China)
STUDIES ON THE MAIN QUANTITATIVE TRAITS OF „ROȘIOARĂ”- MOON RADISH VARIETY
STUDII PRIVIND ÎNSUȘIRILE PRINCIPALELOR CARACTERE CANTITATIVE ALE SOIULUI DE RIDICHE DE LUNĂ ROȘIOARĂ

For judicious management of the selection process in order to maintain varietal characters and traits of „ROȘIOARĂ” variety, within the specificity and authenticity have been recruited within the limits $x \pm s$ for each character individually. Experimentation was conducted in 2008-2010 at Vegetable Research and Development Station Bacău, amid continuing selection of “ROȘIOARĂ” radishes variety. The main purpose of the research was to follow the variability of quantitative characters in field study of progenies of mother plants in order to maintain genetic integrity of the variety. For the study of variability measurements were made on a sample of 100 individuals (mother plants) taken at random on the diagonals of the field. The effectuated measurements were made on: the root height (cm); the root diameter (cm); the index form; the root weight (g)

Ardelean Alina Grigorița (University of Oradea, Faculty of Environmental Protection)
RESEARCH REGARDING THE EFFECT OF THE FOLIAR FERTILIZERS OVER THE SOLAR GREENHOUSE CULTIVATED TOMATO PRODUCTION
CERCETARI PRIVIND EFECTUL INGRASAMINTELOR FOLIARE ASUPRA PRODUCTIEI DE TOMATE CULTIVATE IN SOLAR

The foliar fertilizers are complex liquid solutions, having macro- and microelements, used extraradicular, ensuring that nutritional ions penetrate into the leaves, simulating absorption, translocation and assimilation of the nutrients into the soil, with positive effects over the quantity and quality level of horticultural farming. In our experience, the foliar fertilizer types applied to the solar greenhouse cultivated tomatoes, had different effects over the quality and quantity of production. The best results were obtained on those fertilized with foliar types having a complex and balanced chemical content, the foliar fertilizers type: Nitrophoska 10- 4- 7, Multifertil 5-10-10, Fitofolis 141 si Fitofolis 411.

Aștefanei Dan¹, Bulgariu Dumitru^{1,4}, Bulgariu Laura², Stoleru Vasile³ (¹„Al.I.Cuza” University of Iași, ²„Gheorghe Asachi” Technical University Iași, ³University of Agricultural Sciences and Veterinary Medicine Iași, ⁴Iași Filial of Romanian Academy – Geography Staff)

DISTRIBUTION AND MOBILITY OF BARIUM IN SOILS GROWN BY VEGETABLES. (I) TRADITIONAL CROPS
DISTRIBUȚIA ȘI MOBILITATEA BARIULUI ÎN SOLURI CULTIVATE CU LEGUME. (I) CULTURI TRADIȚIONALE

In this study we have follow the determination of total contents and extractible fractions, the estimation of inter-phases distribution tendencies and the risk potential of barium in soils cultivated with vegetables, in traditional systems. The experiments were performed using 16 soil samples cultivated with vegetables, in field and in solariums. The results have showed that: (i) studied soils are not contaminated, and the main barium sources are the amendments applied to soils and parental materials; (ii) reported to total contents of barium, weight of mobile fractions varied between 9.36 – 20.81 %, and of pseudo-mobile fractions between 42.58 – 80.19 %, (iii) in relation to chemical-mineralogical components of soils, barium is selective distributed and has high affinity towards phosphates and carbonates, (iv) the risk potential of barium is reduced due to relative low concentrations and thermodynamic control manifested by carbonate – bicarbonate system and clay minerals on inter-phases distribution processes of barium.

Avasiloaiei Dan Ioan, Munteanu N., Brezeanu M., Muntean Delia (University of Agricultural Sciences and Veterinary Medicine Iași)

PRELIMINARY STUDIES REGARDING THE OPTIMIZATION OF SOME TECHNOLOGICAL FACTORS FOR VEGETABLES GROWING IN AN ECOLOGICAL SYSTEM
STUDII PRELIMINARE PRIVIND OPTIMIZAREA UNOR FACTORI TEHNOLOGICI DE CULTIVARE A LEGUMELOR ÎN SISTEM ECOLOGIC

The paper aims at reviewing the most prominent technological factors and how they can influence the sustainability of crops. The evaluation of these factors will be based on a comparative analysis of their influence in conventional vegetable growing systems and organic vegetable growing systems.

Brezeanu Creola¹, Robu T.², Brezeanu P.M.¹, Ambăruș Silvica¹ Maria Calin¹, Cristea Tina Oana¹, Geng Sansheng³ (¹Vegetable Research and Development Station Bacău, ²University of Agricultural Sciences and Veterinary Medicine Iași, ³National Engineering Research Center for Vegetables Beijing Republic of China)
STUDIES ON THE POTENTIAL CULTURE OF SPECIES PHASEOLUS AUREUS
STUDII PRIVIND POTENTIALUL DE CULTURA AL SPECIEI PHASEOLUS AUREUS

Phaseolus aureus is practically unknown in Romania. This paper proposes a bibliographic study of the suitability of cultivation in our country, comparatively analyzing popular culture, technology and patented worldwide and biological requirements of species. In this regard, we presented issues like: special requirements for the environment, cultural practices, production and performance, market challenges to growing and improving in Phaseolus aureus growing and consuming countries. Adjacent to the area's climatic conditions are Moldova and thus can be cultivated species in this habitat.

Brezeanu Petre Marian¹, Neculai Munteanu², Creola Brezeanu¹, Silvica Ambăruș¹ (¹Vegetable Research Development Station Bacău, ²University of Agricultural Science and Veterinary Medicine Iași)
SCREENING OF TOMATOES GERMPLASM CULTIVATED IN ROMANIA IN ECOLOGICAL SYSTEM CULTURE
PREZENTAREA SORTIMENTULUI DE TOMATE CULTIVATE ÎN SISTEM ECOLOGIC ÎN ROMÂNIA

Tomatoes in various forms, fall within the daily diet of the population being consumed fresh, prepared, canned or dried very well appreciated in all world cuisines. Tomatoes are providing nutrients (carbohydrates, proteins, lipids, organic acids), minerals, vitamins (A, B1, B2, B6, C, PP, E, K) and are one of the most balanced fruit in rational nutrition. In this research paper we discuss aspects regarding type of growth, vigour, production potential (t/ha), precocity, plant resistance to pathogens, some fruit characteristics like: shape, color, weight, lodge number, firmness, storage and split resistance. Our observation and determinations were made on a range variety on tomatoes cultivated in ecological system culture.

Bulgariu Dumitru^{1,4}, Buzgar Nicolae¹, Munteanu Neculai², Stoleru Vasile², Bulgariu Laura³ (¹„Al.I.Cuza” University of Iași, ² University of Agricultural Sciences and Veterinary Medicine Iași, ³„Gheorghe Asachi” Technical University Iași, ⁴Iași Filial of Romanian Academy– Geography Staff)
DISTRIBUTION AND MOBILITY OF CADMIUM IN SOILS GROWN BY VEGETABLES. (II) ORGANIC CROPS
DISTRIBUȚIA ȘI MOBILITATEA CADMIULUI ÎN SOLURI CULTIVATE CU LEGUME. (II) CULTURI ECOLOGICE

In this study we have follow the determination of total contents and extractible fractions, the estimation of inter-phases distribution tendencies and the risk potential of cadmium in soils cultivated with vegetables, in organic system. The experiments were performed using soil samples cultivated with vegetables, in field and in solariums. The results have showed that: (i) studied soils are not contaminated, and the main cadmium sources are parental materials and the amendments applied to soils; (ii) reported to total contents of cadmium, the weight of mobile fractions varied between 17.53 – 22.08 %, and of pseudo-mobile fractions between 42.01 – 65.89 %, (iii) in relation to chemical-mineralogical components of soils, cadmium is selective distributed and has high affinity towards organic matter and carbonates, (iv) the risk potential of cadmium is relative reduced due to low concentrations and of thermodynamic control manifested by organic matter on inter-phases distribution processes and of speciation forms mobility.

Călin Maria, Cristea Tina Oana, Ambăruș Silvica, Brezeanu Creola, Brezeanu Petre Marian, Avasiloiu Dan Ioan (Vegetable Research Development Station Bacău)
STUDY OF FRUIT QUALITY IN TOMATO PEPPER AND EGGPLANT CULTIVATED IN CONVENTIONAL AND ORGANIC AGRICULTURE
STUDIUL CALITĂȚII FRUCTELOR DE TOMATE, ARDEI ȘI VINETE CULTIVATE ÎN AGRICULTURĂ ECOLOGICĂ ȘI CONVENȚIONALĂ

Research and experimental farming of tomatoes, peppers and eggplant grown in organic and conventional agriculture have been performed in Vegetable Research and Development Station Bacău, from 2006 to 2010. Fruit composition was analysed by the Horticultural Faculty of U.S.M.V. Bucharest. Analyses performed to show differences in the composition of vegetables grown in conventional and organic agriculture. The content of soluble solid substances of tomatoes was higher in conventional agriculture. The content of soluble solid substances of peppers and eggplant was higher in organic agriculture. % of glucose was higher in organic farming in all species. % of fructose was higher in conventional agriculture to all species. The content of tomato ascorbic acid was higher in conventional agriculture. The content of peppers and eggplant ascorbic acid was higher in organic agriculture. Carotene and lycopene content of tomatoes varied depending on cultivar.

Cristea Tina Oana¹, Prisecaru Maria², Călin Maria¹, Brezeanu Creola¹, Brezeanu Marian¹, Avasiloiu Dan Ioan¹ (¹Vegetable Research and Development Station Bacău, ²„Vasile Alecsandri” University Bacău)
SCREENING THE INFLUENCE OF TEMPERATURE AS STRESS FACTOR IN THE ORIENTATION OF MORPHOGENETIC REACTION OF BRASSICA OLERACEA ANTHERS CULTIVATED IN VITRO

STUDII PRIVIND INFLUENȚA TEMPERATURII CA FACTORUL DE STRESS DETERMINANT ÎN ORIENTAREA REACȚIEI MORFOGENETICE A ANTERELOR DE *BRASSICA OLERACEA* CULTIVATE *IN VITRO*

Anther culture has become a powerful tool for the rapid production of haploid and inbred lines used for obtaining hybrid cultivars and it has reduced significantly the time required for breeding new cultivars by at least 2 to 3 years. Androgenesis results in homozygous progeny from a heterozygous parent in a single generation and provides excellent material for research, plant breeding and plant transformation. There are many factors that influence the effectiveness of anther culture and these factors may also interact. Some of major factors are genotype, donor plant growth conditions, anther pretreatment, time of their flowering, microsporogenesis phase, cultivation media composition, temperature shock and environment conditions. The aim of the present work was to assess the influence of temperature as stress factor in the orientation of morphogenetic reaction of Brassica oleracea anthers cultivated in vitro toward the obtaining of haploid plants.

Drăghicioiu Petre, Berar Viorel (Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara)
RESEARCHES CONCERNING THE QUALITY OF LETTUCE CULTIVATED IN GREENHOUSE AND FERTILIZED WITH NATURAL PRODUCTS
CERCETĂRI PRIVIND CALITATEA SALATEI CULTIVATĂ ÎN SERĂ ȘI FERTILIZATĂ CU PRODUSE NATURALE

This scientific paper is to make evident the qualitative role of one assortment of lettuce used in a in a polyfactor type experience, the set up of the variants being achieved according to subdivided plot method, in october 2009 - february 2010 period. The A factor was represented by one assortment of lettuce which was constituted by the next lettuce lines: a₁-AS 104, a₂-AS 106, a₃-AS 107, a₄-AS 108, a₅-AS 6119 și a₆-AS 6123. The B factor had the most important influence over the lettuce quality terms the concentration of nitrate level and the total quantity of carbohydrates. This factor was represented by three fertilization graduation with biological substances: Elrom, Bionex and Bioplasma.

Hobincu Marlana, Munteanu N., Tincă Gabriela, Podaru Doina – Maria, Pădurariu Eugenia Anca (University of Agricultural Sciences and Veterinary Medicine Iași)

MORPHOLOGICAL AND PHYSIOLOGICAL CHARACTERISTICS OF THE SPECIES *ORIGANUM VULGARE* L. IN ORGANIC GROWING CONDITIONS IN THE COUNTY OF IASI
CARACTERISTICI MORFOLOGICE ȘI FIZIOLOGICE ALE SPECIEI *ORIGANUM VULGARE* L. ÎN CONDIȚII DE CULTIVARE ECOLOGICE ÎN JUDEȚUL IAȘI

The paper highlights the main morphological and physiological characteristics of the species Origanum vulgare L. in organic growing conditions in the county of Iassy. The results show that under these conditions the plant has a typical morphology and physiology with some deviations on the habitus of the plant, vegetative mass, the vegetation, flowering, harvest quality. These results demonstrate the species well adapted to natural conditions of the science and efficient cultivation opportunities.

Muntean Delia, Munteanu N., Hobincu Marlana, Avasiloeaiei D. I. (University of Agricultural Sciences and Veterinary Medicine Iași)

ON THE ORNAMENTAL FEATURES OF SOME VEGETABLE CULTIVATED SPECIES
VALOAREA ORNAMENTALĂ A UNOR SPECII LEGUMICOLE CULTIVATE

*The research was based on documentary research and field-level collections, the value of wild ornamental vegetable cabbage (*Brassica oleracea* L. var. *acephala* DC) and pumpkin (*Cucurbita pepo* L var *ovifera*). The sprouts were detected ornamental shapes by color, shape and appearance of leaves. Ornamental pumpkin shapes differ in plant habitus, size, shape, color and appearance of the fruits.*

Munteanu Neculai (University of Agricultural Sciences and Veterinary Medicine Iași)

AGRICULTURAL ECOSYSTEM SUSTANABILITY- BETWEEN NECESSITIES AND POSIBILITIES
SUSTENABILITATEA ECOSISTEMELOR AGRICOLE - ÎNTRE NECESITATE ȘI POSIBILITĂȚI

The paper presents a new approach of the sustainability as concept, definition and content from the philosophical level to the practical one for the environment and agriculture. Discussion based on different opinions are also presented.

Pădurariu Eugenia Anca, Munteanu N., Bulgariu D., Podaru Doina - Maria, Hobincu Marlana (University of Agricultural Sciences and Veterinary Medicine Iași)

COMPARATIV STUDY ON THE HEAVY METALS POLLUTION IN CONVENTIONAL AND ECOLOGICAL VEGETABLE CROPS
STUDIU COMPARATIV PRIVIND POLUAREA CU UNELE METALE GRELE LA CULTURILE LEGUMICOLE CONVENȚIONALE ȘI ECOLOGICE

The degree of heavy metal pollution has been analyzed in comparison to two types of vegetable crops: conventional and organic. The results show that both types of cultures, the degree of pollution with heavy metals does not exceed the maximum limits. Heavy metal content of organic crops ranged from undetectable to 3.02 µg/kg, and conventional crops, it ranged from faint to 9.34 µg/kg.

Podaru Doina - Maria, Munteanu N., Birescu L., Pădurariu Eugenia Anca, Hobincu Marlina (University of Agricultural Sciences and Veterinary Medicine Iași)

RESULTS ON THE EFFECTIVE TROPHICITY OF A VEGETABLE USED SOIL BY THE ECOPEDOLOGICAL MATRIX

REZULTATE PRIVIND TROFICITATEA EFECTIVĂ A UNUI SOL LEGUMICOL CU AJUTORUL MATRICEI ECOPEDOLOGICE

The paper presents the experimental results regarding on the ecopedological matrix the effective trophicity of soil resources of the Experimental Station of plant the Faculty of Horticulture Iasi, in order to estimate the requirements cultivation in organic. System research was carried out by specific working methods, using soil samples taken from the plastic tunnels and open field crops of peppers, aubergines, tomatoes and cucumbers. Development of the diagnosis ecopedological matrix have been made on the following indicators: texture, the consistency of wet soil, soil reaction (pH), base saturation (V), humus, nitrogen (Nt), phosphorus (P_{AL}), potassium (K_{AL}), air porosity (PA), synthetic biological indicator (ISB), genetic type of soil. Diagnosis obtained revealed the high potential trophicity of soil for organic vegetable growing: 82-84 rating point for tunnel soils and 64-68 points of field soils.

Stoleru Vasile, Munteanu Neculai, Stoleru Carmen, Vavilov Mihaela (University of Agricultural Sciences and Veterinary Medicine Iași)

COMPARATIVE BEHAVIOUR FOR A NEW SWEET PEPPER ASSORTMENT FOR POLYTUNNEL, IN TG. FRUMOS AREA

STUDIUL COMPARATIV AL UNUI NOU SORTIMENT DE ARDEI GRAS PENTRU SOLAR, ÎN CONDIȚIILE ZONEI TG. FRUMOS

In this paper is presented behaviour of five new sweet pepper cultivars for polytunnels, under production, from a family microfarm in Tg. Frumos area, Iasi county. In the period 2009 - 2010, were conducted observations and biometric measurements for the main agroproductive features, early and total yield, harvest on dynamics etc. The best results were obtained for early production of cultivars Vedrana F1 (50.4 t / ha), Romatca F1 (44.6 t / ha) and Bianca F1 (34.3 t / ha). For total production hybrids was remarked: Vedrana F1 (113.2 t / ha), Romatca F1 (99.4 t / ha) and Belladonna F1 (84.2 t / ha).

Stoleru Vasile¹, Munteanu Neculai¹, Hura Carmen², Perju Cristina² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ² NIPH/ Regional Center of Public Health Iași)

THE STUDY OF ORGANOCHLORINE PESTICIDE RESIDUES IN SOIL AND VEGETABLES IN DIFFERENT GROWING SYSTEMS

STUDIUL REZIDUURILOR DE PESTICIDE ORGANOCLORURATE DIN SOL SI LEGUME, IN DIFERITE SISTEME DE CULTIVARE

In this paper are presented the research results obtained in 2010, in SIECOLEG Project regarding the assessment of some organochlorine pesticide residues (20 active substances), from 80 samples soils and 25 samples vegetables from different growing systems (ecological, in conversion and conventional). In all samples analysed the organochlorine pesticide residues were included in admissible limits (Regulation (EC) nr. 396/2005).

Teliban G. C., Munteanu N., Popa Lorena - Diana, Stoleru V., Tincă Gabriela, Țibulcă L. C. (University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES ON THE PREFERENCES FOR ECOLOGICAL VEGETABLE PRODUCT OF THE CONSUMERS FROM IASI COUNTY

STUDII ASUPRA PREFERINȚELOR PENTRU LEGUMELE ECOLOGICE A CONSUMATORILOR DIN JUDEȚUL IAȘI

The study aims at highlighting the consumers' preferences as determining factors in the promotion and development of the ecologic vegetable production in Iasi County. The results obtained show us that consumers' preferences varied depending on the income class and number of family members of the persons interviewed. This study was made on a sample made of 500 persons by using a questionnaire elaborated according to the norms provided in the specialized literature.

Tincă Gabriela, Munteanu Neculai, Pădurariu Anca, Podaru Maria (University of Agricultural Sciences and Veterinary Medicine Iași)

OPTIMIZATION OF CERTAIN TECHNOLOGICAL MEASURES IN A HYSSOP (*HYSSOPUS OFFICINALIS*) CROP IN THE ECOLOGICAL CONDITIONS

OPTIMIZAREA UNOR VERIGI TEHNOLOGICE LA CULTURA DE ISOP (*HYSSOPUS OFFICINALIS*) ÎN SISTEM ECOLOGIC

The main goal of the study was to optimize cultivation technology by variation of the establishment biological material, plant density and fertilization in the ecological conditions from the Biarom farm (Iași county). The highest fresh yield (10,54 t/ha) and dried one (3,45 t/ha) were obtained by seedling establishment, using a density of about 180 thousands plants/ha and two times fertilization with 500 l solution of Cropmax 0,2%.

Țibulcă Laurențiu Constantin, Munteanu N., Stoleru V., Ghițău Carmen, Teliban G. C. (University of Agricultural Sciences and Veterinary Medicine Iași)

RESULTS ON THE SUSTAINABILITY EVALUATION OF VEGETABLE CULTIVATED SOIL IN THE TÂRGU FRUMOS CONDITION

REZULTATE PRIVIND EVALUAREA SUSTENABILITĂȚII SOLULUI CULTIVAT CU LEGUME ÎN CONDIȚIILE DE LA TÂRGU FRUMOS

The research was carried out in the vegetable ecosystem of Târgu Trumos microregion in 2009 and 2010. The sustainability was assessed according to soil fertility based on the main physical, mechanical and chemical characteristics, expressed by the global agrochemical index (IAGF). Values of IAGF varied between + 31.06 and +41.91 and classified the soil in the +1 group of potential global fertility. The results reveal a high fertility, soils having a pronounced anthropogenic character, wich provides a high sustainability.

Vinătoru Costel¹, Neicu – Teodorescu Eliza¹, Gîtin Liliana² (¹Vegetable Research and Development Station, Plant Breeding Laboratory, Buzău, ² „Dunărea de Jos” University of Galați, Faculty of Food Science and Engineering)

NEW GENOTYPE OF SWEET PEPPER (*CAPSICUM ANNUUM* L.) OBTAINED AT V.R.D.S. BUZĂU
GENOTIPURI NOI DE ARDEI GRAS (*CAPSICUM ANNUUM* L.) OBȚINUTE LA S.C.D.L. BUZĂU

In the Plant Breeding Laboratory from Vegetable Research and Development Station (S.C.D.L.) Buzău researches to obtain new valuable genotypes of sweet pepper in order to correspond to the requirements of the farmers started in 1990. Until now, there were obtained and homologated 3 varieties of sweet pepper and other 2 lines (L₃ and L₅) will be soon homologated.

Vinătoru C.¹, Neicu – Teodorescu Eliza¹, Cucu Elena Ioana² (¹ Vegetable Research and Development Station, Plant Breeding Laboratory, Buzău, ² Academy of Agricultural Sciences and Forestry „Gheorghe Ionescu Șişești”, Horticulture Section, Bucharest)

NEW GENOTYPE OF MELON (*CUCUMIS MELO* L.) OBTAINED AT V.R.D.S. BUZĂU
GENOTIPURI NOI DE PEPENE GALBEN (*CUCUMIS MELO* L.) OBȚINUTE LA S.C.D.L. BUZĂU

The Plant Breeding Laboratory from Vegetable Research and Development Station Buzău, started since 1998 an intensive breeding program for these species, whichever put across until now 10 valuable genotypes with distinctive phenotypical characteristics. The main objective followed in the breeding process was the yield quality especially obtaining genotypes with a particular taste and flavor.

POMICULTURĂ FRUIT GROWING

Brînză Maria, Grădinariu Gică, Morariu Aliona, Ciobotari Gheorghii (University of Agricultural Sciences and Veterinary Medicine Iași)

ASPECTS REGARDING GRAFTING INCOMPATIBILITY ON SOME CULTIVARS OF PLUM
ASPECTE PRIVIND INCOMPATIBILITATEA LA ALTOIRE LA UNELE SOIURI DE PRUN

The mechanism of the incompatibility to grafting is considered to be a result of the mutual influence between scion and rootstock. In order to emphasize the early incompatibility phenomenon, both different biochemical and physiological processes have been studied on the level of the grafting area, as well as different compounds and mineral substances that are transported through the joining area. We performed biochemical analyses regarding the accumulation of nitrogen, soluble glucides and content of gross protein in the grafted combinations. The results showed differences regarding the transport of nitrogen and soluble glucides on the level of the grafting area. Thus, the compatibility between the scion and the rootstock is essential for the production and the use of the carbohydrates and nitrogen reserves which reflects the strength of the plant and the economic efficiency.

Căuleț Raluca, Negrea Roxana, Grădinariu G., Dascălu M., Liliana Șfichi Duke (University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES ON THE DIURNAL CHANGES IN PHOTOSYNTHETIC PROCESS AT SOME FRAGARIA VESCA CULTIVARS

STUDII ASUPRA MODIFICĂRILOR DIURNE ALE PROCESULUI DE FOTOSINTEZA LA UNELE SOIURI DE FRAGARIA VESCA

The aim of this paper is to study diurnal variations of photosynthetic process at two strawberry cultivars (Magic and Real). Monitoring reaction of those two genotypes in different light conditions was made by determination of photosynthesis rate, stomatale conductivity, transpiration rate and intracellular CO₂ amount, using portable photosynthesis system LCI. The results showed modification of photosynthesis rate, during one day, as a bimodal curve with two peaks. Diurnal variation of stomatale conductivity was proportional with transpiration rate, respecting the same model as photosynthetic rate.

Dascălu Marius Constantin, Istrate M., Petre L., Zlati Cristina, Morariu Aliona, Căuleț Raluca (University of Agricultural Sciences and Veterinary Medicine Iași)

NEW SWEET CHERRY VARIETIES BEHAVIOUR IN NORTH EAST ROMANIAN AREA
COMPORTAREA UNOR SOIURI NOI DE CIRES IN CONDITIILE DIN NE ROMANIEI

Hilly area in northeastern Romania is very favorable for the cultivation of sweet cherry, and obtained outstanding achievements in the improvement of this species have made in recent years, significant changes to support assortment. As a result, it requires a thorough study of the new varieties obtained, compared to an equivalent of the international range.

Iordănescu Olimpia Alina, Micu Roxana Elena, Alexa Ersilia, Mihut Casiana (Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara)

STUDY OF THE AGRICULTURAL TECHNOLOGIES IMPACT UPON THE QUALITY INDEX OF JONATHAN APPLES IN CONDITIONS OF TIMISOARA
STUDIUL INFLUENȚEI TEHNOLOGIILOR AGRICOLE ASUPRA INDICILOR CALITATIVI AI FRUCTELOR DE MĂR LA SOIUL JONATHAN IN CONDIȚIILE TIMIȘOAREI

In this paper we studied the impact of the soil maintenance systems upon Jonathan apples' quality and production, cultivated in the western part of Romania. We studied and experimented less pollutant soil maintenance systems, mainly by using plants as green fertilizers. There were eight experimental variants: V1 – black field (2 manual hoeing + 2 mechanical hoeing) – control, V2 – seeding and incorporation in the soil with green manure (white clover), V3 – seeding and incorporation in the soil with green manure (bird's-foot trefoil), V4 – seeding with grass mixture 1 (2 manual hoeing), V5 - seeding with grass mixture 2 (2 manual hoeing), V6 - seeding with grass mixture + mulching, V7 - seeding with grass mixture + Roundup 360 SL (3 l/ha), V8 – mixed field, Roundup 360 SL (3 l/ha) + mechanical hoeing. At the same time, there were determined the physical features of apples (average weight, average diameter and average height) the refractometer dry substance and the sugars content, the total acidity (malic acid), the total minerals, the spectrophotometry vitamin C content and the microelements (Fe, Mn, Zn, Cu) through atomic absorption spectrophotometry (AAS), as well as the production obtained. In conclusion, the experimental variants where we used green manure (Trifolium repens or Lotus corniculatus) gave the highest productions, higher weight of fruits and higher content of sugars and minerals.

Istrate Mihai¹, Cârdei Eugen², Dascălu Marius¹, Ignat C.² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²Research and Development Station for Fruit Tree Growing Iași)

STUDY ON IMPROVING THE TECHNOLOGY OF INTENSIVE CULTURE OF APPLE PLANTATIONS IN THE CLIMATIC CONDITIONS OF NE ROMANIA
STUDIU PRIVIND ÎMBUNĂȚĂȚIREA TEHNOLOGIEI DE CULTURĂ A MĂRULUI ÎN PLANTAȚII INTENSIVE ÎN CONDIȚIILE PEDOClimATICE DIN N-E ROMÂNIEI

For proper application of apple intensive culture technology it is necessary a better knowing of the physiological laws underlying trees growth and fructification, and also their reaction to environmental conditions. Pruning must be applied differently, taking into account trees age, vigour, density and spatial arrangement of the branches, their position, the nature and function of each bearing element. Following the application of foliar fertilization there were achieved increased productions with 7.4 to 12.4 t / ha, depending on the variant of fertilization. The results we obtained concerning the soil system maintenance in intensive apple plantations revealed higher yields when black field was used and also superior quality of fruits and lower maintenance costs for grassed soil variant.

Iurea Elena¹, Grădinariu Gică², Sîrbu Sorina¹, Corneanu Gelu¹, Petre Ludovic¹ (¹Research and Development Station for Fruit Tree Growing Iași, ²University of Agricultural Sciences and Veterinary Medicine Iași)

THE INFLUENCE OF THE CLIMATIC FACTORS ON THE SWEET CHERRY TREE GROWTH AND FRUIT-BEARING IN IAȘI'S CONDITIONS
INFLUENȚA FACTORILOR CLIMATICI ASUPRA CREȘTERII ȘI RODIRII CIREȘULUI ÎN CONDIȚIILE DE LA IAȘI

This paper presents some aspects concerning the influence of the environmental factors from 2008-2010 on the both sweet cherry tree growth and fructification. The agricultural years 2008 (a rainy one) and 2009 (a droughty one) can be described as years with special climatic characteristics which influenced negatively the vegetative growing and the tree production in this area. The meteorological factors (during 3 years) were analyzed, the

fruit's production (kg/tree) on cultivars was calculated, were made measurements and determinations concerning the trunk's cross-sectional area and the length of the annual increases. In terms of 2008 which was an unusual year with an excess of 338,4 l/m² rainfall compared to the multiannual average and of 2009 which was very droughty with a deficiency of 198,6 l/m² compared to the multiannual average, 'Cociu' and 'Ludovic' were noted as the most resistant to drought.

Miculschi Cristina, Grădinariu Gică, Istrate Mihai (University of Agricultural Sciences and Veterinary Medicine Iași)
RASPBERRY FLOWERS TO ORGANOGENESIS IN CLIMATIC CONDITIONS FROM NORTHEASTERN ROMANIA
ORGANOGENEZA FLORALA LA ZMEUR ÎN CONDIȚIILE CLIMATICE DIN NE-UL ROMÂNIEI

Research on the dormant buds of raspberry fruit focused on determining the period of transition from vegetative to reproductive phase and development of floral elements in climatic conditions from northeastern Romania in years 2008, 2009, 2010. The results show remarkable differences from year to year reflecting the cumulative action of climatic factors and hereditary varieties.

Miculschi Cristina, Grădinariu Gică, Niculaua Marius (University of Agricultural Sciences and Veterinary Medicine Iași)
EVALUATION OF THE TOTAL CONTENT OF PHENOLIC COMPOUNDS AND CONTENT OF ANTHOCYANINS FROM LEAVES AND FRUIT OF BLACKCURRANT VARIETIES IN DIFFERENT GROWING TECHNOLOGY.
EVALUAREA CONȚINUTULUI TOTAL DE COMPUȘI FENOLI ȘI ANTOCIANI DIN FRUNZE ȘI FRUCTE DE COACĂZ NEGRU ÎN CONDIȚII DIFERITE DE CULTURĂ

Phenolic compounds from black currant leaves and fruits have considerable health benefits. The present study aimed to establish the influence of culture technology (no irrigation, irrigation, the superabsorbent) on total phenol content of fruit and anthocyanin content. Determination methods have been Folin Ciocalteu total phenol content of fruit and leaves and Cheng and OIV for anthocyanins.

Miculschi Cristina, Iacob Florin (University of Agricultural Sciences and Veterinary Medicine Iași)
RESEARCH REGARDING FLOWERING PHENOLOGY, THE VIABILITY AND GERMINATION CAPACITY OF POLLEN AT SOME SOUR CHERRY
CERCETĂRI PRIVIND FENOFAZA ÎNFLORITULUI, CAPACITATEA DE GERMINARE ȘI VIABILITATEA POLENULUI LA UNELE SOIURI DE VIȘIN

The research was conducted in 2010 and aimed at establishing the biological value of six varieties of cherry pollen: Mocănești, Schattenmorelle, Northstar, Nana, Ilva and early English. The results obtained show that the values of pollen's germination capacity is between 76.3% (Mocănești) and 99.1% (Ilva). Among the varieties studied showed by high levels of pollen germination capacity: Nana, Ilva, Schattenmorelle and early English - varieties that can be used successfully in the breeding work. Viability cherry varieties analyzed ranged between 76.3% (Mocănești) and 99.1% (Ilva), the coefficient of variation indicating a middle variability of the character.

Morariu Aliona, Brânză Maria, Grădinariu Gică (University of Agricultural Sciences and Veterinary Medicine Iași)
TOTAL PROTEIN CONTENT AND SDS-PAGE AT COMPATIBLE AND INCOMPATIBLE GRAFT COMBINATION OF PRUNUS SP.
CONȚINUTUL ÎN PROTEINE TOTALE ȘI SEPARAREA POLIPEPTIDELOR PRIN SDS PAGE LA COMBINAȚII COMPATIBILE ȘI INCOMPATIBILE DE PRUN

This study was conducted to investigate the effects of various rootstocks on the total soluble protein content and polypeptide pattern at plum cultivars with different compatibility with Prunus cerasifera rootstock. Bark samples were collected from 5 year-old plum scions (Stanley, Centenar, Tuleu timpuriu and Gras ameliorat) grafted on Prunus cerasifera and Prunus domestica rootstocks. Total soluble protein contents were determined using the Bradford assay. Protein profiles were determined using SDS-PAGE. We can observe deferens on total protein content on the same cultivars grafted on different scions. However, no linear correlation was detected between total protein content and graft compatibility. In SDS PAGE, the protein profiles of the scions were in general similar but some protein bands determined in compatible scions was faintly observed in an incompatible scions.

Pandelea Alin, Panea Teodora, Brânză Maria, Căuleț Raluca, Grădinariu Gică (University of Agricultural Sciences and Veterinary Medicine Iași)
INFLUENCE OF SOME ECOLOGICAL PRODUCTS ON ANATOMO-MORPHOLOGICAL CHANGES IN GRAFTING COALESCENCE AT PEAR AND PLUM FRUIT TREES
EFECTUL UNOR PREPARATE ECOLOGICE ASUPRA MODIFICĂRILOR ANATOMO-MORFOLOGICE ÎN PROCESUL DE PRINDERE LA ALTOIRE LA SPECIILE PĂR ȘI PRUN

The aim of this paper is to make in evidence the effect of some ecological products on grafting success and anatomo - morphological changes which appear during the coalescence 9Laboratory belonging U.S.A.M.V. Iasi, in 2008-2010. Rootstoks of pear (Pyrus sativa and Cydonia oblonga) and plum (Prunus

domestica and *Prunus cerasifera*) were grafted with cultivars with different compatibility degrees. During the grafting process treatments with an ecological product (offered by I.C.D.B. "Bios" Cluj) P1 were made. Microscopically section through grafted point showed a stimulation of processes of calusogenesis and tissue differentiation at treated variants.

Pașcu Dragoș Daniil, Ciobotari Gheorghii, Grădinariu Gică (University of Agricultural Sciences and Veterinary Medicine Iași)

ASPECTS CONCERNING THE QUALITY OF SOME CHERRY TREE FRUITS RIPPED IN THE CLIMATIC CONDITIONS OF 2010 FROM NORTH-EASTERN ROMANIA

INVESTIGAREA CALITĂȚII FRUCTELOR UNOR SOIURI DE CIREȘ ÎN CONDIȚIILE CLIMATICE ALE ANULUI 2010 DIN ZONA DE NORD-EST A ROMÂNIEI

Cherry fruit quality is given by several indicators (color, firmness, sugars, etc.). In this paper we determined the soluble solid contents, total acidity and soluble carbohydrates of 16 cultivars of sweet cherry fruits with different ripening periods which are intended for both fresh consumption and food industry. Our results may be used as a suitability indicator of the North-East Romanian area for a large-scale cultivation of these varieties, since some are new cultivars approved in the last 5 – 6 years and others imported cultivars, which are not found in big orchards in this region. The soluble carbohydrates quantity has been determined to be between 12,69 - 19,58% and the acidity of the fruits ranged between 4,8 - 8,64 g/L (expressed in citric acid).

Ștefan Floriana Maria¹, Baciu A.², Giorgota Andreea Oana¹ (¹University of Craiova, Faculty of Horticulture, ²Research and Development Station for Fruit Tree Growing Vâlcea)

RESEARCHES REGARDING THE STRUCTURE AND THE FORMING POTENTIAL OF FLOWERING AND VEGETATIVE BUD ON THE ANNUAL BRANCHES AT DIFFERENT SPECIES OF THE GENUS *PRUNUS*
CERCETĂRI PRIVIND STRUCTURA ȘI POTENȚIALUL DE FORMARE A MUGURILOR FLORIFERI ȘI VEGETATIVI PE RAMURILE ANUALE LA DIFERITE SPECII DIN GENUL *PRUNUS*

*The researches made on some varieties of *P.domestica* L., *P.armeniaca* L. and *P.persica* L. Borsch. between 2009 and 2011 at University of Craiova SCDP Valcea, have shown a marked variability regarding the number of bud groups and the number of flowering and vegetative buds situated on the annual branches. In case of the varieties from the same species, it appears that these characters differ from one variety to another, and coefficients of variation are typically below 30%, which demonstrates that the variability is generally low, compared to the variability among species. If we consider the values of these characters, taking into account the average achieved by species, we note that the values of coefficients of variation on the number of flowering and vegetative buds, generally exceed 30% at *P.armeniaca* L. and *P.domestica* L., demonstrating a wide variability existing within these species. At *P.persica* L. Borsch., reported us at different groups of varieties, coefficients of variation are medium in all 3 characters (between 10-20%), reflecting a uniformity of the number of buds.*

Zlati Cristina, Pandealea Alin Vasile, Iacob Florin, Grădinariu Gică, Istrate Mihai (University of Agricultural Sciences and Veterinary Medicine Iași)

PRODUCTION TECHNOLOGY OF PEACH PLANTING MATERIAL IN RADUCANENI, IASI NURSERY
PRODUCEREA MATERIALULUI SADITOR LA PIERSIC ÎN CADRUL PEPINIEREI RADUCANENI, IASI

The production of fruit planting material has had a long tradition in Romania. Over the past decades, numerous nurseries have intensively been producing planting material, not only producing for domestic growers but also for export. But, in general, most stone fruit species are grafted onto generative rootstocks and, in some cases, vegetative rootstocks but does not give satisfactory results, and planting material has lower quality. Lack of good quality planting material is one of the factors that limits the expansion of plantations. The main purpose of the research was to define the optimal technological parameters for the nursery, in order to improve production technology of peach and nectarine planting material in the specific conditions of Iași, Răducăneni area. Studies were conducted at Vinifruit-Copou company, Răducăneni nursery, during 2008-2010. Cardinal peach variety and Cora nectarine variety was used, grafted on peach seedling and mirobolan rootstocks. There grafting method used was T budding.

FLORICULTURĂ, ARBORICULTURĂ ORNAMENTALĂ FLORICULTURE, ORNAMENTAL ARBORICULTURE

Chelariu Elena-Liliana, Draghia Lucia (University of Agricultural Sciences and Veterinary Medicine Iași)
SPECIES FROM SPONTANEOUS FLORA OF TULCEA COUNTY, WITH ORNAMENTAL VALUE
SPECII DIN FLORA SPONTANĂ A JUDEȚULUI TULCEA, CU VALOARE ORNAMENTALĂ

*The current paper presents five species with ornamental value identified in the spontaneous flora of Tulcea County, as follows *Allium flavum*, *Allium saxatile*, *Echinops ruthenicus*, *Silene compacta*, *Silene supina*. Identification and gathering of the species was effectuated in the vegetation period of 2010 (May-October),*

from Turcoaia and Babadag localities, Tulcea County. To study these taxons in crop conditions were established experimental plots and the biologic material was represented by seeds, bulbs or whole plants, function of specie. Taxonomic nomenclature and botanic description was in according with the one proposed by Ciocârlan V. and Flora Europaea.

Chelariu Elena-Liliana, Draghia Lucia (University of Agricultural Sciences and Veterinary Medicine Iași)
ORNAMENTAL GRASSES WITH CULTIVATION POTENTIAL IN THE PEDO-CLIMATIC CONDITIONS OF IAȘI COUNTY
IERBURI ORNAMENTALE CU POSIBILITATE DE CULTIVARE ÎN CONDIȚIILE PEDOClimATICE DIN JUDEȚUL IAȘI

Ornamental grasses are less used in the landscape design from the NE area of Romania. In the current paper is presented an assortment of ornamental grasses cultivated in other areas, but which due to the ecologic and technologic demands could be cultivated in Romania. NE area of Romania, in according with Hardiness Zone Map of Europe, is in the fifth zone of rusticity with minimum annual temperatures between -29°C and -23°C.

Draghia Lucia, Chelariu Elena-Liliana (University of Agricultural Sciences and Veterinary Medicine Iași)
GERMPLASM SOURCES FROM SPONTANEOUS FLORA OF CONSTANȚA COUNTY
SURSE DE GERMOPLASMĂ DIN FLORA SPONTANĂ A JUDEȚULUI CONSTANȚA

Studies regarding cultivation potential for ornamental purposes of the spontaneous flora from Romania were made in different areas of the country. The present paper shows some species with ornamental value identified in the spontaneous flora of Constanța County. Identification and gathering of the species was effectuated in 2010, during vegetation period (May-October). Were studied more species of plants but, from all of them, are presented only the ones with importance for landscape design, with the possibility of their usage in different landscape compositions: Statice latifolia, Jasminum fruticans, Teucrium polium, Sedum urvillei, Sempervivum ruthenicus, Sedum maximum. Was used the botanical description and taxonomic nomenclature done by V. Ciocârlan and Flora Europaea. From all these taxons was gathered biologic material (seeds or whole plants) and with this were established the experimental fields for a study in crop conditions. Adoption of different multiplication methods and recommendations regarding usage modalities are based on biological particularities and ecologic demands imposed by the native area of these plants.

Fălticeanu Marcela¹, Draghia Lucia², Cristea Tina Oana¹, Călin Maria¹, Ambăruș Silviu¹, Brezeanu Creola¹, Brezeanu Petre Marian¹, Avasiloei Dan Ioan² (¹Vegetable Research and Development Station Bacau, ²University of Agricultural Sciences and Veterinary Medicine Iași)

RESEARCH REGARDS THE USE SPONTANEOUS FOR ENRICHMENT ASSORTMENT ORNAMENTAL PLANTS
CERCETARI PRIVIND FOLOSIREA FLOREI SPONTANE CA SURSĂ DE ÎMBOGĂTIRE A SORTIMENTULUI DE PLANTE ORNAMENTALE

In the period 2008 - 2010 were studied the following species of wild plants: Anthemis tinctoria, Artemisia annua, Bupleurum rotundifolium, Dianthus giganteus, Hypericum androsaemum, Malva sylvestris, Scabiosa columbaria, Trifolium repens, Xeranthemum cylindraceum. There were performed the following phenological observations on the collected species: planting dates, sunrise, plant early flowering, flowering period and seed physiological maturity. There were made biometric measurements and observations of plant height, diameter of the bush, the port, the general appearance of the plant, colour of herb and flower, the richer of simultaneous flowering plant, long flowering, early plant, flower size, floral stems, etc. There were selected decorative and resistant plants at climate accidents, attack pathogens and pests.

Pop Mihai Radu¹, Sand Camelia¹, Bobiț Dana², Antofie Mihaela¹, Barbu H.¹, Pavel Petronela-Bianca¹, Ciortea Gligor¹, Leon Muntean³, Mircea Savatti³ (¹"Lucian Blaga" University of Sibiu, ²National Institute of Research and Development for Potato and Sugar Beet Brasov, Brașov, ³University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca)

ESTABLISHMENT MODE AND TIME OF CUTTING OF LAVENDER PLANTS FOR REGENERATION TO OBTAIN THE BEST FEATURES OF DECORATIVE AND VOLATILE OIL PRODUCTION
STABILIREA MODULUI ȘI A EPOCII DE TĂIERE PENTRU REGENERAREA PLANTELOR DE LAVANDĂ ÎN VEDEREA OBTINERII DE BUNE CARACTERISTICI DECORATIVE ȘI DE PRODUCȚIE DE ULEI VOLATIL

Lavandula angustifolia Mill. species has a wide range of uses, bluish-purple flowers clustered in inflorescences spiciforme assigning decorative capacity, while being used as raw material for extraction of essential oil used in various pharmaceutical and cosmetic preparations. The technology for growing lavender, cutting to regenerate plants can influence major inflorescences height, decorative and production capacity of oil. For this reason variants exposed to experimental research study on the optimal timing for such operations and the extent of efficiency made to get both for those who want to use this species for ornamental purposes and for those who seek obtain high yields of oil. In this respect, observations and measurements were made on the number of vertical inflorescence, inflorescence length, inflorescence mass harvested and the amount of volatile oil.

Bernardis Roberto Renato (University of Agricultural Sciences and Veterinary Medicine Iași)

ASPECTS REGARDING THE ORNAMENTAL VALUE OF SOME TEAHIBRIDA AND FLORIBUNDA ROSE VARIETIES FROM „TUDOR NECULAI” NURSERY COLLECTION - IASI COUNTY
OBSERVAȚII PRIVIND VALOAREA ORNAMENTALĂ A UNOR SOIURI DE TRANDAFIRI DIN CLASA TEAHIBRIDA ȘI CLASA FLORIBUNDA ÎNTÂLNITE ÎN PEPINIERA „TUDOR NECULAI” IAȘI

The paper presents aspects regarding the ornamental value of some Tea hibrida and Floribunda rose varieties, from “Tudor Neculai” nursery collection, cultivated in Iasi region conditions. The observations regarded six rose varieties, three from Teahibrida class: Burgund, Crimson Glory and Grand Prix; and three from Floribunda class: Betty Prior, Foc de Tabără and Rumba. There were studied six features defining the decorative value of these varieties, respectively: the foliage, the diseases resistance, the flowering intensity, the form of the flower, the colour of the petals and the odour.

Bernardis Roberto Renato (University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES ON THE PHENOLOGY OF COTONEASTER HORIZONTALIS SPECIE, IN THE CONDITIONS OF "TUDOR NECULAI" NURSERY, IASI REGION
STUDII FENOLOGICE ASUPRA SPECIEI COTONEASTER HORIZONTALIS ÎN CONDIȚIILE PEPINIEREI „TUDOR NECULAI” IAȘI

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

2.2. VITICULTURĂ, OENOLOGIE, TEHNOLOGIA PRODUSELOR HORTICOLE

2.2. VITICULTURE, OENOLOGY, POSTHARVEST TECHNOLOGY OF HORTICULTURAL PRODUCTS

Moderatori:

Prof. univ. dr. **Liliana ROTARU**
Conf. univ. dr. **Mihai MUSTEA**
C.S. I dr. **Doina DAMIAN**
C.S. I dr. **Cristinel V. ZĂNOAGĂ**

Secretari:

Şef lucr. dr. **Liviu IRIMIA**
Dr. **Cintia COLIBABA**
Drd. **Cristina MIHALACHE**



LUCRARI PREZENTATE ORAL

ORAL PRESENTATIONS

VITICULTURA

VITICULTURE

Alexandrov E.¹, B. Gaina² (¹Moldavian Academy of Sciences, Botanical Garden, ² National Institute of Vine and Wine, Republic of Moldova)

PHYSICO-CHEMICAL PROPERTIES OF DISTANT HYBRIDS BERRIES VINE OF (*V. VINIFERA* L. x *V. ROTUNDIFOLIA* MICHX.) of the IV generation.

PARTICULARITĂȚILE FIZICO-CHIMICE A BACELOR HIBRIZILOR DISTANȚI DE VIȚĂ DE VIE (*V. VINIFERA* L. x *V. ROTUNDIFOLIA* MICHX.) DE F₄.

*Physico-chemical analysis carried out on berries vine distant hybrids (*V. vinifera* L. x *V. rotundifolia* Michx.) of the IV generation showed that the concentration of phenolic substances, resveratrol, pectin, etc. is relatively higher than in the vine varieties of crop (*V. vinifera* L.). However, forest vine (*Vitis sylvestris* Gmel.), has concentrations of phenolic substances, resveratrol, pectin etc. much more than distant hybrids of vine (*V. vinifera* L. x *V. rotundifolia* Michx.) of the IV generation.*

Călugăr Anamaria¹, Pop Nastasia¹, Iliescu Maria², Babes Anca¹, Bunea C.¹ (¹University of Agricultural Sciences and Veterinary Medicine, Cluj Napoca, ² Vein and Wine Research and Development Station Blaj)

STUDY ON THE PRECOCITY INDEXES DURING THE ANNUAL GROWTH CYCLE OF GRAPEVINE, IN BLAJ WINE-GROWING CENTER, TÂRNAVE VINEYARD

STUDIU ASUPRA INDICILOR DE PRECOCITATE AI CICLULUI VEGETIV IN CENTRUL VITICOL BLAJ, PODGORIA TÂRNAVE

*In the experience placed at SCDDV Blaj has been pursued the unfolding of the main phenophases at the grape varieties: Astra, Blasius, Selena and Fetească regală, in climate conditions of the years 2009 and 2010. Precocity index of the vegetation cycle was calculated using Barbeau's formula (1998). In the two years, to the varieties: Astra, Blasius and Selena the vegetation start was earlier than at Fetească regală, variety enshrined in Târnavă Vineyard. It was established a close link between the vegetation phases and the amount of useful temperatures. Precocity of vegetation cycle was influenced by the flowering moment. On average, in 2010 it was found a precocity of vegetative cycle (*iPcy* = 100.00) compared to 2009 (*iPcy* = 99.98), although the climatic condition in 2009 were more favourable for vine culture than 2010. Between precocity indexes of veraison and precocity of vegetative cycle was established in 2009 a significant positive correlation (*r* = 0.98*) and a negative nesemnificativă correlation in 2010 (*r* = - 0.93).*

Corbean D.¹, Pop Nastasia², Babeş Anca², Călugăr Anamaria², Moldovan S.D.³ (¹S.C. Jidvei S.R.L., ²University of Agricultural Sciences and Veterinary Medicine Cluj Napoca, ³ Vein and Wine Research and Development Station Blaj)

THE INFLUENCE OF PARRAFIN TYPE ON MAIN CHARACTERS REGARDING GRAFTED VINES QUALITY, AT S.C. JIDVEI SRL, TÂRNAVE VINEYARD

INFLUENȚA TIPULUI DE PARAFINĂ ASUPRA PRINCIPALELOR CARACTERE URMĂRITE PRIVIND CALITATEA VIȚELOR ALTOITE LA S.C. JIDVEI S.R.L., PODGORIA TÂRNAVE

Experience was held at S.C. Jidvei S.R.L., using grape varieties Muscat Ottonel and Fetească regală grafted on SO4 rootstock, clone 762. After grafting, cuttings were dipped in three types of paraffin wax: standard, with 8-Chinolinol and with Oxyquinoleină. Using paraffin 8-Chinolinol the variety Fetească regală was obtained the best callusing (3.8), the largest width of the callus (2.62), highest callusing percentage (93.0), best percentage of bud graft starting (82.5) and the best rooting (rooting degree, root diameter).

Cuttings buds paraffined with 8-Chinolinol started in vegetation after 7 days after forcing beginning, they needed the shortest forcing period (12 days) and have obtained the best yield of grafted vines (82.8%). At the variants where has used the standard paraffin, studied parameters recorded the worst results.

Dobrei Alin Ionel, Mălăescu Mihaela, Ghiță Alina, Drăgunescu Anca, Sala Florin (Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara)

RESEARCHES ON HIGH RECOVERY, THROUGH APPROPRIATE TECHNOLOGY OF LOCAL VARIETIES AND BIOTYPES FROM THE WESTERN PART OF ROMANIA.

CERCETĂRI PRIVIND VALORIFICAREA SUPERIOARĂ, PRINTR-O TEHNOLOGIE ADECVATĂ A UNOR SOIURI ȘI BIOTIPURI LOCALE DIN PARTEA DE VEST A ROMANIEI

The researches was conducted in 2008-2010 and aimed over 100 local varieties and biotypes from western part of Romania, of which we retained as being valuable for research 10 biotypes: : Mustoasă de Măderat, Negru de Mâasca, Frumoasă albă de Paulian, Coadă de Vulpe, Aromat alb de Silagiu, Frumoasă albă de Măderat, Alb verziu de Ghiroda, Pătrujarcă de Buziaș, Fragă albă de Silagiu, Ruginiu de Silagiu. We made observations and measurements on these biotypes cultivated both a minimal technology as well by a technology elaborated. Were analyzed in comparison with a witness variety (Chasselas dore): buds viability, production per vine and per hectare, average weight of a bunch, resistance to diseases and pests, sugar content and acidity of the grapes. The results revealed suitability of these varieties for sustainable viticulture, and quantitative and qualitative leap realized in the case applying of the performance technology.

Irimia Liviu¹, Patriche C.V.² (¹ University of Agricultural Sciences and Veterinary Medicine Iași, ² Iași Filial of Romanian Academy, Geography Staff)

THE DISTRIBUTION OF THE ECOLOGICAL SUITABILITY FOR GRAPE GROWING IN HUȘI WINE GROWING GENTRE, DEPENDING ON THE LOCAL VARIATION OF THE GEOMORPHOLOGICAL FACTORS

DISTRIBUȚIA FAVORABILITĂȚII ECOLOGICE PENTRU CULTURA VIȚEI DE VIE ÎN CENTRUL VITICOL HUȘI, ÎN FUNCȚIE DE VARIAȚIA LOCALĂ A FACTORILOR GEOMORFOLOGICI

The paper presents the results of a study regarding the distribution of the geomorphologic factors' suitability for grape growing in Husi wine-growing centre - Husi vineyard. The research is based on a complex methodology that uses the satellite images, the GIS technology, the ecological evaluation system of the vineyards and the cartographic technique. The results shows that, regarding the geomorphologic suitability for grape growing, 48.1% of the Husi wine-growing centre area has ecological potential for white table wines, sparkling wines and distilled from wine, 35.8% for high quality white wines and red table wines, and 14.3% for high quality red wines and aromatic wines.

Petrea Gabriela, Liliana Rotaru (University of Agricultural Sciences and Veterinary Medicine Iași)

PHYLOGENETIC RELATION OF THE ROMANIAN NATIVE VARIETIES OF GRAPES BY DNA ANALYSIS

ÎNRUDIREA FILOGENETICĂ A SOIURILOR AUTOHTONE ROMÂNEȘTI DE VIȚĂ DE VIE PRIN ANALIZA ADN

Deoxyribonucleic acid was analysed using the molecular markers-RAPD Random Amplified Polymorphic DNA from 12 indigenous varieties of grapes. For extraction of DNA from young leaves, the method obtained by Lodhi et al., (1994), amended by Pop R., (2004) was used. Extracted DNA was amplified by 24 primers, the agarose gel bands obtained were visualized in UV. With the help of Jaccard coefficient a dendrogram was drawn show the phylogenetic relation of the studied grape varieties.

Savin Gheorghe (Scientific-Practical Institute for Horticulture and Technologies, Republic of Moldova)

TABLE GRAPEVINE ASSORTMENT IN REPUBLIC OF MOLDOVA: ACTUAL SITUATION AND PERSPECTIVES FOR AMELIORATION

SORTIMENTUL DE STRUGURI PENTRU MASA IN REPUBLICA MOLDOVA: SITUATIA ACTUALA SI PERSPECTIVE DE AMELIORARE

The analysis of assortment of table grapevine, preponderantly created in the Republic of Moldova is presented and the perspective of potential for the export of grapes is examined. A distinctive feature of these varieties, obtained in the result of breeding program initiated in the seventies of preceding century, is relative or increased resistance to unfavorable factors of environment, inclusive to winter conditions characteristic for the viticulture zone. For future harmonization of actual assortment are proposed new varieties, inclusive seedless, destined to complete the insufficiently represented groups of maturity of berry, especially with colored berries for extra-early and early groups, but also the later group with grapes long-term storage. At the same time is ascertained creation and presence on the market of impressive diversity of the table grape varieties originated from Ukraine and Russia, also with increased resistance to unfavorable factors, the result of collaboration between scientific institutions and private sector.

Țârdea Constantin (University of Agricultural Sciences and Veterinary Medicine Iași)

UN NOU INDICE ECOLOGIC ÎN VITICULTURĂ INTITULAT TIMPUL BIOLOGIC VITICOL PENTRU ZONAREA SOIURILOR DE VIȚĂ DE VIE

Vîta de vie se caracterizează printr-un timp biologic, în care își desfășoară bioniturile/fenofazele de vegetație înscrise în genomul fiecărui soi. Timpul biologic al soiurilor trebuie să se încadreze în oferta ecologică a podgoriei. Plecând de la aceste considerente a fost formulat un nou indice ecologic în Viticultură, intitulat timpul biologic viticol. Relația de calcul a indicelui și interpretarea lui este redată în lucrare.

OENOLOGIE OENOLOGY

Adajuc Victoria (Scientific-Practical Institute for Horticulture and Technologies, Republic of Moldova)
THE STUDY OF BIOGENIC AMINES IN THE SELECTION OF YEAST STRAINS FOR SPARKLING WINE PRODUCTION.
STUDIUL AMINELOR BIOGENE ÎN SELECȚIA SUȘELOR DE LEVURI PENTRU PRODUCEREA VINURILOR SPUMANTE

*From the complex oenological and morpho-biological indices such as sustainability, biomass, tolerance to different temperatures, quality of wine and other physiological properties of yeast strains to produce small amounts of biogenic amines in the world is currently placed among the highest place in the hygienic and biological field. Usage of this index in the selection of yeast strains perspectives for wine can be obtained different types of wines of high quality and hygienic condition. For this purpose, yeast with advanced microbiological and physiological properties of the genus *Saccharomyces* of the Collection branch of Microorganisms for the oenological laboratory industry "Sparkling and Microbiology": no. 1, 11, 29, 47, 81, were used in the fermentation of the grape variety Chardonnay grape and the secondary fermentation in the synthesis of biogenic amines was assessed.*

Barsova O (Scientific-Practical Institute for Horticulture and Technologies, Republic of Moldova)
COMPARATIVE APPRECIATION OF VARIOUS TECHNOLOGICAL PROCESSES AND THE INFLUENCE OF ENZYMES ON THE PARAMETERS OF THE FOAMING OF ROSÉ RAW MATERIAL FOR ROSÉ SPARKLING WINES
APRECIEREA COMPARATIVĂ A DIFERITOR PROCEDEE TEHNOLOGICE ȘI INFLUENȚA ENZIMELOR ASUPRA PARAMETRILOR DE SPUMARE ALE VINURILE MATERIE PRIMĂ ROZE PENTRU VINURILE SPUMANTE ROZE

In the given work are studied the different technological regimes of processing of red grapes Cabernet Sauvignon and the influence of enzymes on the physicochemical and foaming properties of rosé raw material for rosé sparkling wines.

Balanuță A., Musteață G., Gherciu- Musteață L. (Technical University of Moldova, Republic of Moldova)
EVOLUTION OF POLIPHENOLIC COMPLEX OF WINES DURING AGING IN CONTACT WITH OAK WOOD
EVOLUȚIA COMPLEXULUI POLIFENOLIC AL VINURILOR LA MATURAREA LOR ÎN CONTACT CU LEMNUL DE STEJAR

The study of phisico-chemical process at accelerated aging by modern procedure in a white and red wines proves that maintaining in a contact wiht oak chips the wines evolves more quickly that modifications of phenolic compounds and organoleptical characteristics remarks. It was determine the optimum lenth of wine maintaining on chips depending on phisical-chemical size studied were: summary of poliphenolic compounds, the concentration of total anthocyan in red wines, the chromatic characteristics, and the sensori profile.

Galan Cătălin, Marica Mariana, Eremia Florentina (¹Bioterra University Bucharest)
OVERALL STRATEGIES RECOMMENDED OF THE DEVELOPMENT ROMANIAN VITICULTURE-WINE SECTOR IN THE EUROPEAN CRISIS CONDITIONS OF OVERPRODUCTION
STRATEGII GLOBALE DE DEZVOLTARE RECOMANDATE SECTORULUI VITI-VINICOL ROMÂNESC ÎN CONDIȚIILE CRIZEI EUROPENE DE SUPRAPRODUCȚIE

The study examines in depth the environment economic and legislative current wine market, both nationally and globally. All factors that can influence directly or indirectly sectoral policies for the development of trade in wine and the main macro-economic indicators are all in the past review. All economic, social and political mechanisms, which may cause or even impose certain development trends at the national and international are also dismantled.

Lăcureanu Florin-Gabriel, Cotea V. Valeriu, Colibaba Lucia Cintia, Niculaua Marius, Nechita Bogdan (University of Agricultural Sciences and Veterinary Medicine Iași)
PHENOLIC COMPOUNDS IN BUSUIOACA DE BOHOTIN WINES OBTAINED THROUGH DIFFERENT MACERATION TECHNOLOGIES
COMPUSI FENOLICI ÎN VINURILE DE BUSUIOACA DE BOHOTIN OBTINUTE PRIN DIVERSE TEHNOLOGII DE MACERARE

The phenolic compounds in local origin aromatic Romanian wines represent an insufficiently researched domain. This study wants to identify chromatic substances in Busuioaca de Bohotin wines from Pietroasa vineyard, in the center of Romania. During 2009 harvest, different maceration technologies were applied to Busuioaca de Bohotin grapes like: classical maceration, cryo-maceration, ultrasound maceration and microwave maceration. Different analytic methods (HPLC, index Flin-Ciocalteu, adsorbancy) were used to determine individual chromatic compounds. A rose wine, Busuioaca de Bohotin has different chromatic compounds that form the colour that has long been described as onion skin. At the same time, the variation of these compounds according to the used maceration method is described.

Maican Edmond, Aurelia Tudorache, Erol Murad, Mihaela Florentina David (Polytechnic University Bucharest)

WINE BLENDING ASSISTED BY EXPERT SYSTEM
CUPAJAREA VINURILOR ASISTATA DE SISTEM EXPERT

An expert system has been made in order to assist the process of wines blending, using Monte Carlo methods for searching and selecting of those recipes that meet the requirements for obtaining the desired blending, called standard - an assortment of wine with well-defined characteristics. To verify and validate the system there has been developed an original stochastic model of the blending components properties. It has been allocated the standard unit value for each property. The properties of the recipes selected by the expert system are enclosed between the standard tolerances. Setting these tolerances is done interactively with the expert oenologist, correlated with the actual conditions of blending. Tests have shown the efficiency in selecting the optimum blending recipe both by high-speed search and by using of the optimization criteria adapted to the restrictions inherent to the actual situation of blending with well-defined natural ingredients. These criteria are interactively improved, by means of the oenologist expert.

Moraru Ioan, Niculaua Marius, Cotea V.Valeriu, Măluțan G., Georgescu Ovidiu (University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES ON THE QUANTITY OF TANNINS IN SOME RED WINES OBTAINED THROUGH DIFFERENT MACERATION-FERMENTATION TECHNOLOGIES IN IASI VINEYARD
STUDII ASUPRA CANTITĂȚII DE TANINURI LA UNELE VINURI ROȘII DIN PODGORIA IAȘI OBȚINUTE PRIN DIVERSE TEHNOLOGII DE MACERARE-FERMENTARE

The study has analysed wines produced from four black grape varieties (Cabernet Sauvignon, Merlot, Fetească neagră and Băbească neagră) from Iași vineyard. The wines were obtained by applying different maceration-fermentation techniques: classical maceration-fermentation, ROTO-maceration, thermo-maceration and microwave maceration. The obtained wines were analysed after the second racking, in order to evaluate the tannins level through several spectral analysis methods. At the same time, parameters specific for red wines were determined: total polyphenolic index, Folin-Ciocalteu index, permanganate index, pH and total anthocyanins quantity. The results showed the presence of higher quantities of tannins in the wines obtained by thermo-maceration and microwave maceration versus wine samples obtained through ROTO-maceration and classical maceration-fermentation.

Musteață G.¹, Balanuță A.¹, Gherciu-Musteata L.¹, Sirghi C.², Pascovskii.D.² (¹ Technical University of Moldova, Republic of Moldova, ²S.A. Romanesti)

INTENSIFICATION OF THE PROCESS EXTRACTION DURING RED WINE PRODUCING TECHNOLOGIE
INTENSIFICAREA PROCESULUI DE EXTRACTIE LA PRODUCEREA VINURILOR ROSII

The paper includes the results of comparative analysis of two red wines producing technologies: conventional fermentation, with manual cap punching and delestage. The results have shown that the application of delestage increase significantly the speed of alcoholic fermentation up to 1.35 times, produce the growth of alcohol percent with 0,2 % vol. The extraction of phenolic compounds was 29 % higher in delestage wines, including anthocyanins – 11,5%. Sensory analysis has shown that there has been an essential improvement of the sensory characteristics of experimental wines. Thanks to diminish the negative effect of harsh tannins from seeds and condensation reactions of phenolic compounds, the delestage wines are more balanced in flavor. As the extraction of volatile phenolic compounds and esters has grown, the aroma profile became more intense and complex. The delestage can be recommended as an effective alternative maceration method, which can be used in red young wines production in the conditions of Republic of Moldova.

Vacarciuc Liviu, Mihai Sobor (Agrarian State University of Moldova, Chișinău, Republic of Moldova)

MASS EXCHANGE IN SOLID-LIQUID PHASE IN THE RECOVERY OF FRESH GRAPE MARC
SCHIMBUL DE MASA IN FAZA SOLID-LICHID LA VALORIFICAREA TESCOVINEI PROASPETE DE STRUGURI

Referring to the wine industry which is in crisis, not only in fact of reducing the area of raw materials, but also for adjuvant components and energy price rises, now is the rational development strategies for processing secondary products - grape marc waste. For the several years in the Republic of Moldova is studying the factors influencing the remaining solid phase diffusion process from pressing the grapes and

extraction kinetics of diffusion juice to determine optimal system parameters: time, temperature, phase ratio, phase speed, extracting the number of polling, the degree of pressing, etc. Analysis of mass exchange process in laboratory extraction apparatus and production through mathematical models, calculation of diffusion coefficients (D) at 30-70°C was done in dependence on the phases report (consumed), of the criterion of biomass (B_i) and concentration of dry substances (Z_{su}). These data were used like a support points for development of new extraction installation in continuous flow of fresh sweet marc directly in raw material processing season, is characterized with minimal losses.

Vacarciuc Liviu, Mihai Sobor (Agrarian State University of Moldova, Chişinău, Republic of Moldova)
 INSTALLATIONS FOR THE EXTRACTION OF GRAPE MARC IN INTENSIVELY AND ATTENUATED REGIME
 INSTALATII DE EXTRACTIE A TESCOVINEI DE STRUGURI IN REGIM INTENSIV SI ATENUAT

The main waste in primary winemaking are the grape marc and used yeast in proportion of 15% and 5% for each tonne of processed grapes, in reducing the production cost for having a competitive freight we take all necessary measures to fully capitalize on these wastes. Old storage procedures are not viable: high volume of work, loss of alcohol and its vinegaring at the contact with air. More efficient is technological scheme of extraction of the must from solid phase with continue diffusion. The paper analyzes the existing construction of extraction facilities and disadvantages, is determined kinetics of the process and established the optimal composition of obtained diffusion juice, so technical parameters were determined for developing four-speed extraction machine. Practical test facility at the Moldovan companies revealed they both efficient operation of the wine factories and at the juice conservation and comprehensive utilization of waste recovery and has prospects in any field.

Vasile Ancuța¹, Cotea V.Valeriu¹, Savin C.², Paşa Rodica², Nechita Bogdan¹, Niculaua Marius¹ (¹University of Agricultural Sciences and Veterinary Medicine Iaşi, ²Vine and Wine Research and Development Station Iaşi)
 PRELIMINARY CHARACTERIZATION OF POLYPHENOLIC EXTRACTS FROM GRAPE SEEDS
 CARACTERIZAREA PRELIMINARĂ A UNOR EXTRACTE POLIFENOLICE OBȚINUTE DIN SEMINȚE DE STRUGURI

The capacity of grapevine varieties to assemble various types of polyphenols represented a rather less studied segment of study which is currently raising more interest. These compounds may be found especially in grape skins and seeds from where they are transmitted to must and wine by macerating processes. Studies on polyphenols from grapes proved to be on the one hand essential for assessing grapevine varieties' oenological potential, and on the other hand very important in the evaluation of their beneficial effects on maintaining the metabolic balance and the health condition of the human body. In this paper we make a preliminary presentation and characterization of polyphenolic extracts from the grape seeds of seven grapevine varieties, among which four national varieties (Fetească neagră, Băbească neagră, Arcaş, Negru de Drăgăşani), two international ones Cabernet Sauvignon, Merlot) and the disease resistant Chambourcine variety.

TEHNOLOGIA PRODUSELOR HORTICOLE POSTHARVEST TECHNOLOGY OF HORTICULTURAL PRODUCTS

Andrei Corina (University of Agricultural Sciences and Veterinary Medicine Iaşi)
 STUDIES CONCERNING THE WAYS OF CONTAMINATION HORTICULTURAL PRODUCTS RAW MATERIALS FOR INDUSTRIALIZATION OF VEGETABLES AND FRUITS
 STUDII PRIVIND CĂILE DE CONTAMINARE A PRODUSELOR HORTICOLE MATERIE PRIMĂ PENTRU INDUSTRIALIZARE, LEGUME ŞI FRUCTE

Hygienic quality (innocuity) to food is influenced by microbiological contamination or with other organisms, by chemical contamination or pollution and natural toxicity of food. To maintain population's health, horticultural raw materials must meet primarily in terms of innocuity, because the failure of the condition can lead to disease more or less serious. The environment the fruits and vegetables are produced in which raw materials are obtained, can be a source of contamination of horticultural products with different chemical pollutants or biological contaminants. Normally existing in nature or taken from human activity, nitrites, heavy metals, pesticide residues, bacteria and dangerous molds, can accumulate in horticultural products, sometimes up to dangerous concentrations for the human body. Also, must be considered the contamination with various human pathogens (viruses, parasites) and presence of toxic compounds in the product that forms naturally.

Anghel Roxana Mihaela (University of Agricultural Sciences and Veterinary Medicine Iaşi)
 STUDIES REGARDING THE CHITOSAN FILM PROTECTION OF APPLES SO AS TO MAINTAIN THEIR QUALITY IN THE FRIGORIFIC STOREHOUSES
 STUDII PRIVIND PROTEJAREA CU PELICULĂ DE CHITOSAN A FRUCTELOR DE MĂR, ÎN VEDEREA MENȚINERII CALITĂȚII LOR ÎN DEPOZITELE FRIGORIFICE

Chitin, a natural polysaccharide having a linear structure that may be found in the shell of marine crustaceans and the internal structure of certain invertebrates, is the second biopolymer that may be mainly encountered in

the nature after cellulose. Chitin may be easily processed into chitosan through an initial decalcification in a diluted watery solution of chlorine hydride followed by deproteinization in a watery solution of diluted sodium hydroxide. Due to its special biological properties, biodegradability and biocompatibility, chitosan is widely used in the pharmaceutical industry, the food industry, medicine and biotechnologies. The chitosan films give fruits a special protection due to its pellicular properties, on the one hand, and antifungal properties, on the other hand. Moreover, since they are biocompatible and biodegradable films, they may be ingested by consumers. The benefic action of chitosan on the human body has already been demonstrated by the curative properties it has.

Barcan (Băetu) Alina (University of Agricultural Sciences and Veterinary Medicine Iași)

**STUDIES CONCERNING THE CONTENT OF ASCORBIC ACID IN FRESH HORTICULTURAL PRODUCTS
STUDII PRIVIND CONȚINUTUL ÎN ACID ASCORBIC ÎN PRODUSELE HORTICOLE PROASPETE**

Ascorbic acid also called vitamin C or antiscorbutic vitamin, is synthesized by vegetal organism, animal organism (except human, primates, rat) and some microorganisms, using glucose or galactose as precursors. Accumulation of vitamin C is a specific process for every horticultural product. In some species there is a decrease in content with the evolution of the ripening process, in others can be found an increasing amount of tissue ascorbic acid as sequence of the baking phases. The stability of ascorbic acid in tissues is influenced by the presence of the ascorbatoxidase enzyme that catalyzes its oxidation reaction. During maturation of horticultural products the content of C vitamin decreases (apples, plums), while the tomatoes or melons content grows. During storage, most species tend to lower their ascorbic acid content; as far as acid products goes, the process in their case is slower than the case of those with higher pH.

Cumpătă Simona Diana¹, Mihășan Marius², Ștefan Marius² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²"Al. I. Cuza" University of Iași)

**PATHOGEN MICROORGANISMS CONTAMINATION OF HORTICULTURAL FOOD PRODUCTS
CONTAMINAREA CU MICROORGANISME PATOGENE A PRODUSELOR ALIMENTARE HORTICOLE.**

Horticultural food products represent ways of spreading the chemical and biological contaminants to the consumers. Food analysis is necessary for the identification of contaminant accumulation in dangerous levels for the human or animal body, their detection could prevent individual or collective poisoning/intoxications. Microbiological analysis of several vegetable species, using the dilution technique and selective media culturing revealed an average bacterial load which varies depending on the vegetable species analyzed. Only one potential human pathogen was identified.

Filimon V. Răzvan¹, Niculaua Marius², Arion Cristina¹ (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²Oenological Research Center – Romanian Academy, Iași)

**ANTHOCYANIN PIGMENT CONTENT OF SOME CHERRY VARIETIES GROWN IN IASI AREA, ROMANIA
CONȚINUTUL ÎN PIGMENȚI ANTOCIANICI AL UNOR SOIURI DE CIREȘ CULTIVATE ÎN ZONA IAȘI, ROMÂNIA**

The purpose of the study was the determination of the total monomeric anthocyanins content (AC) by pH differential method and anthocyanin profile obtained by HPLC-DAD technique, from fruits of six local varieties of sweet cherry (*Prunus avium*), grown in experimental field of RDSF (Research-Development Station for Fruit growing), Iași. AC ranged between 46.84 ± 1.86 mg/100g, at Van variety and 443.72 ± 1.54 mg/100g, at Amar Maxut variety. Based on the chromatograms obtained were identified 4 anthocyanins: cyanidin (cy)-3-glucoside, cy-3-rutinoside, pelargonidin (pg)-3-rutinoside, peonidin (pn)-3-rutinoside, expressed as percentage of area (%). Cy-3-rutinoside was found in the highest proportion in all varieties examined (over 91% of total anthocyanins area), the ratio of the pigments identified was specific to each variety.

Mihalache (Arion) Cristina, Niculaua Marius², Filimon R. V. ¹ Beceanu Dumitru¹ Niculaua Marius² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²Oenological Research Center – Romanian Academy, Iași)

**ANTIRADICAL ACTIVITY, TOTAL PHENOLICS AND ANTHOCYANINS CONTENT OF DIFFERENT PLUM VARIETIES
ACTIVITATEA ANTIRADICALĂ, CONȚINUTUL DE FENOLI TOTATLI SI ANTOCIANI LA DIFERITE SOIURI DE PRUNE**

In this study antiradical activity, total phenolics and anthocyanin content of fifteen plum varieties were investigated. The fruits were evaluated for antioxidant potential spectrometrically using DPPH• (1,1-diphenyl-2-picrylhydrazyl free radicals) scavenging test. From all plum fruit analyzed, three showed higher antiradical activity: Silvia (125 ± 2.36 μM Trolox/100 g), followed by Tuleu gras (109.71 ± 1.25 μM Trolox/100 g) and Minerva (109.71 ± 1.05 μM Trolox/100 g). The total polyphenols and anthocyanin contents showed a great variety amongst plum varieties and highly correlation with the total antioxidant capacity. Both total polyphenols and anthocyanin are major contributors to the total antioxidant capacity in plum fruit.



LUCRĂRI PREZENTATE POSTER POSTER PRESENTATIONS

VITICULTURA VITICULTURE

Bosoi Marioara, Miha Ghică, Bosoi Ionica, Stoian Ileana (Vine and Wine Research and Development Station Odobești)

AMPELOMETRIC STUDY OF INDIGENOUS GRAPE VARIETIES BY CLUSTER ANALYSIS METHOD
STUDIUL AMPELOMETRIC A UNOR SOIURI AUTOHTONE DE VIȚA DE VIE PRIN METODA ANALIZEI CLUSTER.

Cluster analysis method enables the characterization and grouping of vine varieties on the basis of "closeness" expression ampelometric. In this paper are presented results on the basis ampelometric phenotypic similarity for 21 indigenous grape varieties belonging to different ecologic-geographic groups. The cluster analysis method based on measurements performed on adult leaves, it was determined the degree of phenotypic similarity between varieties. The dendogram analysis finds the existence of two polythetic groups, group A consists of subgroups A1 and A2 and group B consists of B1 and B2 subgroups. Relatively high phenotypic homogeneity adult leaves are found in group B, with a smaller dissimilarity index (30097.283) compared with group A (35914.064). The greater homogeneity phenotype registered subgroup B2 consists of Frâncușă, Furmint, Miorița, Negru moale, Negru vârtos and Cruciuliță varieties (14562.078).

Călugăr Anamaria¹, Pop Nastasia¹, Iliescu Maria², Babes Anca¹, Bunea C.¹ (¹University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca; ² Vine and Wine Research and Development Station Blaj)

BIOMETRIC DETERMINATION ON CANOPY AT SOME GRAPE VARIETIES CREATED AT S.C.D.V.V. BLAJ, IN TÂRNAVE VINEYARD
DETERMINĂRI BIOMETRICE ASUPRA APARATULUI FOLIAR LA UNELE SOIURI DE VIȚĂ DE VIE, CREATE LA S.C.D.V.V. BLAJ, PODGORIA TÂRNAVE

The grape varieties created at S.C.D.V.V. Blaj (Astra, Blasius, Selena) are characterized by medium growth vigor, but higher than Fetească regală, which was the control variety. The three bud loads (25, 35, 45 buds/block vine) significantly influenced the following studied elements: leaf area/vine, total leaf area/ha, exposable leaf area/ha, excess leaf area/ha, foliar index and the direct exposure degree of vine canopy to solar radiation (%). The largest leaf area/vine was recorded at variety Blasius (14.17 m²/vine) at a bud load of 45 buds/vine and the lowest at Fetească regală (4.96 m²/vine) at a load of 25 buds/vine. Leaf area/vine and excess leaf area/ha were significantly influenced by bud load. The studies had demonstrated that exposable leaf area depended on the training form, of the height and width of canopy. The leaf index and the degree of exposure of canopy to solar radiation had varied widely between varieties and have been recorded the significant negative correlations.

Comsa Anton, Cristea Cristian, Cudur Florina (Vine and Wine Research and Development Station Blaj)

BEHAVIOUR IN THE PRODUCTION OF NEW VARIETIES FOR WHITE WINES, CREATED SCDVV BLAJ
COMPORTAREA IN PRODUCTIE A SOIURILOR NOI PENTRU VINURI ALBE, CREATE LA SCDVV BLAJ

Study presents data on the behavior of the production of new varieties created at SCDVV Blaj, Selena, Blasius and Astra, in 2005 - 2010, compared with the control Feteasca royal pink-60 -21 and Traminer. Selena variety is remarkable that constant exceeded Traminer roz-60 and Blasius which carried out the quantitative and qualitative higher than Feteasca regala-21.

Corbean D.¹, Pop Nastasia², Babeș Anca², Călugăr, Anamaria², Bunea C.², Moldovan S.D.³ (¹S.C. Jidvei S.R.L., ²University of Agricultural Sciences and Veterinary Medicine, Cluj Napoca, ³Vein and Wine Research and Development Station Blaj)

RESEARCH REGARDING THE INFLUENCE OF ROOTING SUBSTRATE IN FERTILE POTS ON YIELD OF GRAFTED VINES, AT S.C. JIDVEI S.R.L., TÂRNAVE VINEYARD
CERCETĂRI PRIVIND INFLUENȚA SUBSTRATULUI DE ÎNRĂDĂCINARE ÎN GHIVECE NUTRITIVE, ASUPRA RANDAMENTULUI DE VIȚE ALTOITE LA S.C. JIDVEI S.R.L., PODGORIA TÂRNAVE

At SC Jidvei S.R.L., the biological material used in the experience was represented by Fetească regală grape variety grafted on rootstock SO4, clone 762. For rooting of the grafted vines were used three variants of mixtures: A - 50% forest ground, 30% red peat, 15% sand, 5% conifer sawdust, B - 60% of forest ground, 25% black peat, 10 % sand, 5% conifer sawdust, C - 70% forest ground, 15% sand, 15% conifer sawdust. At variant B has been registered the largest percentage of primordial roots at grafted vines (25%), as well the highest rooting percentage (81.1). The biggest increases at grafted vines, expressed by the length and diameter of shoots, have been obtained at variant B and at variant C were recorded the lowest shoots

increases. At variant B has been obtained the highest percentage of quality grafted vines (91.5%) and also at this variant were recorded the lowest losses (6.1% vines entered in vegetation and dried after that and 1.5% vines unstarted in growth).

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

INFORMATION SYSTEM FOR MANAGEMENT OF GRAPEVINE GENETIC RESOURCES IN REPUBLIC OF MOLDOVA
SISTEMUL INFORMATIC DE GESTIUNE A GENOFONDULUI VIŢEI DE VIE ÎN REPUBLICA MOLDOVA

Elaborated Information System ensures necessary support in management of accumulated at Institute grapevine Genofond. For the description of accessions are used both general accepted descriptors: MCPD (Multi Crop Passport Data), O.I.V. Descriptor List and specific methodology applied for evaluation and documentation of genotypes. At the same time are ensured transfer to this format of data accumulated according previously used description methodologies.

Coţovanu Filimon Roxana Mihaela, Rotaru Liliana (University of Agricultural Sciences and Veterinary Medicine Iaşi)

THE AMPELOGRAPHIC COLLECTION BELONGING TO THE FACULTY OF HORTICULTURE IAŞI AS VINES SOURCE OF GERMOPLASM
COLECŢIA AMPELOGRAFICĂ A FACULTĂŢII DE HORTICULTURĂ IAŞI, SURSĂ DE GERMOPLASMĂ VITICOLĂ

Ampelographic collection of Faculty of Horticulture was founded in 1985, registered in the International Catalogue of Ampelographic Collections, since 1994. Recognized as an important center for the preservation of genetic diversity of vines and source of germplasm, currently, collection occupies an area of 1.8 hectares and comprises 175 species and varieties belonging to the Vitis genus, of which 114 varieties belonging to Vitis vinifera, 32 interspecific direct producers hybrids and 29 species, varieties and clones of rootstocks. Initially created for teaching purposes, ampelographic collection is a valuable applicative base for research, into its territory it runs a series of experiments, necessary to research contracts, and for the preparation of license, dissertation and doctoral thesis or for elaboration of scientific papers.

Damian Doina, Vasile Ancuţa, Zaldea Gabi, Savin C., Paşa Rodica (Vein and Wine Research and Development Station Iaşi)

DIFFERENTIATION OF GRAPE VINE VARIETIES FROM SCDVV IASI GENE BANK BY USING THE MAIN COMPONENT STUDY METHOD
DIFERENȚIEREA SOIURILOR DE VIȚĂ DE VIE DIN BANCA DE GENE A SCDVV IAȘI PRIN UTILIZAREA METODEI DE ANALIZĂ ÎN COMPONENTE PRINCIPALI

The variability of morphological features in grape vine and the existence of a large number of varieties makes more difficult their description and acknowledgement. Many researchers specialized in ampelography have developed several easier identification methods based on scientific principles which are improved; a step forward is represented by the introduction of ampelometry as study method, using as basis the morphological characters of the leaf. Therefore, in order to differentiate and classify some grape vine varieties from the ampelographic collection we used the main component study, which is based on the study of co-variation or of correlation between variables, allowing the differentiation and grouping of genotypes according to size and shape of adult leaf. Studies were performed on 18 indigenous or local varieties, selected according to synonymy criterion or affinity to the same group of varieties, as well as on other five known varieties from Iasi vineyard.

Damian Doina, Vasile Ancuţa, Zaldea Gabi, Savin Costică, Paşa Rodica (Vein and Wine Research and Development Station Iaşi)

USE OF CLUSTER METHOD FOR THE DIFFERENTIATION OF GRAPEVINE GENOTYPES FROM SCDVV IASI GENE BANK
UTILIZAREA METODEI CLUSTER ÎN DIFERENȚIEREA UNOR GENOTIPURI DE VIȚĂ DE VIE EXISTENTE ÎN BANCA DE GENE A SCDVV IAȘI

The cluster method used for grapevine variety differentiation is based on the existence of some polythetic groups, ensuring the distribution of varieties to branches, according to their similarity or dissimilarity. This method is based on the principle of dividing a set of individuals into classes in compliance with a dendrogram-like "hierarchy" which may provide information on the number of classes existing in a population. The study was conducted on 23 varieties selected according to the criterion of synonymy or affinity to the same variety group, these varieties being also studied according to the main component method. According to the design of the hierarchical dendrogram of studied varieties, we obtained three polythetic branches of varieties, which point out the very high phenotypic variability, and the fact that their similarity is based on a small number of common features of the adult leaf.

Dobrei Alin Ionel, Ghiță Alina, Mălăescu Mihaela, Drăgulescu Anca, Sala Florin (Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara)

RESEARCHES ON THE VARIETIES BEHAVIOR THAT ARE PART OF THE FETEASCA GROUP SORT, IN DIFFERENT CLIMATIC CONDITIONS IN WESTERN PART OF COUNTRY

CERCETĂRI PRIVIND COMPORTAREA SOIURILOR DIN SORTGRUPUL FETEASCĂ, ÎN DIFERITE CONDIȚII PEDOClimATICE DIN VESTUL ȚĂRII

Researches aimed the most known, widespread and valuable indigenous varieties cultivated in three different areas in the western part of Romania: Buziaș, Miniș și Receaș. These were weighed with the varieties Italian Riesling and Cabernet Sauvignon from the point of view of vine vigor and the quantity and quality of grapes. Indigenous varieties through product quality achieved constitute a valuable source for obtaining of typical and authentic wines, able to satisfy consumers becoming increasingly advised and pretentious, wishing to consume quality wine specific of areas of origin. Harvests were superior compared with the control at varieties for white wines Feteasca alba and Feteasca regala in all three areas studied, except the Feteasca neagra variety, who compared with Cabernet Sauvignon gave slightly inferior productions at Minis and Receaș but registered higher sugar accumulations in all areas of research.

Donici Alina, Simion Cristina (Vine and Wine Research and Development Station Bujoru)

STUDY OF THE MORPHOLOGICAL VARIABILITY OF INDIGENOUS VINE VARIETIES BY USING VARIATIONAL STATISTICS IN THE CLIMATIC CONDITIONS OF VINEYARDS DEALU BUJORULUI

STUDIUL VARIABILITĂȚII MORFOLOGICE A SOIURILOR AUTOHTONE DE VIȚĂ DE VIE PRIN UTILIZAREA STATISTICII VARIATIONALE IN CONDIȚIILE PEDOClimATICE A PODGORIEI DEALU BUJORULUI

Research has particularity targeted on existing local varieties of RDVVS Bujoru ampelography collection. Cluster analysis acknowledges the existence of similar groups, but not all characterization allows the division between varieties according to the existing degree of dissimilarity or similarity. In this case, groups are formed according to the linked affinity (kinship), and congestion or placing in the group was hierarchical. Distance (dissimilarity) and similarity complement each other, maximum similarity corresponds to short and vice versa and for every individual belonging to the group to the specified distance from its neighbors in the same group of neighbors to the superiors of the group.

Enache Viorica¹, Donici Alina¹, Edmond Maican² (¹Vine and Wine Research and Development Station Bujoru, ²Polytechnic University Bucharest)

THE DATA BASE, ORIENTED TO THE PECULIAR SOIL AND CLIMATE CONDITIONS OF VINE CULTURE AT REGIONAL LEVEL IN THE BUJORU VINEYARD

BAZĂ DE DATE CLIMATICE ORIENTATĂ PE SPECIFICUL PEDO-CLIMATIC ȘI REGIONAL AL CULTURILOR VITICOLE DIN PODGORIA DEALU BUJORULUI

The data base, oriented to the peculiar soil and climate conditions of vine culture at regional level allows to estimate the future production, water demand for irrigation, pests attack etc in the next year. These data are useful for predicting the budget of vine culture in the next year. All these are just estimates, the real costs being determined by the natural unverifiable realities but also breaking down by knowledge. The main information source of this data base is represented by the records of concerning the climate parameters and grape production carried out in the year 1980. They include information referring to the running phenophases (bud breaking, blooming, ripening and maturation), quantitative and qualitative grape production (must sugar content, average weight of 100 berries, must acidity) but also the main climate characteristics at Dealu Bujorului Vineyard (annual thermic balance, precipitations, average annual temperatures, maximum and minimum temperatures, specific indices etc). The results have been carried out within the Project entitled „Research concerning the global climate change upon the viticultural ecosystem, Project no. 51075/Sept 2007, PNII” run within Partnership Programme.

Kisil Mihail¹, Kisil S., Bratco D². (¹Scientific-Practical Institute for Horticulture and Food Technologies, Republic of Moldova, ²Ministry of Agriculture and Food Industry, Republic of Moldova)

THE DEVELOPMENT OF TABLE GRAPE GROWING IN MOLDOVA

ASIGURAREA DEZVOLTĂRII SOIURILOR DE MASĂ ÎN REPUBLICA MOLDOVA

Based on complex ecological studies, including climatic, orographic and pedologic factors a comparative analysis of different zones of R of Moldova was made in order to identify their ecologic potential for expansion of territories used for table grapes cultivation. It was established, that ecologic potential of Republic could be significantly increased from currently 20 thousand ha up to 50 thousand ha in the nearest future.

Mustea Mihai, Rotaru Liliana, Irimia Liviu Mihai, Răileanu Manuel (University of Agricultural Sciences and Veterinary Medicine Iași)

BEHAVIOUR OF FETEASCĂ NEAGRĂ, CABERNET SAUVIGNON AND MERLOT VINE VARIETIES IN THE VITICOL CENTER BOHOTIN OF IASI VINEYARD

COMPORTAREA SOIURILOR FETEASCĂ NEAGRĂ, CABERNET SAUVIGNON ȘI MERLOT ÎN CENTRUL VITICOL BOHOTIN, DIN PODGORIA IAȘI

Viticol center Bohotin is located in an area where the vineyard culture is not recommended for red wine varieties, but because of the warming climate in the last period and in the context of the favorable relief conditions of culture is necessary to test behaviour of the red vine varieties in this viticol center. The experiments were carried out at the SC VINIA SA Iasi, on Fetească neagră, Cabernet Sauvignon and Merlot varieties. To determine the behavior of these varieties were studied: the loss of buds in winter, the amount of wood removed at fruiting cuttings, phenophase conduct of vegetation, fertility and productivity of plants, the quantity and quality of grape production. Experiences have shown that the studied varieties had a good behaviour in the viticol center Bohotin, both in terms of grape production and its quality.

Petrea Traian Mihail¹, Rotaru Liliana¹, Andor Iosif² (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²S.C. COTNARI S.A.)

THE INFLUENCE OF LENGHT PRUNING ELEMENTS ON THE QUANTITY AND QUALITY OF FETEASCĂ NEAGRĂ GRAPEVINE VARIETY CULTIVATED IN COTNARI VINEYARD
INFLUENȚA LUNGIMII ELEMENTELOR DE ROD ASUPRA CANTITĂȚII ȘI CALITĂȚII PRODUCȚIEI DE STRUGURI LA SOIUL FETEASCĂ NEAGRĂ CULTIVAT ÎN PODGORIA COTNARI

In this paper the authors presents the experimental data have obtained from the practice of cutting different lengths fruition at the Fetească neagră variety grown in the vineyard Cotnari. First cutting short pruning system was applied (stems of 2-3 fruitful eyes), and second cutting on the long pruning system (fertile offshoots of 8-10 eyes). The research envisages obtained production levels, production and quality of grapes made from the use of two types of cut: Speroni Girdles and Guyot on arms with periodic replacement.

Rotaru Liliana, Mustea Mihai, Nechita Bogdan (University of Agricultural Sciences and Veterinary Medicine Iași)

THE AGROBIOLOGICAL AND TECHNOLOGICAL VALUE OF NEW CREATION FOR TABLE GRAPE ON IASI VINEYARD
VALOAREA AGROBIOLOGICĂ ȘI TEHNOLOGICĂ A UNOR CREAȚII NOI PENTRU STRUGURI DE MASĂ ÎN CONDIȚIILE PODGORIEI IASI

In the zone of the North-East of Romania, characterizes by the restrictive climatic conditions (the winters cold and be torrid for it and drynesses), the type of vines for the grapes of table have the less favorability, being cultivates especially the Chasselas dore. For at the time the units of research wine in Romania centered their research of improvement of vine for obtain new genotypes which have the best adaptability with the these restrictive factors and the shorter growing period. Among Rumanian creations which confirmed their behavior méritoire in the septentrional areas of Romania imposed type of vines for the grapes of table Gelu, Paula, Spendid and Someșan. In this work have presents the behavior of these type of vines under the ecoclimatic conditions of the vineyard of Iasi, were followed: the frost resistance, the phenology of type of vines, the fertility and productivity, the quantity and quality of productions of the grapes.

Zaldea Gabi, Damian Doina, Vasile Ancuța, Savin Costică, Pașa Rodica (Vine and Wine Research and Development Station Iași)

UPGRADING THE TECHNOLOGY OF CULTIVATING GELU AND PAULA TABLE GRAPES IN ACCORDANCE WITH THE REQUIREMENTS OF EUREPGAP QUALITY SYSTEM
MODERNIZAREA TEHNOLOGIEI DE CULTIVARE A SOIURILOR PENTRU STRUGURI DE MASA, GELU ȘI PAULA ÎN CONFORMITATE CU CERINȚELE SISTEMULUI DE CALITATE EUREPGAP

Taking into account the increasingly high demand of grapes for fresh consumption, in the context in which the areas covered by vine growing diminished significantly and large part of the grapes existing on the Romanian market come from import, it is of utmost importance to take the measures necessary for: improving the range of varieties of table grapes by creating and introducing varieties which meet the increasingly high demands of consumers, upgrading their cultivation technology to allow higher as well as constant, qualitative and economically efficient yields. In order to meet these requirements, during 2008 – 2010 at Research and Development Institute for Viticulture and Wine making we designed a modern technology for obtaining and selling table grapes in accordance with European quality systems (EUREPGAP).

OENOLOGIE OENOLOGY

Adajuc V., Taran N., Degteari N., Soldatenco O. (Scientific-Practical Institute for Horticulture and Food Technologies, Republic of Moldova)

APPRECIATION OF OPTIMAL REGIMES FOR OBTAINING OF LOCAL SORBENTS FOR THEIR USE IN WINE DIMETALIZATION
APRECIEREA REGIMURILOR OPTIMALE DE OBȚINERE A SORBANȚILOR AUTOHTONI PENTRU UTILIZAREA LOR LA DEMETALIZARE VINURILOR

The presence of excessive concentration of metals in wines creates an acute need to develop ecological technologies for demetalization of alcoholic beverages in order to stabilize them for physicochemical turbidity. In this context attention is paid to the study of advanced technological processes, selection and use of new quality sorbents, which possessing progressive qualities, technological appreciation of sorbents and elaboration of technical requirements for use. In this study, was investigated local bentonites from fossils of village Larguta.

Bîrliga Nicolae¹, Cibucă Aurel¹ (¹Vine and Wine Research and Development Station Bujoru, ²"Dunărea de Jos" University of Galați)

THE STUDY OF PHENOLIC MATURATION TO MAIN GRAPES VARIETIES FOR RED WINES FROM THE VINEYARD "DEALUL BUJORULUI"
STUDIUL MATURĂRII FENOLICE LA PRINCIPALELE SOIURI DE STRUGURI PENTRU VINURI ROȘII DIN PODGORIA „DEALUL BUJORULUI”

The research was conducted during 2007 – 2008 in the experimental plots of SCDVV Bujoru. The achievement of the phenolic maturity was monitored to the main varieties for red wines grown in the region: Merlot, Cabernet Sauvignon, Fetească neagră, Burgund and Băbească neagră. The results have led to the conclusion that, in most cases, the monitored varieties arrive to phenolic maturity in about 2 – 4 days after the full maturity, when the anthocyanin content of grapes begins to diminish, after a maximum accumulation, with 28 – 88 mg/Kg.

Bîrliga Nicolae¹, Cibucă Aurel¹, Bahrim Gabriela², Rapeanu Gabriela² (Vine and Wine Research and Development Station Bujoru, ²"Dunărea de Jos" University Galați)

THE SULPHITATION INFLUENCE ON MALOLACTIC FERMENTATION TO QUALITY RED WINES FROM "DEALUL BUJORULUI" VINEYARD
INFLUENȚA SULFITĂRII ASUPRA DESFĂȘURĂRII FERMENTAȚIEI MALOLACTICE LA VINURILE ROȘII DE CALITATE DIN PODGORIA "DEALUL BUJORULUI"

In the autumn 2010, to track the sulfur dioxide's impact has to the development of the malolactic fermentation, in the experimental cellar of SCDVV Bujoru, five sulphitation levels were tested on two representatives varieties for "Dealul Bujorului" vineyard : Cabernet Sauvignon and Fetească neagră. The results have revealed how the level of marc sulphitation influence the total duration of FML and its latency period

Colibaba Lucia-Cintia, Cotea V. Valeriu, Nechita Bogdan, Niculaua Marius, Lacureanu Florin-Gabriel (University of Agricultural Sciences and Veterinary Medicine Iași)

COMPOUNDS WITH SENSORIC CHARACTER IN TAMAIOSA ROMANEASCA WINES OBTAINED THROUGH DIFFERENT MACERATION TECHNOLOGIES
COMPUSI CU CARACTER OLFACTIV DIN VINURILE DE TAMAIOSA ROMANEASCA OBTINUTE PRIN DIVERSE TEHNOLOGII DE MACERARE

The volatile compounds in local origin Romanian wines represent an insufficiently researched domain. This study wants to identify aroma substances in Tămâioasă românească wines from Cotnari vineyard, in the northeast of Romania. During 2007 harvest, different maceration technologies were applied to Tamâioasă românească grapes like: classical maceration, cryo-maceration, ultrasound maceration and microwave maceration. A SPE extraction prior to gas-chromatography mass-spectrometry was used to determine individual aroma compounds. As expected, Tamâioasă românească has terpenes, acids, alcohols and esters that form its highly appreciated aroma. At the same time, the variation of these compounds according to the used maceration method is described.

Georgescu Ovidiu, Valeriu V. Cotea, Zamfir Cătălin Ioan, Odăgeriu Gheorghe, Niculaua Marius, Gherghină Nicoleta (University of Agricultural Sciences and Veterinary Medicine Iași)

ASPECTS REGARDING THE PRODUCTION TECHNOLOGIES AND CHARACTERISTICS OF BLANC DE NOIR WINES OBTAINED FROM BĂBEASCĂ NEAGRĂ BLACK GRAPES VARIETY
ASPECTE PRIVIND TEHNOLOGIA ȘI CARACTERISTICILE VINURILOR BLANC DE NOIR OBȚINUTE DIN SOIUL BĂBEASCĂ NEAGRĂ

This paper has as main objective the valorification of the oenological potential of Băbească neagră grape variety for producing blanc de noir wines. The experimental process was comprised of the following steps: whole healthy grapes of Băbească neagră were pressed using a hydraulic press for a very short time, so as to avoid the setting of maceration. The obtained must was processed following the general technology for obtaining quality white wines. Malolactic fermentation was not present, as to maintain the freshness and fruitiness of these wines, qualities mainly given by the wines' acidity. The registered physical chemical properties underline the pretability of the new sortiment of blanc de noir wines from Băbească neagră grape variety.

Gherghină Nicoleta¹, Cotea V. Valeriu¹, Niculaua Marius², Colibaba Cintia¹, Georgescu Ovidiu¹ (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²Oenological Research Center – Romanian Academy, Iași, Romania)

ASPECTS REGARDING THE INFLUENCE OF GELATIN TREATMENT ON THE PHYSICAL-CHEMICAL COMPOSITION OF WINES PRODUCED IN THE COTNARI VINEYARD
ASPECTE PRIVIND INFLUENȚA TRATAMENTULUI CU GELATINĂ ASUPRA COMPOZIȚIEI FIZICO-CHIMICE A VINURILOR DE COTNARI

This paper presents data on the influence of gelatin on the physical-chemical composition of Cotnari wines evidenced by: main compositional characteristics (alcoholic concentration, reducing sugars content, total acidity, pH, relative density, total dry extract, non-reducing extract, free and total sulphur dioxide), index of total polyphenols, Folin-Ciocalteu index and chromatic characteristics. For this study, white wines made from Francusa, Feteasca alba, Grasa de Cotnari grape varieties from Cotnari vineyard.

Lacureanu Florin-Gabriel, Cotea V. Valeriu, Colibaba Lucia Cintia, Niculaua Marius, Nechita Bogdan (University of Agricultural Sciences and Veterinary Medicine Iași)

COMPOSITIONAL CHARACTERISTICS OF BUSUIOACA DE BOHOTIN WINES OBTAINED IN PIETROASA REGION
CARACTERISTICI DE COMPOZITIE A VINURILOR DE BUSUIOACA DE BOHOTIN OBTINUTE ÎN CENTRUL VITICOL PIETROASA

Romanian aromatic rose wines represent an insufficiently researched domain, both from the point of view of the volatile compounds as well as the major physical-chemical characteristics. This research wants to identify the main physical-chemical characteristics and volatile compounds of Busuioaca de Bohotin wines from Pietroasa vineyard. During 2009 harvest, different maceration technologies were applied to Busuioaca de Bohotin grapes like: classical maceration, cryo-maceration, ultrasound maceration and microwave maceration. The wines were analysed by gas-chromatography and by using the general physical-chemical methods, in order to determine compounds that form the "fruity rose" aroma as well as the general physical-chemical profile. At the same time, the variation of these compounds according to the used maceration method is described.

Măntăluță Alina¹, Cojocar D.², Vasile Ancuța¹, Savin C.², Pașa Rodica² (¹Vine and Wine Research and Development Station Iași, ²"Al. I. Cuza" University of Iași)

TESTING NEW GRANULAR YEAST STRAINS IN SECONDARY FERMENTATION BOTTLES FOR OBTAINING SPARKLING WINES
TESTAREA UNOR SUȘE NOI DE LEVURI GRANULARE ÎN FERMENTAȚIA A DOUA ÎN BUTELII PENTRU OBTINEREA VINURILOR SPUMANTE

During the secondary fermentation in bottles six granular yeast strains were tested which were isolated from Iași vineyard –Copou wine center. The aim of the study was to select the yeast strains with most suitable fermentation features for making high-quality wines. To achieve this objective, the same dosage was used in the trial, the variable parameter being only the biological agent, respectively leavens obtained from the tested yeast strains. After mixing the dosage (raw wine, yeasts, liqueur de tirage) we carried out physical-chemical tests and the information obtained was used for the dynamic survey of changes occurring in the secondary fermentation in bottles. Based on the dynamic results of some physical – chemical parameters and of the organoleptic features of sparkling wines made, we drew the conclusion that from the six tested yeasts, four may be considered suitable for making sparkling wines.

Mogirzan (căs. Condorachi) Petronela Cristina, Valeriu V. Cotea, Igor Condorachi, Marius Niculaua (University of Agricultural Sciences and Veterinary Medicine Iași)

TANNIN CORRECTION USED FOR OBTAINING WINES FROM IAȘI VINEYARD
CORECȚIA CONȚINUTULUI ÎN TANIN UTILIZATĂ LA OBTINEREA VINURILOR DIN PODGORIA IAȘI

Tannins have an important role in defining wines quality. They are responsible for astringency, slightly bitter taste and phenolate character of the wine. The tannin give the stability and the antioxidant activity of wine. If their quantity is too low, the wine is disharmonious, vulnerable to microorganisms, low resistance storage. The corrections with tannins are often used to obtain white wines and red wines too. In this study the tannin it has been added to the must and wine at the Aligote variety and to the Fetească neagră, Băbească neagră and Merlot the corrections were made only to the wine. After applying these corrections have been made a series of determinations such as physico-chemical parameters, IFC, D280, Cielab, total

tannins by Bate-Smith method with methyl cellulose and butanol, to see the influence of these corrections on the existing quantity value of tannin in wines.

Moldovan Dan Ion¹, Țârdea Constantin², Nicolau Laura³ (¹S.C. Promotion S.R.L. Blaj, ²University of Agricultural Sciences and Veterinary Medicine Iași, ³Auckland University, New Zealand)

CONTRIBUTIONS TO THE DETERMINATION OF WINE PYRASINICS AROMAS OF SAUVIGNON BLANC WINE IN CENTER BLAJ OF ȚÂRNAVE VINEYARD.

CONTRIBUȚII LA DETERMINAREA AROMELOR PIRAZINICE DIN VINURILE DE SAUVIGNON BLANC-CENTRUL VITICOL BLAJ, PODGORIA ȚÂRNAVE

The variety Sauvignon blanc, accumulates in the grapes skin pirazin compounds that prints wine aromas of pepper plant. Aromatic character of pirazin resulting from their low basicity and oxidation resistance. Have been determined, methoxy-izobutylpirazina (IBMP) and methoxy-methylethyl-pirazina (MMP) of Sauvignon blanc wines, harvest year 2008. Depending on the duration of the maceration of grape seeds with husks, the quantities are as follows: 20.978 to 35.848 ppm and 5.096 to 15,254 ppm MMP IBMP.

Postolache Elena, Teliban Luciana, Teliban A., Enache Viorica, Ciubuca Aurel (Vine and Wine Research and Development Station Bujoru)

EFFECT FOLIAR FERTILIZER „FLORAVIT” PHYSIOLOGICAL PROCESSES ON THE VINE WINE AND QUALITY THE VINEYARD „DEALU BUJORULUI”

EFACTUL FERTILIZANTULUI FOLIAR „FLORAVIT” ASUPRA PROCESELOR FIZIOLOGICE LA VIȚA DE VIE ȘI A CALITĂȚII VINULUI ÎN PODGORIA „DEALU BUJORULUI”

Quality wine is a growing concern of the winemakers in the competitive market in terms of increasing consumer demands. The SCDVV BUJORU studies using the product, FLORAVIT, "which is a foliar fertilizer produced by Original Process-France, ECOCERT certificate, natural, effective, adapted to the new European rules, the technology allowed the culture to try to stimulate ecological processes acting on plant physiological photosynthesis accelerating accumulation of organic compounds in the leaves and grapes. Administration „FLORAVIT” product was achieved organically grown vineyards (re.CE 889/20080) on organic Merlot. Vine becomes resistant to the external aggressions: cold, heat, stress of any kind. „FLORAVIT” product is effective in planting of Merlot ecological conditions of temperature and high humidity (annual average precipitation over the area). The foliar fertilizer used in Merlot grapes give good results on the quality and the quality of wine.

Soldatenko E., Taran. N., Adajuc V., Soldatenko O., Morari B., Stoleicova S., Barsova O. (Scientific-Practical Institute for Horticulture and Food Technologies, Republic of Moldova)

QUALITY ASSESSMENT OF RAW MATERIAL FOR SPARKLING WINES OBTAINED FROM CLASSIC GRAPE VARIETY CLONES.

APRECIEREA CALITĂȚII VINURILOR MATERIE PRIMĂ PENTRU SPUMANTE OBȚINUTE DIN CLONELE SOIURILOR CLASICE

Grapes are a primary link and basic component which determines wine production process of obtaining raw materials wine destination for high quality sparkling wines. From these considerations, attention is drawn to election grape varieties, performed researches on different clones of European grapes varieties for production of sparkling wine in order to get a superior quality product to commercial market. As objects of study were investigated clones of Pinot group, Chardonnay, Aligote, Sauvignon, Riesling, Merlot and Cabernet Sauvignon, coming to the demands of producing sparkling wines with advantageous properties

Soldatenko E. (Scientific-Practical Institute for Horticulture and Food Technologies, Republic of Moldova)

ALLOCATION OF NEW LOCAL YEAST STRAINS FOR THE PRODUCTION OF WHITE TABLE WINES IN MOLDOVA

EVIDENȚIEREA SUȘELOR DE LEVURI AUTOHTONE PENTRU PRODUCEREA VINURILOR ALBE DE MASĂ ÎN MOLDOVA

In the modern winemaking a prominent role for the formation of wine quality represents alcoholic fermentation process. In all the countries and areas which are engaged in winemaking, significant researches are being carried out on the allocation of local wine yeast strains and study of their properties. It is believed that the use of endemic yeasts contributes to improvement of the wine quality. In this paper is presented the study on the allocation of some local yeast races, used for the production of white table wines.

Soldatenko E. (Scientific-Practical Institute for Horticulture and Food Technologies, Republic of Moldova)

MORPHOLOGICAL STUDIES OF YEAST STRAINS FROM THE NATIONAL COLLECTION OF MICROORGANISMS FOR THE WINE INDUSTRY

STUDIUL MORFOLOGIC A UNOR SUȘE DE LEVURI DIN COLECȚIA NAȚIONALĂ DE MICROORGANISME DESTINATE INDUSTRIEI VINICOLE

In the modern winemaking a prominent role for the formation of wine quality represents alcoholic fermentation process. Depending on the type and strain of yeast, their involvement in the process of

fermentation can have both positive and negative effects. Morphological characteristics of different Saccharomyces strains depend on the culture which is used, cultivating environment on different nutrient media. Such determinations are quite complicated and depend mainly on the nutrient medium used. The studies were aimed at identifying the characteristics of yeast strains depending on their morphological properties.

Taran N., Adajuc V., Soldatenco O., Morari B., Stoleicova S., Barsova O. (Scientific-Practical Institute for Horticulture and Food Technologies, Republic of Moldova)

STUDY OF GRAPE VARIETIES OF NEW SELECTION FOR SPARKLING WINES PRODUCTION.
STUDIUL SOIURILOR DE STRUGURI DE SELECȚIE NOUĂ ÎN PRODUCEREA VINURILOR SPUMANTE.

New varieties have high quality and precious proprieties from biologically point of view and are ready for production in crop cultivation unprotected. These varieties have resistance to various diseases and adverse climatic conditions, which allows their cultivation with reduced application of chemical treatment. In the same time they are not enough studied, especially agrotehnic and their subsequent use in processing, which would help highlight their potential. In this context the results obtained in the study of these varieties of their agro biological and technological terms is a current problem for viticulture and winemaking of Republic of Moldova. The study of varieties of new selection (Viorica, Floricica, Riton, Bianca, GM, Muscat de Ialoveni) and technological assessment of the raw materials wines produced was carried out in order to use them for sparkling wines production.

Taran. N., Soldatenco E., Adajuc V., Morari B., Stoleicova S., Soldatenco O. (Scientific-Practical Institute for Horticulture and Food Technologies, Republic of Moldova)

INFLUENCE OF ROOTSTOCKS ON THE QUALITY OF DRY WHITE WINES
STUDIUL INFLUENȚEI PORTALTOIULUI ASUPRA CALITĂȚII VINURILOR ALBE SECI

In the given work is studied the influence of 4 stocks on physical and chemical parameters of white dry wines. Are researched various stocks technological are developed recommendations for manufacture of a landing material which would allow to receive high-quality white dry wines.

Taran N., Soldatenco E., Adajuc V., Barsova O. (Scientific-Practical Institute for Horticulture and Food Technologies, Republic of Moldova)

COMPARATIVE ASSESSMENT OF DIFFERENT TECHNOLOGICAL SCHEMES OF MANUFACTURING OF RAW MATERIAL WINES FOR ROSE ORIGINAL SPARKLING WINES
APRECIEREA COMPARATIVĂ A DIFERITOR SCHEME TEHNOLOGICE DE FABRICARE A VINURILOR MATERIE PRIMĂ PENTRU SPUMANTE ORIGINALE ROZE

In this work is played comparative assessment of different technological schemes of manufacturing of raw material for rose original sparkling wines. In the study on the influence of various processing schemes of red grapes, Cabernet Sauvignon and Merlot in the Central Zone were determined physicochemical clues and nuances of color, that determine the composition and wine quality raw material for the original rosé sparkling wines.

Vasile Ancuța¹, Cotea V.V.¹, Savin C.², Pașa Rodica², Nechita B.¹, Tucaliuc Raxana¹ (¹University of Agricultural Sciences and Veterinary Medicine Iași, ² Vine and Wine Research and Development Station Iași)

STUDIES ON THE IMPROVEMENT OF ANTHOCYANIN EXTRACTION FROM GRAPE SKINS
STUDII PRIVIND OPTIMIZAREA PROCESULUI DE EXTRAȚIE A ANTOCIANILOR DIN PIELIȚELE DE STRUGURI

Anthocyanins, besides the fact that they are a source of natural coloring, represent a very complex subject of research due to their antioxidant, antibacterial and anticancer features. Thanks to the structural features specific to anthocyanins and by performing the extraction of raw material by solvents in static conditions we evaded the use of mechanical and magnetic stirring of samples to prevent oxidation of active substances. Extracts obtained after 24, 48, 72 and 96 hours from solvent addition, were separated from residues by decantation and/or filtration and further subjected to centrifugation for 5 – 10 minutes at a speed of 4000 – 8000 rpm and were stored in a cold place for additional tests. To assess the efficiency of the extraction process according to the vegetal origin we used grape skins of Fetească neagră, Băbească neagră, Arcaș, Negru de Drăgășani, Cabernet Sauvignon, Merlot and Chambourcine varieties for each extract, the anthocyanin content (mg/L) being determined in each case.

TEHNOLOGIA PRODUSELOR HORTICOLE POSTHARVEST TECHNOLOGY OF HORTICULTURAL PRODUCTS

Andrei Corina (University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES CONCERNING THE WAYS OF CONTAMINATION ON TECHNOLOGICAL FLOW OF PROCESSED HORTICULTURAL PRODUCTS
STUDII PRIVIND CĂILE DE CONTAMINARE PE FLUXUL TEHNOLOGIC A PRODUSELOR HORTICOLE PRELUCRATE

One of the main functions of the contaminated food is the innocuity. This implies that food is free of harmful microorganisms, heavymetals and other harmful chemicals for the human body. For that, it takes into account both the degree of raw material hygiene and the proper way to process the aliments. In processed products made from horticultural raw materials, appear specific sources of pollution and contamination, which depend on the nature and type of equipment or process lines applied, use of food additives and packaging technologies or implemented framework. Food preservation prevents their degradation in time, stopping the loss of nutritional and organoleptic qualities. For total elimination of biodegradation germs, the industry appeals to: physical treatment (thermal, irradiations) or the use of chemicals which can have negative effects, their residues being present in finished food.

Anghel Roxana Mihaela (University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES REGARDING THE CARBOXYMETHYL CELLULOSE FILM PROTECTION OF APPLES SO AS TO MAINTAIN THEIR QUALITY IN THE FRIGORIFIC STOREHOUSES
STUDII PRIVIND PROTEJAREA CU PELICULĂ DE CARBOXIMETILCELULOZĂ A FRUCTELOR DE MĂR, ÎN VEDEREA MENȚINERII CALITĂȚII LOR ÎN DEPOZITELE FRIGORIFICE

The edible films have been more and more used recently to maintain the quality of fruit and vegetables during their marketing in fresh state. They already know a series of biodegradable films successfully used in the developed countries. The materials used to obtain such films must meet a series of requirements related both to the protection of the products for which they are used and the consumers' protection. Besides the protective function, these films may have benefic actions on the human body. Many of these biodegradable films are made of derivatives of cellulose and starch. Carboxymethyl cellulose is obtained from cellulose which is the main polysaccharide and constituent of wood and all plants' structure. It has multiple uses, mainly as a thickening agent, but also as a filling, dietary fibers, anti-agglomerating agent and emulsifier. In medicine, carboxymethyl cellulose is generally used as a gastric antacid and laxative. Carboxymethyl cellulose is highly soluble and it may be fermented in the large intestine.

Barcan (Băetu) Alina (University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES CONCERNING THE CONTENT OF ASCORBIC ACID IN PROCESSED HORTICULTURAL PRODUCTS
STUDII PRIVIND CONȚINUTUL ÎN ACID ASCORBIC LA PRODUSELE HORTICOLE PRELUCRATE

Product processing causes loss of C vitamin, depending on the methods used. Prolonged washing, air and lighting exposure, fragmentation, boiling, drying, freezing of the products lead to a significant decrease in C vitamin content. The lactic fermentation stores the C vitamin in the product, but 50% goes into the liquid coating. The losses can be lowered by scalding steam, shortened high-temperature sterilization, vacuum closure or by using different preservatives. The usage as a food additive (ascorbic acid - E300) is due to its antioxidant properties. It exhibits as acicular colorless crystals, foils or white crystalline powder. It is used in beverages, canned food, oils and non-emulsified fats, as stabilizing agent etc. Ascorbic acid has many derivatives are also used as antioxidants: sodium ascorbate, ascorbyl palmitate, iso-ascorbic acid and iso-ascorbats.

Beceanu Dumitru (University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES REGARDING THE LIQUEUR ASSORTMENT OBTAINED FROM HORTICULTURAL RAW MATERIALS PRODUCED BY SC ALFINCOOL SA IAȘI
STUDII PRIVIND SORTIMENTUL DE LICHIORURI OBȚINUTE DIN MATERII PRIME HORTICOLE PRODUS DE SC ALFINCOOL SA IAȘI

Liqueurs are alcoholic drinks having a concentration of 18-32 vol % and containing large quantities of sugar and that are produced through a specific technology. At present, more and more liqueurs are produced by using synthetic components (flavoring agents, essences, stabilizers, thickening agents etc). At SC Alfincool SA Iași, a company having as its main object of activity the production of ethylic alcohol of agricultural origin (cereal alcohol), has diversified its offer through the assimilation and homologation of a drink assortment prepared from the alcohol produced by it. Besides vodka, gin, brandy imitations and other assortments having a more reduced extract, an important part of this offer is represented by a remarkable assortment of fruit liqueurs and aromatic plants, respectively. The studies focus on the evaluation and specific appreciation of sour cherry, strawberry, apricot, bilberry and mint liqueurs, according to the standard regulations.

Beceanu Dumitru (University of Agricultural Sciences and Veterinary Medicine Iași)

STUDIES REGARDING THE QUALITY OF THE COMPOTE ASSORTMENT EXISTING IN THE
COMMERCIAL NETWORK OF IAȘI MUNICIPALITY
STUDII PRIVIND CALITATEA SORTIMENTULUI DE COMPOTURI EXISTENTE ÎN REȚEAUA
COMERCIALĂ A MUNICIPIULUI IAȘI

Fruit compotes are pasteurized products having a specific technology different from the similar products prepared in the household. Depending on the fruits used, the covering liquid may have different sugars content. At the same time, the sterilization equations differ depending on the type of packing, its capacity and the proportion of dosed product. Within the warranty period (18 months), these assortments must maintain their covering liquid limpid, without any signs of alteration or colour change. We studied a number of 25 assortments in terms of their main characteristics regulated by the standard.

Bulea Delia, Șpac Adrian Florin, Dorneanu Vasile (University of Medicine and Pharmacy "Gr. T. Popa" Iași)

HPLC DETERMINATION OF OCHRATOXIN A IN BREAD AND CORN FLOUR
DETERMINAREA OCHRATOXINEI A DIN PÂINE ȘI MĂLAI PRIN METODA HPLC

Ochratoxin A is a mycotoxin produced by different species of Aspergillus and Penicillium fungi. Ochratoxin A was found in peanuts, cereals, coffee, bread, flour, corn, peas, beans, beer, wine. The aim of this paper is to determine ochratoxin A in bread and corn. The samples purchased from markets and agro-food markets were processed and then analyzed by high performance liquid chromatography (HPLC) with fluorescence detection. The analysis was performed at a Phenomenex column, type Luna C18(2) 100Å (150 x 4,6 mm) with a mobile phase formed by a mixture of acetonitrile : water : acetic acid (99 : 99 : 2), a flow of 0.7 mL/min. For detection, the wavelength of excitation is 228 nm and for emission is 423 nm. In the performed analysis was found that some of the samples contain varying amounts of ochratoxin A and it is absent in some samples.

Cumpătă Simona Diana¹, Plăvan Gabriel², Dorobanțu Paula¹, Patraș Antoanela¹ (¹ University of Agricultural Sciences and Veterinary Medicine Iași, ² "Al. I. Cuza" University of Iași)

EVALUATION OF HEAVY METAL CONTENT IN SEVERAL VEGETABLE SPECIES GROWN IN IASSY
COUNTY
EVALUAREA CONȚINUTULUI ÎN METALE GRELE ÎN CÂTEVA SPECII LEGUMICOLE CULTIVATE ÎN
JUDEȚUL IAȘI

Human activity affects the natural distribution of heavy metals. As they are not degraded, persisting in the environment and accumulating in plants, the heavy metals represents a real danger for consumers health. In the present paper the content of heavy metal in several vegetable species grown in Iassy county was determined by atomic absorption spectrometry. Experiments performed on seven vegetable species have shown presence of heavy metals (Pb, Cr, Cd, Fe, Cu, Al) in small concentrations compared with the values mentioned in literature.

Filimon V. Răzvan¹, Niculaua Marius², Arion Cristina¹, Coțovanu (¹University of Agricultural Sciences and Veterinary Medicine Iași, ² Oenological Research Center – Romanian Academy, Iași, Romania)

SOLID-LIQUID EXTRACTIONS EFFICIENCY IN DETERMINATION OF ANTHOCYANIN CONTENT OF
THE OENOLOGICAL DEPLETED MATERIAL
RANDAMENTUL EXTRAȚIILOR SOLID-LICHID ÎN DETERMINAREA CONȚINUTULUI ÎN ANTOCIANI
DIN MATERIAL OENOLOGIC EPUIZAT

The study aims to determine anthocyanin content of alcoholic extracts obtained by treating dried pomace resulted in the process of winemaking from the local variety of black grapes, Vulpea. Were conducted a total of 17 stages of extraction, the ratio between the plant material and solvent initially was 1:10, then dropping to 1:5 (extractions 2-17). Was determined spectrophotometrically, total content of anthocyanins and polyphenols, associated with each phase of extraction (392.89 mg/100g, in the first stage of extraction), up to a theoretical yield of 99.80% recovery (distribution coefficient which is considered as total yield of extraction), corresponding to the 9th phase of extraction. After the 17 extractions plant material was considered depleted, theoretically yield of recovery being 99.99% (5.62 mg/100 g in last phase of extraction).

Mihalache (Arion) Cristina, Niculaua M.², Filimon R. V. ¹ Beceanu D.¹ (¹University of Agricultural Sciences and Veterinary Medicine Iași, ² Oenological Research Center – Romanian Academy, Iași)

EVALUATION OF THE ANTIRADICAL POTENTIAL OF DIFFERENT CABBAGE VARIETIES
EVALUAREA POTENȚIALULUI ANTIRADICALIC A DIFERITE SOIURI DE VARZĂ

External and internal leaves extracts of white and red cabbage were analyzed for antiradical potential and total phenolics content. The antocyanins content of red cabbage was also determined. Total phenolics content ranged from 42.75±0.17 mg gallic acid/100 g fresh weight, found in white cabbage – external leaves, to 245.16±0.37 mg gallic acid/100 g fresh weight, found in red cabbage – external leaves. Red cabbage exhibit high antiradical activity than white cabbage. No significant differences were recorded between antiradical activity of external and internal leaves of cabbage varieties studied. Liniar regression analysis of the data showed a weak correlation ($R^2=0.671$) between antiradical potential and total

phenolics content, implying that cabbage contain another compound with antioxidant potential beside phenolics.

Sîrbu Sorina, Beceanu Dumitru², Marius Niculaua², Iurea Elena, Anghel Roxana² (¹Research and Development Station for Fruit Tree Growing Iași, ²University of Agricultural Sciences and Veterinary Medicine Iași)

**FRUIT'S PHYSICO-CHEMICAL CHARACTERISTICS FROM TWO BITTER CHERRY CULTIVARS
CARACTERISTICI FIZICO-CHIMICE ALE FRUCTULUI LA DOUA SOIURI DE CIRES AMAR**

Bitter cherry cultivars are particularly important for both industrial and home conditions processing in jams, liqueurs or syrups. Evaluation of the physico-chemical characteristics of fruit was carried out on samples from harvest years 2007-2010 at two bitter cherry cultivars (Galata and Maxut) created at Fruit Growing Research Station Iasi. Were observed and determined the ripening period, fruit size, stone percentage, soluble solids content, reducing sugars, total acidity, the sugar / acidity ratio, humidity percentage, organic acids and both phenols and anthocyanins content. Galata is a bicolour cultivar with great fruits (17.2mm in diameter and 4.2g), very valuable for jams processing. Maxut is a valuable cultivar for its both fruit and flesh dark brown with great bitterish taste valuable for liqueurs, syrups and jams.

3rd SECTION
SOIL SCIENCES. PLANTS AND ENVIRONMENT PROTECTION

3.1. AGROCHIMIE, AGROTEHNICĂ, FITOTEHNIE, PEDOLOGIE, TOPOGRAFIE, CADASTRU AGRICOL, ÎMBUNĂȚĂRI FUNCiare, MECANIZAREA AGRICULTURII

3.1. AGROCHEMISTRY, AGROTECHNICS, PHYTOTECHNICS, PEDOLOGY, TOPOGRAPHY, AGRICULTURAL CADASTRE, LAND AMELIORATION, MECHANIZATION OF AGRICULTURE

Moderatori:

Prof. univ. dr. Valeriu MOCA
Prof. univ. dr. Ioan ȚENU
Conf. univ. dr. Feodor FILIPOV

Secretari:

Drd. Constantin Liviu BUTNARU
Drd. Ionuț GROSU



LUCRĂRI PREZENTATE ORAL ORAL PRESENTATIONS

AGROCHIMIE AGROCHEMISTRY

Cotianu Razvan Daniel (Bioterra University Bucharest)

INFLUENCE OF FERTILIZERS ON THE LEVEL AND QUALITY OF MAIZE

INFLUENȚA ÎNGRĂȘĂMINTELOR ASUPRA NIVELULUI ȘI CALITĂȚII PRODUCȚIEI DE PORUMB

Maize is a nitrogen-intensive crop, the largest part of this element is absorbed into the first part of the vegetation, with maximum intensity to the formation of floral organs. Towards maturation of seed, 70% of nitrogen goes from bean leaves, but at this stage of culture needs this element for further enhancing photosynthesis and grain protein content. The many factors that influence the effectiveness of fertilizers creates difficulties in establishing dose more so, since some factors are more difficult to control and taken into account (climatic conditions), increases the production of fertilizers obtained by applying varying from one area to another.

Siuris Andrei (Institute of Pedology, Agrochemistry and Soil Protection "Nicolae Dimo" Chișinău, Republic of Moldova)

UTILIZATION OF ORGANIC FERTILIZERS ON ERODED SOILS FROM REPUBLIC MOLDOVA

UTILIZAREA ÎNGRĂȘĂMINTELOR ORGANICE PE SOLURILE ERODATE DIN REPUBLICA MOLDOVA

Chernozems fertility prevails in the Republic of Moldova. Yet, 500.000 hectares are exposed to erosion of high and moderate degree, a fact which decreases their fertility and the economic potential by 30-60%. Measures to improve these by fertility means of organic fertilizers are suggested in the paper. In this case, the soils fertility and the yield of agricultural cultures increase.

PEDOLOGIE PEDOLOGY

Filipov Feodor¹, Maria Călin², Ambăruș Silvica², Radu Oprea¹ (¹University of Agricultural Sciences and Veterinary Medicine Iași, Vegetable Research and Development Station Bacău)

EFFECT OF THE DRIP IRRIGATION AND PLASTIC MULCH ON THE HORTIC ATHROSOLS

CU FOLIE ASUPRA UNOR ÎNSUȘIRI ALE ANTROSOLULUI HORTIC ȘI A DEZVOLTĂRII PLANTELOR DE CASTRAVEȚI

THE EFFECT OF THE DRIP IRRIGATION AND PLASTIC MULCH ON THE HORTIC ATHROSOLS CHARACTERISTICS AND CUCUMBER PLANTS GROWING

The growing of the legumes plants in the greenhouses or plastic tunnels has some advantages such as obtaining of early production, plant protections against of some natural risk factors (hailstone, hoar frost, frost etc.). The surface of plastic tunnels are extended significant in the last period (2000 - 2008) due to

improving of plants growing technology such as using of plastic mulch, drip irrigation. It is well known that plastic mulch have some advantages: increase soil temperature and diminishes diurnal amplitude of temperature,, reduce leaching of fertilizers, conserve moisture, increase nutrients bioavailability, decrease losses of nitrogen compounds. Our investigation concern to the greenhouses soils of Romania North-East region evidenced that in some case plastic mulch have some negative influence on the soil properties and production quality (increasing of soil compaction between plant rows, decrease air porosity, and cucumber seed production).

Filipov Feodor, Tomiță Octavian (University of Agricultural Sciences and Veterinary Medicine Iași)

LOCAL WATER EXCESS HUMIDITY OF THE GREENHOUSES SOILS

SUPRAUMEZIREA LOCALĂ A SOLURILOR ÎN ZONELE MARGINALE ALE SOLARIILOR

Negative effects of excess moisture is felt in all stages and phases of growth and development of vegetable plants grown in greenhouses. Excessive wetting of the soil determining the anaerobic conditions, adverse effects to the root system. Under these conditions, plants develop a few roots that remain in the superficial layer where they branch and extend to the surface. In some greenhouses are manifested locally in marginal areas, excess moisture caused by stagnant water. In this paper we present some features of the temporary manifestation of excess water from lateral infiltration from rain or melting snow in cases where it is not collected and drained water surplus from the soil surface

Rusu Constantin^{1,4}, Bulgariu Dumitru^{1,4}, Filipov Feodor², Bulgariu Laura³, Stoleru Vasile² (¹„Al.I.Cuza” University of Iași, ²University of Agricultural Sciences and Veterinary Medicine Iași, ³„Gheorghe Asachi” Technical University Iași, ⁴Iași Filial of Romanian Academy –Geography Staff)

PEDOGEOCHEMICAL MODIFICATIOND IN SOILS GROWED BY VEGETABLES, DURING CONVERSION PERIOD

MODIFICĂRI PEDOGEOCHIMICE ÎN SOLURILE CULTIVATE CU LEGUME IN PERIOADA DE CONVERSIE

In this study we have follow the modification of some pedogeochemical characteristics and the dynamic of mineral and chemical-physical equilibriums in soils cultivated with vegetables, at conversion from traditional cultures to ecological cultures. The experiments were performed using 34 soil samples cultivated with vegetables in tradition systems, in conversion and in ecological systems, in field and polytunnel. The results have showed that: (i) mineralogy and geochemistry of soils suffer intense changes materialized by: neopedogenesis processes, inhibition of salinization and geochemical segregation processes, increase of the ration between huminic and fulvic acids; (ii) decrease the concentration of mobile forms of aluminium and silica, and increase the relative mobility of iron, phosphorus and microelements, (iii) risk potential of aluminium is significantly reduced by blocking its mobile forms in the alumino-silicate gels (superior horizons), silica-alumino-phosphate gels and organic-mineral complexes (median horizons), $\text{SiO}_2 \cdot x\text{H}_2\text{O}$, $\text{Al}_2\text{O}_3 \cdot x\text{H}_2\text{O}$ and (Si, Al)-organic complexes (inferior horizons).

ÎMBUNĂȚĂȚIRI FUNCȚIARE LAND AMELIORATION

Huțanu Cristian (University of Agricultural Sciences and Veterinary Medicine Iași)

THE CADASTRAL CHANGES THAT OCCURRED IN TIME OVER THE PARCELS OF THE VINEYARD UNIT IAS COPOU – LIMITROPHE TO THE INSIDE OF THE CITY OF IASI

SCHIMBĂRILE CADASTRALE SURVENITE ÎN TIMP ASUPRA PARCELELOR DIN UNITATEA VITICOLĂ IAS COPOU – LIMITROFĂ INTRAVILANULUI MUNICIPIULUI IAȘI

Key objectives for the vineyard unit IAS Copou are drawing the location and cadastral delimitation plan and achieving the database of agricultural cadastre, based on topographic measurements and cadastral documentations, accordingly with the standard of the Cadastre and Land Registration Office Iasi (OCPI Iasi). The update of the existing cartographic documents for the studied area is required in order to observe the changes that occurred in time over the parcels cadastral situation. For example, the most obvious changes have occurred since the inclusion of the vineyard unit in the inside of the city of Iasi, due to the process of urbanization of the area.

Moca Valeriu¹, Oniga Ersilia² (¹University of Agricultural Sciences and Veterinary Iași, ²„Gheorghe Asachi” Technical University Iași)

THE ADOPTION OF SOME LOCAL STEREOGRAPHIC PROJECTIONS IN THE GENERAL CADASTRE WORK FROM GEOGRAPHICALLY EXTREME LOCALITIES OF ROMANIA

ADOPTAREA UNOR PROIECȚII STEREOGRAFICE LOCALE ÎN LUCRĂRILE DE CADASTRU GENERAL DIN LOCALITĂȚILE GEOGRAFICE EXTREME ALE TERITORIULUI ROMÂNIEI

The territory of Romania comprises a geographical area that spans from South to North on a latitude difference of 4°37'59" and from West to East respectively on a longitudinal difference of 9°25'40". The geographical position of Romania is framed by the following extremes represented by these places: in the

North, Horodiștea village in Botoșani County; in the South, the city of Zimnicea in Teleorman County, in the East, the city of Sulina in Tulcea County and the village Beba Veche, in Timiș County, in the West. The relative linear deformations for large scale representations of the stereographic projections -1970 have indicated high and very high values in the case of these four places, as following: 24 cm/km at Horodiștea, 19 cm/km at Zimnicea, 63 cm/km at Sulina and 58 cm/km at Beba Veche. For each place was adopted a local secant stereographic plan, different from the unique secant plan – 1970 so as to reduce the distance deformations.

Radu Oprea, Filipov Feodor (University of Agricultural Sciences and Veterinary Medicine Iași)

SOIL WATER DYNAMIC AND DISTRIBUTION WHEN USING BLEEDING IRRIGATION ON MODERATE SLOPES IN THE HILLY PLAIN OF JIJIA
DINAMICA SI DISTRIBUȚIA APEI IN SOL LA APLICAREA UDĂRII PRIN PICURARE PE TERENURILE MODERAT INCLINATE DIN CÂMPIA COLINARĂ A JIJIEI

The bleeding irrigation method has extended and improved in Romania due to its numerous advantages: water and energy savings, full water deficit compensation for plants, lower water losses through direct evaporation at soil surface, tight control of the irrigation standards and of the irrigation standards application. Bleeding irrigation is the most efficient solution for watering vegetables in greenhouses, solariums or in the field, for watering flowers, vine and fruit-bearing trees. It may be used on almost all types of soil, on uneven land and even on slopes. This paper describes water dynamic and distribution when using bleeding irrigation to water vine stock planted on ridges covered by black membrane located on a moderate 15 % slope, with cambium chernozem soil formed on loess deposits.

MECANIZAREA AGRICULTURII MECHANIZATION OF AGRICULTURE

Țenu I.¹, Cojocariu P.¹, Bercovici C.², Roșca R.¹, Cârlescu P.¹ (¹University of Agricultural Sciences and Veterinary Medicine Iași, ²S.C. DELPHI S.A. Iași)

RESEARCHES CONCERNING THE DESIGN AND TESTING OF A LABORATORY RIG FOR THE STUDY OF THE WHEEL-SOIL INTERACTION
CERCETĂRI PRIVIND PROIECTAREA ȘI EXPERIMENTAREA UNUI STAND DE LABORATOR PENTRU STUDIUL INTERACȚIUNII ROATĂ-SOL

It is known that physical degradation of soil due to the interaction with the wheels of the agricultural units consists mainly in its compaction, but also in the deterioration of its structure. Experimental studies should be developed in order to establish the values of the wheels' working parameters leading to soil degradation and also to establish the relationships between the wheels' working parameters and the indices related to soil compaction and structure. In order to solve the above mentioned problems the Agricultural Machinery Department of the University of Agricultural Sciences and Veterinary Medicine has designed, built and tested a laboratory rig. The rig is composed of a soil channel, the wheel carriage and the carriage traction implement. Tests were carried out in order to validate the design of the rig and the conclusion was that all the imposed requirements were achieved.

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RESEARCHES CONCERNING DESIGN AND TESTING OF A LABORATORY RIG FOR THE STUDY OF THE AGRICULTURAL UNITS ACTIVE PARTS-SOIL INTERACTION
CERCETĂRI PRIVIND PROIECTAREA ȘI EXPERIMENTAREA UNUI STAND PENTRU STUDIUL INTERACȚIUNII ORGANELOR ACTIVE ALE UTILAJELOR AGRICOLE CU SOLUL

The physical degradation of soil due to the interaction with the active parts of the agricultural units consists mainly in its compaction, but also in the deterioration of its structure. Experimental studies should be carried out in order to establish the values of the working parameters of the active parts leading to soil degradation and also to establish the relationships between these parameters and the indices related to soil degradation. In order to solve the above mentioned problems the Agricultural Machinery Department of the University of Agricultural Sciences and Veterinary Medicine has designed, built and tested a laboratory rig. The rig is composed of a soil channel, the carriage for mounting the studied active part and the carriage traction implement. Tests were carried out in order to validate the design of the rig and the conclusion was that all the imposed requirements were achieved.

LUCRĂRI PREZENTATE POSTER



POSTER PRESENTATIONS

AGROCHIMIE AGROCHEMISTRY

Cotianu Razvan Daniel (Bioterra University Bucharest)

INFLUENCE OF FERTILIZERS ON THE LEVEL AND QUALITY OF SOYBEAN PRODUCTION
INFLUENȚA ÎNGRĂȘĂMINTELOR ASUPRA NIVELULUI ȘI CALITĂȚII PRODUCȚIEI DE SOIA

Scientific research and practice shows that the use of fertilizers, in that condition and influence the level and quality of production is a technological sequence with an important role in intensive technology. Many researches show that the climatic conditions of our country react very differently to the application of soybean fertilizer and fertilization following problem must be solved and addressed the conditions where the culture.

PEDOLOGIE PEDOLOGY

Bireescu Geanina¹, Bireescu Lazăr¹, Anton Iulia², Sellitto MV³ (¹Biological Research Institute Iași, ²National Institute of Research-Development for Pedology, Agrochemistry and Environmental Protection Bucharest, ³SC AGROCAPITAL SRL Iași)

THE IMPACT OF VEGETABLE TECHNOLOGY ON FERTILITY INDICATORS OF SOIL RESOURCES IN THE ADAPTED ECOSYSTEMS TO CONVERSION TO ORGANIC VEGETABLE
IMPACTUL TEHNOLOGIILOR LEGUMICOLE ASUPRA INDICATORILOR DE FERTILITATE A RESURSELOR DE SOL ÎN ECOSISTEME PRETABILE LA RECONVERSIE SPRE LEGUMICULTURA ECOLOGICĂ

The concept of sustainable agriculture is an integrated system of plant and animal production practices, with application under ecological specific. The soil biological activity of the vegetable ecosystems under ecological conversion was quantified through synthetic indicators of fertility depending on the effects of anthropogenic and technological impact. In the performed analysis both, in conventional and ecological vegetable system, the values of biological indicators are increased in the ecological vegetable system in all studied stationeries, on the row of plants, regardless of crop. The values of biological activity significantly decreased by 50% due to soil compaction under conditions of fertile soil but with high clay content, poor aeration regime and hard soil consistency in the dry summer season. In field crops, the values of soil biological activity decreased by 20-30% compared to protected crops, correlated with excessively dry climate and applied technology.

Bireescu Gianina¹, Draghia Lucia², Bireescu Lazăr¹, Chelariu Liliana², MV Sellitto³, I. Anton⁴ (¹Biological Research Institute Iași, ²University of Agriculture and Veterinary Medicine Iași, ³SC AGROCAPITAL SRL Iași, ⁴National Institute of Research-Development for Pedology, Agrochemistry and Environmental Protection Bucharest)

ASSESSING OF SOIL FERTILITY IN NATURAL PASTURE ECOSYSTEMS GENERATING OF PLANT GENETIC RESOURCES FOR GENOFUND COLLECTION OF ORNAMENTAL PLANTS.
EVALUAREA FERTILITĂȚII RESURSELOR DE SOL DIN ECOSISTEME PRATICOLE NATURALE GENERATOARE DE RESURSE GENETICE VEGETALE PENTRU COLECȚIA GENOFONDULUI DE PLANTE ORNAMENTALE.

Pedobiological study was developing on the natural pasture ecosystems from Berca-Arbănaș Buzău Depression (Arbănaș pasture and Bisocuța lawn - eutric cambisols, WRB, 2006). The matrix of zone and local ecological specific analyses 20 eco-pedological factors and determinants, through ecological size and favorability classes from quantitative, respectively qualitative point of view. Low level of air porosity pointed out by decreased values and the hard soil consistency in the dry season, fine texture and rainwater stagnation by excessive values. Pedobiological diagnosis (DIPEBIOS) analyses 10 biotic and enzymatic indicators appreciating the quality of biological activity, on the basis of assessment scale. The synthetic value of DIPEBIOS, calculated through summation score of the 10 examined fertility indicators, pointed out a medium fertility in the first 20 cm, respectively below-medium, on 20-40 cm depth.

Contoman Maria¹, Murariu Maria² (¹„Dunărea de Jos” University of Galați, ²Pedological and Agrochemical Studies Centre, Galați)

DETERMINATION AND INTERPRETATION OF INDICATORS OF SOIL FERTILITY IN GALATI COUNTY VINEYARDS
DETERMINAREA ȘI INTERPRETAREA UNOR INDICATORI DE FERTILITATE A SOLURILOR ÎN PLANTAȚIILE VITICOLE DIN JUDEȚUL GALAȚI

Fertility is a soil ability to provide conditions for plant growth and development through the accumulation of vegetation factors (light, water, air, heat, nutrients and biological activity) and ensuring that these factors are used in plentiful quantities. Fertility is the result of all soil properties (physical, mechanical, physical, mechanical, hydro, chemical, biological and environmental) factors interact with all the vegetation and the crop is being studied by other disciplines (Pedology, Agrochemistry, etc..). It is important the unitary approach from the agrotechnical point of view, systemic soil fertility to its conservative modeling, with emphasis on the requirements of crop plants. Soil fertility can be characterized by a series of indicators for systematic, can be divided into four groups: agrofizici, hydro, agrochemical, agrobiological. The study was conducted in plantations in the center of the vineyard Smulți, ujurului Hills.

Contoman Maria¹, A.R Palade² (¹ „Dunărea de Jos” University of Galați, ² Pedological and Agrochemical Studies Centre, Galați)

RESEARCHES CONCERNING THE SUITABILITY OF VINE PRODUCTION ON SOME LANDS FROM SIDE OF THE COVURLUI HILLS
CERCETĂRI PRIVIND PRETABILITATEA PENTRU CULTURA VIȚEI DE VIE A UNOR TERENURI DIN ZONA COLINELOR COVURLUI

This paper intends to determine soil availability for vine culture in some areas in the eastern part of the Covurlui Hills by showing the soil quality in the cadastral area of Cavadinesti. Due to various natural conditions, the soils in this area are quite varied in as far as their fertility and production capacity are concerned. As a result, soil and land quality determination and evaluation have a great importance. Through its geographical position, the land under analysis belongs to the great geographical unit of the Covurlui hilly region which is characterized by a great variability of the environmental factors that contribute to the plant growth. In this context, the ecopedological evaluation is compulsory, being required by the sustainable development of viticulture. On the land of the village, N soil units have been defined and grouped under the following categories: protisols, antrisol and chernisols.

Rusu Constantin^{1,4}, Bulgariu Dumitru^{1,4}, Munteanu Neculai², Bulgariu Laura³, Stan Oana¹ (¹ „Al.I.Cuza” University of Iași, ² University of Agricultural Sciences and Veterinary Medicine Iași ³ „Gheorghe Asachi” Technical University Iași, ⁴ Iași Filial of Romanian Academy–Geography Staff)

RISK POTENTIAL OF SOME MICROELEMENTS (Cu, Ni, Zn, Co, Mn) IN SOILS GROWED WITH VEGETABLES (I) TRADITIONAL CROPS
POTENȚIALUL DE RISC AL UNOR MICROELEMENTE (Cu, Ni, Zn, Co, Mn) ÎN SOLURILE CULTIVATE CU LEGUME (I) CULTURI TRADIȚIONALE

In this study we have follow the determination of total contents, estimation of inter-phases distribution tendencies and of risk potential of some microelements (Cu, Ni, Zn, Co, Mn) in soils cultivated with vegetables, in traditional systems. The experiments were performed using 16 soil samples cultivated with vegetables, in field and in solariums. The results have showed that: (i) studied soils are not contaminated and have a relatively high level of supply with microelements, (ii) reported the total contents of microelements, the dominant weight have pseudo-mobile fractions (37,73 – 62,58 %), (iii) in relation to chemical-mineralogical components of soils, the studied microelements are selective distributed and have high affinities, in special for organic matter and iron oxy-hydroxides, (iv) risk potential of studied microelements is reduce due to relative low concentrations and thermodynamic control manifested by organic matter, iron oxy-hydroxides and carbonate – bicarbonate system on inter-phases distribution processes of microelements.

ÎMBUNĂȚĂȚIRI FUNCȚIARE LAND AMELIORATION

Brejea R., Domuța C., Bara V., Șandor Maria, Ciobanu Cornelia, Borza Ioana, Bara Camelia, Domuța Cr., Bara L., Gîtea M., Vușcan A., Oneț Aurelia, Oneț C. (University of Oradea, Environmental Protection Faculty)
CERCETĂRI PRIVIND INFLUENȚA IRIGAȚIEI ASUPRA CULTURII CARTOFULUI ÎN CAMPIA CRIȘURILOR

Cercetările au fost realizate la Stațiunea de Cercetare Dezvoltare Agricolă Oradea în perioada 2007-2009 în condițiile unui preluvosol. Determinările decadaale ale umidității solului au evidențiat faptul că atât seceta pedologică cât și seceta pedologică accentuată a fost prezentă în toți cei trei ani studiați. Prin aplicarea irigațiilor s-a îmbunătățit substanțial consumul zilnic și consumul total de apă al cartofului, s-au obținut sporuri de producție foarte semnificative statistic în toți cei trei ani studiați; a crescut ponderea tubercuilor mari în totalul producției, iar cantitatea de tuberculi obținută la 1 m³ de apă consumată

Domuța C., Bara V., Șcheau V., Ciobanu Gh., Șandor Maria, Bara Camelia, Domuța Cr., Bara L., Borza Ioana, Brejea R., Gîtea M., Pereș Ana, Koteles Nandor (University of Oradea, Environmental Protection Faculty)

PROGNOZA IRIGAȚIEI LA CULTURA PIERSICULUI IRIGAT PRIN PICURARE ÎN CONDIȚIILE DIN NORD-VESTUL ROMÂNIEI

Lucrarea se bazează pe cercetări efectuate la Oradea în perioada 2007-2010. Acestea au vizat studiul comparativ a 4 metode de determinare a evapotranspirației de referință (măsurate cu eaporimetrele Bac, respectiv Piche sau calculate prin metodele Thornthwaite, respectiv Penman-Monteith) comparativ cu valorile consumului optim de apă al piersicului irigat prin picurare. Calculul rezultatelor prin analiza varianței arată diferențe foarte semnificative statistic ceea ce reflectă necesitatea determinării coeficienților Kc de transformare a evapotranspirației de referință în consum optim de apă. Acești coeficienți, urmează să fie folosiți în prognoza irigației la piersicul irigat prin picurare.

Radu Oprea (University of Agricultural Sciences and Veterinary Medicine Iași)
ADJUSTING AGRICULTURAL DRAINAGE TO BUILDINGS
ADAPTAREA DRENAJULUI AGRICOL LA CLĂDIRI

In order to enhance stability and to ensure the normal operation of a building, both the land on which the building is erected and its foundation should meet particular requirements, i.e. the foundation should be strong and dry. Underground waters are responsible for up to 70 % of the problems and damages caused to non-industrial and industrial buildings, both during building erection and during building use and operation. The drainage of rain water and sidewalk water accumulating at the foot of the foundations is also a permanent problem. It is therefore necessary, especially when the buildings have basements, to provide a viable drainage system able to allow water and water vapor to drain and, hence, reduce the hydrostatic pressure exerted on the building walls.

MECANIZAREA AGRICULTURII MECHANIZATION OF AGRICULTURE

Butnaru Constantin Liviu (University of Agricultural Sciences and Veterinary Medicine Iași)
RESEARCH REGARDING THE IMPACT OF AGRICULTURAL MACHINES TRAFFIC ON SOME SOIL PHYSICAL PROPERTIES ON WINTER WHEAT CROP
CERCETĂRI PRIVIND IMPACTUL TRAFICULUI UTILAJELOR AGRICOLE ASUPRA UNOR PROPRIETĂȚI FIZICE ALE SOLULUI LA CULTURA GRÂU DE TOAMNĂ

The agricultural machines traffic, involved in carrying out the mechanized agriculture has a great impact on the physical and mechanical properties of the soil and, consequently, on the agricultural production. In this paper, experimental research has been performed to quantify the effect of soil compaction on soil, realised by the running systems of agricultural tractors and of agricultural machines on winter wheat crop. To this end, several experimental variants with different degrees of compaction have been carried out, and the evolution of the following parameters has been determined: the resistance to penetration, the bulk density, the mean weight diameter of the structure elements and the water stable aggregates of these elements.

Butnaru Constantin Liviu (University of Agricultural Sciences and Veterinary Medicine Iași)
RESEARCH REGARDING THE IMPACT OF AGRICULTURAL MACHINES TRAFFIC ON SOME PHYSICAL PROPERTIES OF THE SOIL ON CORN CROP
CERCETĂRI PRIVIND IMPACTUL TRAFICULUI UTILAJELOR AGRICOLE ASUPRA UNOR PROPRIETĂȚI FIZICE ALE SOLULUI LA CULTURA DE PORUMB PENTRU BOABE

The traffic of agricultural machines, involved in carrying out the mechanized agriculture, has a great impact on the physical and the mechanical characteristics of the soil and, consequently, on the agricultural production. In this paper, experimental research has been made to quantify the effect of soil compaction on soil, realised by the running systems of tractors and agricultural machines for the corn crop. To this end, several experimental variants with different degrees of compaction have been carried out and the evolution of the following parameters has been determined: the bulk density, the penetration resistance, the water stable aggregates of the structural elements and the mean weight diameter of these elements.

Grosu Ionel (University of Agricultural Sciences and Veterinary Medicine Iași)
RESEARCH REGARDING DETERMINATION OF WORKING INDEXES FOR TRC 150 CHOPPING MACHINE
CERCETĂRI PRIVIND DETERMINAREA INDICILOR DE LUCRU AI MAȘINII DE TOCAT TRC 150

The experiments were conducted in 2009-2010 interval in a plantation of vine variety with Chasselas doré, belonging to the Experimental Station belonging to the Agricultural University in Iasi, and aimed the determination of the main indexes for the aggregate consisting of Aster 45 Goldoni tractor and TRC 150 chopper for vegetable scraps. For the experiments various tests were conducted, aiming to establish the optimum operating speed for performing work on the string chopping intervals between rows of vines.

Following the interpretation of experimental results obtained, the optimal experiment version of chopping work was obtained which achieved higher values of the quality indices, with a low fuel consumption.

Grosu Ionel (University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania)

ASPECTS REGARDING THE IMPACT OF TECHNOLOGICAL SOIL WORKS IN A VINEYARD PLANTATION FROM VITERBO REGION, ITALY
ASPECTE PRIVIND IMPACTUL LUCRĂRILOR TEHNOLOGICE ASUPRA SOLULUI ÎNTR-O PLANTAȚIE VITICOLĂ DIN REGIUNEA VITERBO ITALIA

The experiments were conducted in 2010, in a plantation with Trebbiano vines variety in the Nello Lupori experimental farm of the Viterbo town, Italy and aimed to determine the main soil physical properties for different tillage variants. Analyses performed in the Laboratory of Soil Physics, University of Tuscia aimed to determine texture, bulk density, soil density and porosity for four different tillage technologies. After interpretation of the obtained results the optimal versions of technologies for soil maintenance were established taking into account the conservation of its physical features.

3.2. MICROBIOLOGIE, BIOLOGIA SOLULUI, FITOPATOLOGIE, ENTOMOLOGIE, ECOLOGIE, INGINERIA MEDIULUI

3.2. MICROBIOLOGY, SOIL BIOLOGY, PHYTOPATHOLOGY, ENTOMOLOGY, ECOLOGY, ENVIRONMENTAL ENGINEERING

Moderatori:

Prof. univ. dr. **Aurel LĂZUREANU**
Prof. univ. dr. **Mihai TĂLMACIU**
Prof. univ. dr. **Eugen ULEA**
CP I dr. Ing. **Eugen CÂRDEI**

Secretari:

Şef lucr. dr. **Marinela BĂDEANU**
Drd. **Monica HEREA**



LUCRĂRI PREZENTATE ORAL **ORAL PRESENTATIONS**

FITOPATOLOGIE **PHYTOPATHOLOGY**

Bratco Dumitru¹, Lemanova N.² (¹Scientific-Practical Institute for Horticulture and Food Technologies, Republic of Moldova, ²Institute of Plant Protection and Organic Agriculture Republic of Moldova)

BIOLOGICAL CONTROL OF GRAPE CROWN GALL

METODA BIOLOGICĂ DE COMBATERE A CANCERULUI BACTERIAN LA VIȚA DE VIE

Genetic date transfer T-DNA from a pathogen to a plant cell occure the process of tumefaction on vineyard. Treatment of woundings by biologic preparate Paurine (suspension of bacteria cells of Pseudomonas fluorescens) deteriorate the interaction of bacteria-pathogen with the cell of host plant. Application of this preparat decrease the quantity of plants with tumors.

Ivaşcu Antonia¹, Grădinariu Gică², Cîndea Mirela¹, Uberti Marina¹ (¹The State Institute for Variety Testing and Registration, Bucharest, ²University of Agricultural Sciences and Veterinary Medicine Iaşi)

BACTERIAL CANCER OF THE MULBERRY TREE

CANCERUL BACTERIAN AL DUDULUI

ENTOMOLOGIE **ENTOMOLOGY**

Lupaştean Daniela („Ştefan cel Mare” University of Suceava, Faculty of Forestry)

**ASPECTE PRIVIND PROTECȚIA PĂDURILOR ÎN CONTEXTUL CERTIFICĂRII MANAGEMENTULUI
FORESTIER CONFORM STANDARDELOR FSC.**

**ASPECTS UPON FOREST PROTECTION FOLLOWING THE PROCESS OF FOREST MANAGEMENT
CERTIFICATION ACCORDING TO FSC STANDARDS.**

The paper evaluates the situation developed in the forest protection activity in Romania, as a consequence of the certification of an important forest area according to FSC standards. The FSC standards adopted in forest management resulted in strong restrictions in using the majority of the pesticides authorised for forestry application. In the present paper are displayed the solutions adopted in other member countries of the European Union, in similar situations, and the possibility to adjust them to the local conditions are discussed. An additional task consists in identification of some pesticides with low toxicity and remanence, according to the sixth FSC principle, in order to apply them for the limitation of the damages caused by the phytophagous insects in mature stands.

Stancă-Moise Cristina („Lucian Blaga” University of Sibiu)

**LEPIDOPTERA (INSECTA: LEPIDOPTERA) IN THE COLLECTION OF EUGEN WORELL FROM
NATURAL HISTORY MUSEUM OF SIBIU, COLLECTED FROM "DUMBRAVA SIBIULUI" FOREST**

LEPIDOPTERE (INSECTA: LEPIDOPTERA) DIN COLECTIA LUI EUGEN WORELL EXISTENTA LA MUZEUL DE ISTORIE NATURALA DIN SIBIU SI COLECTATE DIN PADUREA "DUMBRAVA SIBIULUI"

In the present work was studied the Lepidoptera collection of Eugen Worell, and the paper presents a systematic list of species collected Macrolepidoptera since 1907-1958 in Forest "Dumbrava Sibiu". This paper can be considered a tribute and memory of Eugen Worell entomologists, who through his collection has contributed substantially to the knowledge of this group of insects. The data obtained and to join the collections of personal data between 2000-2011 we intend to achieve a more comprehensive study, which will be subject to further research on the evolution Macrolepidoptera over more than 104 years of research in the area of Forest "Dumbrava Sibiu".

MICROBIOLOGIE MICROBIOLOGY

Doboş Laura, Carmen Puia (University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca)
THE BACTERIA ISOLATED FROM OIL POLLUTED SOILS FOR BIOREMEDIATION.
BACTERIILE IZOLATE DIN SOLURILE POLUATE CU PETROL ÎN VEDEREA BIOREMEDIERII LOR

The microorganisms involved in the bioremediation, have a significant role in the biodegradation of petroleum hydrocarbons, degrading partially or completely and the result remained after their microbial activity is environmentally friendly. In this paper are presented the types of bacteria isolated and identified from oil polluted soil samples from two different sites - Ploieşti and Suplacu de Barcău. Each bacterial strain was morphologically (Gram staining and bacterial cell shape) and cultural (shape, pigmentation, gloss, profile, degree of transparency, edge of colony) analyzed. For identification bacterial genera was used the system API 20 E gallery.

ECOLOGIE ECOLOGY

Barbu Catalina Oana ("Stefan cel Mare" University of Suceava)
THE INFLUENCE OF WINDTHROW ON ECOPROTECTIVE FUNCTIONS OF THE FORESTS. CASE STUDY IN THE F.D. TOMNATIC, SUCEAVA COUNTY
INFLUENTA DOBORATURILOR DE VANT ASUPRA GRADULUI DE EXERCITARE A FUNCTIILOR PADURII. STUDIU DE CAZ ÎN O.S. TOMNATIC, JUDEȚUL SUCEAVA.

Wind damage is one of the major natural disturbances that can occur in most types of forests worldwide. In the last decades, we have witnessed a serious surge in windthrow occurrence caused by wind and snow which has resulted in damage to our forests. Wind damage results in both direct costs (serious financial loss, additional cost of harvesting and reduced timber value) and indirect costs (increasing erosion, impact on water regime, disappearance of original biotopes and species). This paper presents the calculus method of the GEF index as a way to quantify the impact of wind damages concerning the Norway spruce forests. This index can reveal real information concerning the forest ability to exert its ecoprotective functions and can be used as a additional index in the wind damages characterization.

Belingher (Chimerel) Mihaela Liliana, Chimerel Mircea Eleodor (Petroșani University)
SOURCES OF POLLUTION WITH NITROGEN COMPOUNDS AND THE REHABILITATION MEASURES OF GROUNDWATERS IN GORJ COUNTY"
SURSELE DE POLUARE CU COMPUȘI AI AZOTULUI ȘI MĂSURI DE REABILITARE A APELOR FREATICE DIN JUDEȚUL GORJ

The pollution of phreatic waters, of the underground environment as a whole, represent an environmental problem as new as it is complicated, in both terms of migration mechanisms of the different pollution substances, and the establishment and the application of some techniques and technologies that enable the bringing of qualitative parameters of the contaminated water in the limits imposed by a particular possession of these. The pollution nitrogen compounds affect aquatic and terrestrial ecosystems, endangering the human health and degrades the natural environment. Thus, the entering in the human body of the increased quantities of nitrates and nitrites proceeded from drinking phreatic waters, causing the conversion of some quantities of hemoglobin into methemoglobin. Methemoglobin can't bind and transform the oxygen into tissues, generating hypoxia. The methemoglobin concentration in blood depends by the content of nitrates and nitrites in the body. Disease occurs mainly on young children.

Belingher (Chimerel) Mihaela Liliana, Chimerel Mircea Eleodor (Petroșani University)
THE NITROGEN SOURCES AND THE BASIS OF THE NITRIFICATION-DENITRIFICATION PROCESS
SURSELE DE AZOT ȘI BAZELE PROCESULUI DE NITRIFICARE – DENITRIFICARE

Nitrate ion (azotate) has the chemical formula NO_3^- . Nitrate is the most oxidized chemical form of nitrogen found in natural systems. The nitrate is a negative ion (anion) and is coupled with positive ions (cations) forming salts such as KNO_3 potassium nitrate or sodium nitrate NaNO_3 . Nitrate ion is one of the most known water soluble anions. The nitrates are the most accessible form of nitrogen for plants and microorganisms.

Chimerel Mircea Eleodor, Belingher (Chimerel) Mihaela Liliana (Petroșani University)

EVALUAREA IMPACTULUI ASUPRA MEDIULUI GENERAT DE EXPLOATĂRILE MINIERE DE LIGNIT
FOLOSIND MATRICEA TIP LEOPOLD
ASSESSMENT OF IMPACT UPON ENVIRONMENT, IMPACT PRODUCED BY THE LIGNIT MINING
USING LEOPOLD MATRIX

These measurement systems, starting from Leopold matrix, are used currently in environmental studies and provide information with quantitative character founded on some note gave to each effect upon some environmental factors. Of course that the adjustment of notes is made by the study elaborator and from this point of view has a subjective character, but using the Expert experience and reliable input information, can be obtained anyway measurable conclusions that would otherwise have been quartered in the field of some generalities without examining rightly the effects and especially to propose works of impact reduction or measures for it's monitoring.

Chimerel Mircea Eleodor, Belingher (Chimerel) Mihaela Liliana (Petroșani University)

THE IMPACT REDUCTION OF MINING EXPLOITATIONS FROM ROVINARI AREA UPON THE
SURFACE WATER AND GROUNDWATERS
REDUCEREA IMPACTULUI EXPLOATĂRILOR MINIERE DIN ZONA ROVINARI ASUPRA APELOR DE
SUPRAFAȚĂ ȘI SUBTERANE

Rovinari area, because of the two major industries – mining and energetical – is one of the most affected area by human activities in our country. On these industrial activities is added also the urbanism growth from the last four decades, which also had a major impact on the surface and groundwaters. The mining activity, produced and will produce further changes of socio-economical and environmental conditions (including surface and groundwaters) in the area affected by lignite extraction by mining works on data.

Lăzureanu Aurel, Negrea Monica, Alexa Ersila, Alda S., Carciu Gh., Lăzureanu D., Crăciunescu A., Chisaliță I. (Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara)

MONITORING OF METALS ACCUMULATION (CU, CD, FE AND ZN) IN LEAFY VEGETABLES
SAMPLED FROM PRIVATE PRODUCERS IN THE WESTERN PART OF ROMANIA
MONITORIZAREA ACUMULARII METALELOR (CU, CD, FE ȘI ZN) ÎN LEGUMELE VERDEȚURI
PRELEVATE DE LA PRODUCATORII PARTICULARI DIN PARTEA DE VEST A ROMÂNIEI

This paper presents the study of different metals accumulation in leaf vegetables, lettuce and spinach under the conditions of western Romania. In the period 2005-2007 were sampled from food markets in Timisoara, lettuce and spinach, in order to determine their metal content. These vegetables come from private producers of Timis county localities: Gelu Jimbolia Dudestii Noi, Sanandrei, Cenad Utvin, Sacalaz, Dinias. Analyses were performed in the Laboratory of Chemistry of USAMVB Timisoara, using a spectrophotometer SpectrAA 220. Cadmium, copper and zinc did not exceed the maximum allowed value in any of spinach and lettuce samples analyzed but shows a lack of zinc and copper. Lead is found in excess, exceeding the maximum permissible limit of 0.5 ppm, but not exceeded the critical concentration of 20 ppm, for lettuce samples from the localities Jimbolia and Utvin. This excess is recorded throughout the period analyzed, 2005-2007. Spinach samples analyzed shows the same trend of higher levels of lead in samples from areas where there are roads with heavy traffic: Topolovat, Jimbolia and Utvin.

Lăzureanu Aurel, Alexa Ersila, Balint Alina, Carciu Gh., Alda S., Lazureanu D., Craciunescu A., Chisalita I., Cuc Liana (Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara)

MONITORING OF NITROGEN COMPOUNDS CONTENT IN UNDERGROUND WATER FROM TIMIS
RIVER
MONITORIZAREA CONTINUTULUI IN COMPUSI CU AZOT AL APEI FREATICE DE PE CURSUL
RAULUI TIMIS

The purpose of this paper is to present the results of monitoring the river Timis in terms of nitrogen content in the period 2009-2010. Experimental were determined nitrogen compounds (nitrate, nitrite, ammonium) in wells from five localities situated along the river Timis Slatina-Timis Caransebes Gavojdia, Cebza, Graniceri, points distributed between the source and the point out of the river, namely the border with Serbia. Samples determinations were done with the help of Spectrophotometer SQ 118. In autumn and winter months, concentrations of nitrogen compounds have maximum values and are due to frequent rainfall recorded during this period of year. Samples analyzed from drilling along the Timis River, are characterized with low nitrates and nitrites content, but with higher values of ammonium ion concentration. The existence of ammonium ion in water and absence of nitrates indicate a recent water contamination. When water contains both ammonia and nutrient indicates a pollution since that passed a

certain period. Lack of ammonia, but the presence of nitrates and nitrites, involves a contamination that occurred a long time ago. Therefore, in this time, water was self-cleaned.

Leah Tamara (Institute of Pedology, Agrochemistry and Soil Protection "Nicolae Dimo", Chişinău, Republic of Moldova)

THE CONTENT OF HEAVY METALS AND PESTICIDE RESIDUES IN SOILS OF MONITORING POLYGONS

CONȚINUTUL DE METALE GRELE ȘI REZIDUURI DE PESTICIDE ÎN SOLURILE POLIGOANELOR DE MONITORING

Research content of heavy metals in arable soils, carried out within 20 Monitoring polygons placed in all zones of Moldova, showed that concentrations not exceeding the Maximum admissible concentration (MAC) and can not be hazardous to the environment. The content of pesticide residues in soils showed a low concentration of DDT and HCH, which does not exceed the MAC. Remediation measures should target not only harmful to the removal of sources, but to include all measures to recover and restore affected agrochemical indices acquire their basic soil - fertility, as they are "cumulative deposits" and pollutant sources. Only a fertile soil has qualitative proprieties and "resistance" to the harmful effects of pollution degrading.



LUCRĂRI PREZENTATE POSTER

POSTER PRESENTATIONS

FITOPATOLOGIE PHYTOPATHOLOGY

Cârdei Eugen, Beșleagă Ramona (Research and Development Station for Fruit Tree Growing Iași)
PREVENTION AND CONTROL OF MAJOR PATHOGENS OF APPLE
PREVENIREA ȘI COMBATAREA PRINCIPALILOR PATOGENI AI MĂRULUI

Losses of production apple orchard are determined by various factors, one important role of pathogens (eg: powdery mildew and apple brown spot). Damage can be avoided by applying a combination of preventive measures such as cultivation of varieties with genetic resistance or tolerance to some pathogens, performing works plant hygiene, agro-chemical. The SCDP Iasi were some new fungicides used to prevent and combat the main pathogens of apple (Maccani, Flint plus, Folicur Solo), applied to some alterations in their moments of attack.

Gîtea M, Șcheau V., Bara V., Domuța C., Șcheau A., Bucurean Elena, Sarca Gh., Bara Camelia, Bara L., Brejea R., Borza Ioana (University of Oradea, Environmental Protection Faculty)
COMPORTAREA SOIURILOR DE MĂR REZISTENTE LA BOLI ÎN CULTURĂ SUPERINTENSIVĂ ÎN CONDIȚIILE DE LA ORADEA

Soiurile și hibrizii studiați se pot cultiva la 3/1m utilizându-se forme de coroană fus-tufă. Se pot obține producții medii pentru opt ani de rod de 48,8 t/ha la Florina, 46,2 t/ha la Auriu de Bistrița, 45,2 t/ha la Baujade, 44,8 t/ha la T195 și 42,3 t/ha la Liberty. Indicii de mărime și greutate ai fructelor, datorită densității ridicate de pomi la ha sunt influențați negativ nesemnificativ.

ENTOMOLOGIE ENTOMOLOGY

Badeanu Marinela, Daniela Suteu (University of Agricultural Sciences and Veterinary Medicine Iași)
SEASONAL DYNAMIC OF EARTHWORMS OF EISENIA FOETIDA (SAVIGNY-1826) (OLIGHOCHAETA-LUMBRICIDAE), IN A MANURE HEAP, IN THE FIELD.
DINAMICA SEZONIERĂ A POPULAȚIEI DE RÂME DIN SPECIA EISENIA FOETIDA (SAVIGNY-1826) (OLIGHOCHAETA-LUMBRICIDAE), ÎNTR-O PLATFORMĂ CU GUNOI DE GRAJD.

We monitored the population dynamics of Eisenia fetida (Oligochaeta, Lumbricidae) in a manure heap in the field during a year, to learn, the reaction of epigeic earthworms to the seasonal changes. We are taken the earthworms around the manure heap in October 2009 (from autumn), March 2010 (from winter), May 2010 (from spring) and August 2010 (from summer), to determine earthworm population dynamics. The Earthworms were sorted manually, of each manure sample, and were classified into different age classes: mature, juvenile, hatchling and cocoon. Seasonality had a strong effect on the density, biomass and reproductive activity of the population. The population of E. fetida was characterized by a high density of individuals and the predominance of mature individuals throughout the year. Maximum density, mating activity and size of cocoons were achieved in spring, but there were not changes in the number of cocoons per mature earthworm throughout the year.

Badeanu Marinela (University of Agricultural Sciences and Veterinary Medicine Iași)
RESEARCH ON TREE DIVERSITY IN A DECIDUOUS FOREST AND THE EARTHWORM COMMUNITIES EXISTING IN FOREST SOIL.
CERCETĂRII PRIVIND RELAȚIA DINTRE DIVERSITATEA SPECIILOR ARBORICOLE DIN PĂDUREA DE FOIOASE ȘI COMUNITATEA DE LUMBRICIDE EXISTENTĂ ÎN SOLUL ACESTEIA

The present study presents results of the influence of tree species diversity on the earthworm community in a Eastern Carpathian deciduous mixed forest. Earthworms were taken from soil, from May to November, were sorted manually and identified. The tree diversity is correlated with earthworm densities, indicating the importance of diverse food qualities for the decomposer fauna, especially in springtime. The forest is dominated by beech (Fagus sylvatica), ash (Fraxinus excelsior), hornbeam (Carpinus betulus), but locally a mosaic of up to 8-12 tree species occurs with varying composition. The present earthworm species are Dendrobaena octaedra var. typica, Lumbricus terrestris, Eisenia submontana, Octolassium lissaense, Eiseniella tetraedra typica, Lumbricus rubellus, Lumbricus castaneus.

Beșleagă Ramona¹, Cârdei Eugen¹, Tâlmăciu Mihai² (¹Research and Development Station for Fruit Tree Growing Iași, ²University of Agricultural Sciences and Veterinary Medicine Iași)

RESULTS ON THE EFFECTIVENESS OF NEW INSECTICIDES IN MAJOR PESTS OF APPLE
REZULTATE PRIVIND EFICACITATEA UNOR NOI INSECTICIDE ÎN COMBATAREA PRINCIPALILOR
DĂUNĂTORI AI MĂRULUI

In 2010, the SCDP Iasi were carried out research on testing the effectiveness of plant protection products. The experiment was conducted in experimental polygon, in an apple orchard, the variety Idared. Pests on which observations were made were: Cydia pomonella L., Adoxophyes reticulana, Panonychus ulmi, Phyllonorycter spp, and the products tested were: Affirm SG 095 and Voliam Targo SC 063.

Herea Monica, Tălmăciu Mihai, Tălmăciu Nela (University of Agricultural Sciences and Veterinary Medicine Iași)
RESEARCH ON KNOWLEDGE OF SPECIES OF INSECTS BELONGING USEFUL FAUNA IN SOME
CHERRY ORCHARDS FROM IAȘI COUNTY
CERCETĂRI PRIVIND CUNOAȘTEREA SPECIILOR DE INSECTE APARTINÂND FAUNEI UTILE ÎN
UNELE PLANTAȚII DE CIREȘ DIN JUD. IAȘI

Research on knowledge of useful species of insects was took place and during 2010 from: Stațiunea Didactică Vasile Adamachi Iași, Ferma Rediu și la Stațiunea de Cercetare Dezvoltare pentru Pomicultură Iași-Colecția Națională de Cireș. For catching insects in orchards we chose for two methods: Capture using traps soil type Barber method and beeting method .During the vegetation at traps type Barber have been collected insects at the following dates: 24.05; 09.06; 22.06;05.07. Through the beeting method have been captured insects on the following dates: 24.05; 09.06; 22.06; 14.07 and 30.07. The most frequently species was: Forficula auricularia L., Brachysomus echinatus, Podonta nigrita F., Attagenus piceus Olivier, Pyrrhocoris apterus L., ținand Carabus coriaceus L., Chrysopa carnea Steph., Coccinella 7 punctata L., Halyzia 12 gutatta and those family belonging: Formicidae, Anyhomyidae, Cicadellidae, Miridae, Lygaeidae.

Stancă-Moise Cristina („Lucian Blaga” University of Sibiu)
IUCN UNDER THE CLASSIFICATION OF THE DEGREE OF HAZARDS LEPIDOPTERA (INSECTA:
LEPIDOPTERA) COLLECTED FROM DUMBRAVA SIBIU FOREST DURING 2001-2010
CLASIFICAREA CONFORM IUCN PRIVIND GRADUL DE PERICLITARE AL LEPIDOPTERELOR
(INSECTA: LEPIDOPTERA) COLECTATE DIN PADUREA DUMBRAVA SIBIULUI ÎN PERIOADA 2001-
2010

Currently, fauna and ecological analysis of the landscape in which the reserves and Forest "Dumbrava Sibiu" shows a great scientific interest and practical for biological research in Sibiu. The results can contribute substantially to assessing the state of the world of insects and their evolution in the ecosystem studied, but also to establish their quantitative and qualitative changes over time. The data obtained and to join the collections of personal data between 2000-2011 we intend to achieve a more comprehensive study, which will be subject to further research on the evolution Macrolepidoptera over more than 120 years of research in the area of Forest "Dumbrava Sibiu". For some species have been listed by the IUCN recommended levels of endangerment in 2000 and 2001 Rákosy L.: extinct, taxon vulnerable, near threatened.

Șerban Cecilia (Natural Sciences Museum Complex of Galați)
THE STRUCTURE OF COREOIDS COMMUNITIES (INSECTA, HETEROPTERA, COREOIDEA) WITHIN
ANTHROPIZED MEADOWS IN THE LOWER BASIN OF THE SIRET RIVER
STRUCTURA COMUNITĂȚILOR DE COREOIDE (INSECTA, HETEROPTERA, COREOIDEA) DIN
PAJIȘTILE ANTROPIZATE LOCALIZATE ÎN BAZINUL INFERIOR AL RÂULUI SIRET

Our studies of the coreoids fauna within anthropized meadows in the lower basin of the Siret River were carried out between 2004-2005, 2007-2008. From the studied regions we have collected 82 specimens of coreoids pertaining to 14 species (25,45% of the entire amount of Coreoidea in Romania), 12 genera and 4 families. As compared to previously carried out studies, some rare species of coreoids from Romania are first reported in the lower basin of the Siret River and Moldavia: Agraphopus lethierryi Stal 1872 and Chorosoma gracile Josifov 1968 from Rhopalidae family.

Tălmăciu Mihai, Herea Monica, Tălmăciu Nela (University of Agricultural Sciences and Veterinary Medicine Iași)
CONTRIBUTIONS TO THE ENTOMOFAUNA STUDY OF SOME SWEET AND SOUR CHERRY
ORCHARDS AFTER TO APPLYING THE DIFFERENT METHODS OF CONTROL
CONTRIBUȚII LA STUDIUL ENTOMOFAUNEI DIN UNELE PLANTAȚII POMICOLE DE CIREȘ ȘI VIȘIN
ÎN URMA APLICĂRII DIFERITELOR METODE DE COMBATERE

Entomofauna study to the sweet and sour cherry orchards took place during 2010 in plantations belonging: Stațiunii Didactice „Vasile Adamachi” Iași, Stațiunii de Cercetare Dezvoltare pentru Pomicultură Iași, Rediu farm and S.C Loturi Service S.R.L. Delești, Vaslui. For harvestig the material were used to assess entomofauna were were used traps soil type Barber and beeting method .The species with the highest number of collected specimens were: Brachysomus echinatus Bonsdorff., Silpha carinata Herbst., Mylacus rotundatus F., Harpalus distinguendus Duft., Forficula auricularia L., Chrysopa carnea Steph., Stethorus

punctilum Weise. and those belonging to families Formicidae, Ichneumonidae, Cecidomyidae și Cicadellidae

Tălmăciu Mihai, Păduraru Laurențiu, Tălmăciu Nela (University of Agricultural Sciences and Veterinary Medicine Iași)

OBSERVATION ON USEFUL AND HARMFUL ENTOMOFAUNA WITH PREVENTION AND CONTROL MEASURES APPLIED IN APPLE ORCHARDS FROM IASI AND VASLUI COUNTIES

OBSERVAȚII CU PRIVIRE LA ENTOMOFAUNA UTILĂ ȘI DĂUNĂTOARE CÂT ȘI MĂSURILE DE PREVENIRE ȘI COMBATERE APLICATE ÎN PLANTAȚIILE POMICOLE DE MĂR DIN JUDEȚELE IAȘI ȘI VASLUI

Observations was made in the fruit farms belonging S.A. Loturi Service S.R.L. Delești, Vaslui country, Stațiunii Didactice Vasile Adamachi Iași and Stațiunea de Cercetare Dezvoltare pentru Pomicultură Iași in May-July 2010. For this it was made regular observations directly on the farm, and is also harvesting samples and evidence using the beeing method and traps soil type Barber, which were then analyzed in the laboratory. Specify that in the stationary from the "Stațiunea Didactica Vasile Adamachi Iași" samples collected was made from a apple orchards were not performed chemical and control treatments. The useful species who were reported during observation period was: Harpalus tardus, Harpalus aeneus, Harpalus distinguendus, Calathus fuscipes, Polydrosus marginatus, Cartodere elongata, Stethorus punctillum. The families to belonging the species collected are: Formicidae, Aphididae, Tipulidae, Miridae, Carabidae etc.

MICROBIOLOGIE MICROBIOLOGY

Bălan Mihaela¹, Cristica Mihaela, ¹Barbăneagră Tamara¹, Manoliu Al.² (¹"Al. I. Cuza" University of Iași, ²Institute of Biological Research, Iași)

THE ANALYSIS OF CELLULASES AND LIGNIN PEROXIDASE ACTIVITY IN *PHANEROCHAETE CHRYSOSPORIUM* GROWN ON MEDIA WITH FIR AND BEECH SAWDUST UNDER THE INFLUENCE OF SOME TRACE ELEMENTS

ANALIZA ACTIVITĂȚII CELULAZELOR ȘI A LIGNIN PEROXIDAZEI LA SPECIA *PHANEROCHAETE CHRYSOSPORIUM*, CULTIVATĂ PE MEDII CU RUMEGUȘ DE BRAD ȘI FAG SUB INFLUENȚA UNOR OLIGOELEMENTE

The purpose of this paper is the study on the influence of trace elements on cellulase and lignin peroxidase activity in Phanerochaete chrysosporium grown on media with fir and beech sawdust. In order to achieve research, carbon source was replaced from Sabouraud medium with fir and beech sawdust which were added separately and some trace elements such as: boron, molybdenum, manganese, lead, copper, zinc, iron, and a mixed solution with trace elements and control with no trace elements, resulting in final nine final working variants. Measurements were made at 7 days and 14 days after sowing. After analyzing the data obtained showed that the activity of cellulase and lignin peroxidase was stimulated in the second period in the presence of trace elements to both kinds of sawdust media. Boron was the most nutrient stimulus, while zinc and trace elements solution had an inhibitory effect.

ECOLOGIE ECOLOGY

Acatrinei Ligia¹, Ciornei Constantin² (¹Institute of Biological Research Iași, ² Forest Research and Management Institute Bucharest)

ECOPHYSIOLOGICAL ASPECTS OF *QUERCUS PETRAEA* IN FOREST ECOSYSTEMS FROM TROTUS VALLEY(BACAU COUNTY) UNDER CHEMICAL POLLUTION AND DEFOLIATING INSECTS ACTION

ASPECTE FIZIOLOGICE ASUPRA SPECIEI *QUERCUS PETRAEA* SUB ACȚIUNEA POLUĂRII CHIMICE ȘI A DEFOLIATORILOR DIN ECOSISTEME FORESTIERE DE PE VALEA TROTUȘULUI

The aim of this paper is to evaluate the ecophysiological responses of the Quercus petraea after twenty years of pesticides actions and air chemical pollution. Analyzed forests are situated in neighbourhood of Petrochemical Plant of Borzesti, Bacau County that produced oil petroleum products, pesticides (based on chlorine) and rubber. Response to stress induced by chemical pollution was evaluated based on analysis of physiological leaves of Q. petraea, related to entomological studies on defoliator populations that affected oaks forests in this part of Romania. Physiological researches the plant responses investigated the content of chlorophylls and carotenoids and the sugars metabolism. Entomological studies have assessed the level of Apethymus cereus infestation in oaks stand affected by this pest. Starting from a literature review, we discuss the possible roles of various abiotic (air pollution, climatic extremes, site

conditions) and biotic factors (insect defoliation) that have been related to oak decline observed in this part of East Europe.

Galan Cătălin, Dumitrescu Carmen, Carețu Georgeta, Atudosiei Nicole-Livia (Bioterra University Bucharest)
NEW EUROPEAN LEGISLATIVE STIPULATIONS REGARDING THE NOTION OF ECOLOGICAL AGRICULTURE AND THEIR INFLUENCE ON THE QUALITY OF FOOD PRODUCT
NOILE PREVEDERI LEGISLATIVE EUROPENE CU PRIVIRE LA CONCEPTUL DE AGRICULTURĂ ECOLOGICĂ ȘI INFLUENȚA ACESTORA ASUPRA CREȘTERII CALITĂȚII PRODUSELOR AGRO-ALIMENTARE

The paper makes an analysis of the main European legislative standards regarding ecological agriculture, increasing new stipulation adopted through the rule nr. 271, from 24th of March, 2010. In accordance with the new stipulations, consumers who buy ecological products marked by E. U.'s logo may believe that: least of 95% of ingredients have been made by methods and technologies agreed by the notion of ecological agriculture; product respects rules of official scheme of inspection; product proceeds direct from the producer or processor in a sealed package; product has the name of its producer, processor or seller and name or code of the organism which inspects and certifies.

Măciucă Anca, Daniela Lupăștean (Forestry Faculty Suceava)
WOOD ENERGY POTENTIAL AT REGIONAL LEVEL IN ROMANIA, IN EUROPEAN CONTEXT
UTILIZAREA LEMNULUI IN ROMANIA LA NIVEL REGIONAL CA SURSA DE ENERGIE REGENERABILĂ

The paper presents a case study on wood energy potential in Suceava County, in the frame of the increased interest on renewable energy development in Romania. The green energy sector development is favored by the recent development of legal regulation on European and national level, and is reflected in the on-going projects located in the higher rate forested Romanian counties. The study provides important and useful data on the actual situation in biomass end-use in Suceava County and the possibilities to increase the resources for producing wood energy.

Trincă Lucia Carmen¹, Volf Mariana¹, Avarvarei Ioan¹, Bianu Elisabeta², Căpraru Adina Mirela¹ (¹University of Agricultural Sciences and Veterinary Medicine Iași, ² Institute for Diagnosis and Animal Health, Bucharest)
COMMENTS ON CD AND PB CONCENTRATION IN SOME OF THE PLANTS AND FEED PRODUCTS FROM IASI AREA
OBSERVAȚII PRIVIND CONCENTRAREA CD ȘI PB ÎN UNELE PLANTE ȘI PRODUSE FURAJERE DIN ZONA IAȘULUI

Agricultural land pollution induces contaminants accumulation and determine the conversion to risk for food safety hazard. This paper presents results on Pb and Cd concentration in fodder and feed derived determined by SAA as part of a research project that proposes monitoring food safety in Iasi area for the whole circuit soil-plant-animal. Investigations focused both on the area of a farm situated on the outskirts of Iasi, near the plant that provides heat for the city and on that of a farm located about 100 km from Iasi. Cd concentration ranged from 15.76 to 270.38ppb, below the maximum allowed limit (1000ppb) and Pb content ranged from 304.06 to 893.78ppb, very significantly lower ($p < 0.001$) compared to maximum allowed concentration (10000ppb) according legislation. Monitoring Cd and Pb concentrations allowed to appreciate the forage capacity to translocate and accumulate contaminants depending on variety, soil type, climate and distance from the source that generates pollution.

Trincă Lucia Carmen¹, Volf Mariana¹, Avarvarei Ioan¹, Bianu Elisabeta², Căpraru Adina Mirela¹ (¹ University of Agricultural Sciences and Veterinary Medicine Iași, ² Institute for Diagnosis and Animal Health, Bucharest)
COMMENTS CONCERNING SE CONTENT VARIATION IN SOME PLANTS AND FEED PRODUCTS FROM IASI AREA
OBSERVAȚII PRIVIND VARIAȚIA CONȚINUTULUI DE SE DIN UNELE PLANTE ȘI PRODUSE FURAJERE DIN ZONA IAȘULUI

The paper presents results for Se concentration determination by AAS method in various plant and derived feed (corn seeds, corn green and prepared silage, Sudan herb, soy-green plant, green alfalfa, mown grass alfalfa, haw mowing, straw alfalfa and different mixt sillages) taken from a farm situated outskirts of Iasi, near the plant that provides heat for the city, and from a farm located about 100 km from Iasi. Se determination in the feed samples analyzed revealed three distinct situation in relation with Se recommended optimal content (150-300) ppb as follows: critical deficiency (10-100) ppb Se, marginal deficiency (100-150) ppb, respectively toxic level (300 ppb higher). 52.17% of the feed samples analyzed showed an appropriate concentration with variations ranging from 158.62 to 259.28 ppbSe, while 26.08% of the samples showed Se deficit content and 21.73% of the samples exceeded the content of the Se optimal concentration set between 150-300ppb.

4th SECTION

LANDSCAPE ARCHITECTURE

Moderatori:
Conf. univ. dr. **Doina Mira DASCĂLU**
Conf. univ. dr. **Jeni PRALEA**

Secretari:
Drd. **Alina Zaharia**
Drd. **Oana Cîrstea**



LUCRĂRI PREZENTATE ORAL

ORAL PRESENTATIONS

Chiriac Horia-Costin ("Gheorghe Asachi" Technical University Iași)

AESTHETICS AND SCIENCE IN KNOWLEDGE SOCIETY: THE CULTURAL ADVENTURE OF SCIENTIFIC IMAGINARY
ESTETICA ȘI ȘTIINȚA ÎN SOCIETATEA CUNOAȘTERII: AVENTURA CULTURALĂ A IMAGINARULUI ȘTIINȚIFIC

Knowledge society represents a type of social organization in which scientific imaginary dynamics has a quite important cultural influence, shaping the image of reality for large categories of people. In a society characterized by ambivalent postmodern attitudes regarding technology, even the emergence of new esthetical trends is sometimes influenced by scientific progress and by the birth of new types of forms. Therefore, the study of scientific imaginary dynamics could represent a good departure point in understanding some of the recent esthetical trends.

Ciobanășu Corneliiu ("Gheorghe Asachi" Technical University Iași)

ECOLOGICAL IMPACT OF SETTING UP AGROINDUSTRIAL FARMS IN PRUT RIVER MEADOW
IMPACTUL ECOLOGIC AL ÎNFIINȚĂRII UNOR FERME AGROINDUSTRIALE ÎN LUNCA PRUTULUI

On a land placed in location Moreni, commune Prisecani, two investors proposed a design to erect a complex for production of mushrooms, Agaricus Bisporus for population consumption at a national level as well as for export. The production capacity, on which the extent of the construction works is based, is 1500 tons/year mushrooms, in 8 production cycles. The site is on the right bank of Prut River at one hundred meter distance from NATURA Site, code ROSC10213. The estimation of the potential impact of the project on the zone was carried out by considering the activities involved by the project as well as the extent these activities should generate migrating emissions of pollutants, noise, destructions or modifications of the landscape directly or indirectly affecting the environment factors, population health state, terrestrial or aquatic flora and fauna in the implementation area of the project.

Dascălu Doina Mira (University of Agricultural Sciences and Veterinary Medicine Iași, Faculty of Horticulture)

GREEN ARCHITECTURE – FROM UTOPIA TO REALITY
ARHITECTURA VERDE – DE LA UTOPIE LA REALITATE

From visionary Austrian artist Hundertwasser utopias of the 70s, through fashionable postmodernist projects, to nowadays already built award-winning projects from contemporary ecologic architecture competitions: this is a long road, full of obstacles along, for green architecture concept. The paper analyses the change induced in the designer's awareness by the rise of pollution and the new attitude of few creators, architects-urbanists-landscapers, towards the future life in the urban space. In the development of such projects, landscape architecture has played and plays an important role, initially in outdoor and transition spaces, and now even the indoor structure.

Dascălu Doina Mira (University of Agricultural Sciences and Veterinary Medicine Iași, Faculty of Horticulture)

BALSH-STURDZA PALACE GARDENS IN IASSY
GRĂDINILE PALATULUI IEȘEAN BALȘ-STURZA

Often, the occasion of some buildings rehabilitation or restoration lead to the discovery of important details, far older than the original historical dating. This is the case of the imposing palace Balsh-Sturdza, today the Central Post Palace of Iassy. The main building was located in the middle of a wide enclosure, containing both the annex buildings and the boyar courtyard gardens. Deciphering data of nineteenth century plans, coupled with evidence provided by archaeological researches, led to the reconstitution of the old boyar courtyard plan organization.

David Tiberiu (University of Agronomic Sciences and Veterinary Medicine Bucharest)

**INFLUENCE OF THE MOBILITY ON HUMAN SETTLEMENTS DISTRIBUTION AND LANDSCAPING
INFLUENȚA MOBILITĂȚII ASUPRA DISTRIBUȚIEI AȘEZĂRILOR UMANE ÎN PEISAJ ȘI MOBILITATEA**

Modern times witness a complex process of organisation and modelling of territorial structures with a view to ensure the necessary framework for the development of human activities. A good territorial planning should resort to a dual approach, i.e. taking into account political, economical and social objectives on one hand, and the actual planning solution in the territory on the other, that ensures the preservation and proper valorisation of the landscape. It is necessary to develop a new approach in the design and execution of major road transport corridors; the correct insertion of major roads in the landscape should rationalise mobility, encourage proximity in an attempt to preserve and valorise the Open Space between urban and rural settlements. Current regulations for the efficiency of surface intermodal transport provide a wide range of opportunities for landscape architects to design new facilities for pedestrians, cycling and other motorised/non-motorised transport means.

Pralea Jeni, Balan Ilarion Constantin („George Enescu” University of Art Iași)

**TRADITIONAL ECOLOGICAL WOOD JOINTS USED IN MODERN FURNITURE CONCEPTS
ÎMBINĂRI ECOLOGICE TRADIȚIONALE FOLOSITE ÎN CONCEPTELE MODERNE DE MOBILIER**

Theoretical and practical research made on ecological concepts and Romanian traditional products from different areas of the country have brought to light the idea of reinventing such concepts of products friendly to the ecosystem by means of their constructive nature, their technology and the materials used. This research underlines the ecological role of traditional types of wood joints and the possibility of adapting them to create new types of multifunctional furniture. With these wood joints we can create furniture objects for landscape arrangements in different styles.

Pralea Jeni, Stanciu Silviu Teodor („George Enescu” University of Art Iași)

**FUNCTIONAL AND AESTHETIC ADAPTATION OF CONVENTIONAL PUBLIC MEANS OF
CONVEYANCE INTO THE URBAN LANDSCAPE
ADAPTAREA FUNCȚIONALĂ ȘI ESTETICĂ A MIJLOACELOR DE TRANSPORT PUBLIC
CONVENȚIONALE LA PEISAJUL URBAN**

Taking into account the principles of eco-design, the present paper speaks of the redesign of a public means of conveyance starting from existing mechanical elements, but having an up-to-date body. The design uses, in a proper way, a part of the main constructive elements, reinventing a new concept, adapted to the urban landscape. The paper presents the manner in which a product can be modernized by maintaining certain landmarks and technologies for maximum economic efficiency and by creating an ecological product.

Purcaru (Grecu) Codrina (“Gheorghe Asachi” Technical University Iași)

**NATURAL VENTILATION EVOLUTION AND INFLUENCE ON BUILT LANDSCAPE
EVOLUȚIA VENTILĂRII NATURALE A CLĂDIRILOR ȘI INFLUENȚA ASUPRA PEISAJULUI CONSTRUIT**

In the context of sustainable objectives of Florence Landscape Convention 2000, this paper underlines alternative solutions to the green rehabilitation design. There are very ancient details for the natural ventilation in the cities which can be used nowadays as an inspiration reservoir in the bioclimatic architecture. The goal is to create a sustainable urban landscape without pollution.

Șoltuz Elena, Pralea Jeni („George Enescu” University of Art Iași)

**STUDIUL ERGONOMIC PRIVIND LOCURILE DE STAT DIN DOMENIUL PROIECTĂRII PEISAGISTICE
ERGONOMIC STUDY ABOUT SITTING PLACES IN LANDSCAPE DESIGN DOMAIN**

Applying ergonomic principles in landscape design can have as an area of interest the organization design phases and the implementation of design concept. This paper analyzes both the principles of organization of workspace for employees who design architectural landscape. This study highlights a problem, related to some concept rules of a design that can be useful in landscape architecture domain.

LUCRĂRI PREZENTATE POSTER

POSTER PRESENTATIONS



Dobrescu Eleonora, Georgescu M., Dumitrașcu Monica, Stănescu Anca, El Shamali S. (University of Agronomical Sciences and Veterinary Medicine Bucharest)

RESEARCH ON REINFORCING PLANTED EMBANKMENTS - ASSOCIATION OF GEOSYNTHETIC MATERIALS WITH THE VEGETAL MATERIAL
CERCETARI PRIVIND CONSOLIDAREA TALUZURILOR VEGETALIZATE- ASOCIEREA MATERIALELOR GEOSINTETICE CU MATERIALUL VEGETAL

The research refers to the assessment and analysis of two case studies with small surfaces, but with different field situations. Both studies refer to the landscape arrangement of two sites, one with a sloping land (less than 40%), other relatively flat, but with the need to create an artificial embankment over 50%. The proposed theme consists in the optimum exploitation of the land that is destined to landscape design through modeling and consolidating the slopes with different inclinations, followed by planting on the embankment resulted from a vertical systematisation of the land. The purpose of this research is to verify in practice the result of two different technologies for building embankments with different declivities using geosynthetic Tenax materials associated with plant species meant to consolidate the embankment. The two technologies use materials agreed by the Ministry of Environment and do not endanger the ecosystem of the studied area. The results of the research contribute to the widening of the spectrum usage of the geosynthetic materials applied for consolidating the existing embankments in the landscape design, and to verify in practice the viability of the embankment strengthening systems and supervising the development of some consolidation embankment species over a year.

Gavat Corina (Research Station for Fruit Tree Growing Constanta)

MODALITĂȚI DE AMENAJARE A GRĂDINILOR ÎN JURUL UNOR LOCUINȚE URBANE
POSSIBILITIES OF DESIGNS IN URBAN GARDENS

The design of gardens has increased in the last few years on the coastal areas of Romania. According to the architectural style, stationary conditions and client requirements a case study was carried out in order to create a harmonious garden. The garden is placed in Constanța and it has a surface of 450 m². A mixt style was adopted, with asimetric design and low maintenance planting. The ideas of garden design shown the possibilities as these proposals can be adopted in other practical situations.

Negrea Roxana, Cristina Zlati (University of Agricultural Sciences and Veterinary Medicine Iași, Faculty of Horticulture)

TREE FOLIAGE, AS MAIN SOURCE OF COLOR IN LANDSCAPE COMPOSITION
FRUNZIȘUL POMILOR, PRVIT CA PRINCIPALA SURSĂ DE CULOARE, FOLOSITĂ ÎN COMPOZIȚIILE PEISAGERE

Colour is a controversial topic. In fact there are not two people to perceive colours the same, and therefore the harmony of colours can be easily applied in landscape arrangements. To this end in this paper we conducted a study on how the leaves colours provides a decorative effect that lasts more in gardens than in other compositional elements. Colour, although it is fleeting and capricious, can generally be used as a good background for proper closure of a perspective, could be an important focal point, also well-placed decorative masses through the foliage, creates a pleasant garden, decorative, throughout all twelve months of the year.

Poșta Daniela Sabina (Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara, Faculty of Horticulture and Forestry)

THE LANDSCAPE MIXT STYLE FOR A SOCIAL COMPLEX OF APARTMENTS BLOCKS
AMENAJAREA ÎN STIL MIXT A UNUI COMPLEX DE LOCUINȚE SOCIALE

The surface to be arranged is a plot of arable land removed from agricultural use as CF A landmark 7855 and number 648/1/17 belonging Giarmata village. Total surface area to be arranged is 16 585 m². The solution adopted is to split the land into three zones, one main and two mixed style amenated side's play area designed in the style and the dull sports landscape and vegetable garden which has been adopted geometric style.

Zlati Cristina, Roxana Negrea, Lucia Draghia, Doina Mira Dascălu (University of Agricultural Sciences and Veterinary Medicine Iași, Faculty of Horticulture)

PRACTICAL SOLUTIONS IN CHOOSING PLANT COMPOSITION FOR LANDSCAPING

SOLUȚII PRACTICE ÎN REALIZAREA UNOR COMPOZIȚII VEGETALE PENTRU AMENAJĂRILE PEISAGISTICE

In landscaping can be used several types of plants designed to give the space a dinamis in shape and colour. They form a pleasant ambience, ensuring unity of the whole oveall. One way to influence the image of a planted area is by creating a game between color and texture, shadow and light. Thus, the methods used in determining the plant composition for landscaping may be used seasonal planting schemes or planting schemes using dominant colors. The effect is that we get a focal point but other colors than the dominant one can be placed in smaller, contrasting groups using species with decorative foliage or fruits. When used in this way, the colors used quantitatively less do not compete but increase the decorative effect. For each planning the approach is different because the environment is unique, so the solution will be unique. The present paper wants to offer concrete solutions to create harmonious plant compositions more easily addressed by practitioners.