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ORAL PRESENTATION**(O-01) mHEALTH – A NEW MEDICAL CONCEPT****Adrian TASE** ^{1,2,*}¹University of Pitesti, Romania²Emergency Hospital Arges, Romania* Corresponding author: agtase@yahoo.com

Growing interest in preserving health status outside clinic along with technologic progress in the field of wearable mobile devices (WMD) gave birth and developed the mHealth concept. WMD gather informations about representative variables for vital functions, like the rhythm regularity and heart rate, in order to promote a healthy behavior, early detection of cardiovascular (CV) disease, and optimization of current care.

The challenges and advances with WMD were designed to assess and promote physical activity and fitness, as well as rhythm and heart rate monitoring for early detection and atrial fibrillation management.

As well as contemporary cardiology, CV mHealth is patient-centered.

Among various WMD we can mention: the ECG patch leadless monitor, the smartphone investigational app coupled to photoplethysmography kamera, the Kardia Band, the investigational smartwatch which combines continuous photoplethysmography with electrodes for on-demand one lead ECG acquisition.

To conclude, mobile tech entered CV medicine, with opportunities and challenges, and also with impact over CV disease and prevention. There is need for additional work to provide equitable acces, stronger connexions to guidelines, real integration in clinical care.

**(O-02) SELF-MANAGEMENT SUPPORT INTERVENTIONS
INTEGRATED INTO OCCUPATIONAL THERAPY
PRACTICE WITH PEOPLE HAVING TYPE 2 DIABETES****Mariana Ionela TUDOR^{1*}, Constantin CIUCUREL¹,
Elena Ioana ICONARU¹**¹University of Pitesti, Faculty of Sciences, Physical Education and Informatics, Department of Medical Assistance and Physical Therapy, Pitesti, Romania* Corresponding author: margotudor@yahoo.com

The therapeutic approach of patients diagnosed with type 2 diabetes is complex and multidisciplinary. Complementary to specific medication, patients' self-management education and support became key interventions to empower individual to engage in healthy lifestyle behaviours. Evidence suggests that there are many barriers to successfully integrating these strategies into clinical practice. Also, therapy is more efficient when people get support to continually engage in effective self-management behaviours. Through a case-study research, we aimed to explore the impact of an individualized occupation-based support intervention on the clinical state and quality of life of a 43 years old woman with type 2 diabetes, obesity and retinopathy. Following the initial assessment of functional status, quality of life, performance and satisfaction in daily occupations, a six months intervention plan was developed. Through therapeutic education, time management and occupation analyse, we considered integrating the medical recommendations (drugs administration, weight control, blood glucose monitoring and physical activity) into the daily routine of our client. After revaluation, the obtained results indicate significant improvements in client's occupational profile, health and quality of life. Our study provides evidence that supports the beneficial role of the proposed occupational therapy intervention in the clinical management of the patient with type 2 diabetes.

**(O-03) EVALUATION OF YIELD AND FRUIT QUALITY OF
SOME APPLE CULTIVARS GRAFTED ON DIFFERENT
ROOTSTOCKS****Aydin UZUN^{1*}, Ahmet KANTEMİZ¹, Hasan PINAR¹**¹ Erciyes University, Department of Horticulture, Kayseri-Turkey* Corresponding author: uzun38s@yahoo.com

Apple (*Malus domestica* Borkh.) is one of the most economically important pome fruits worldwide and Turkey. Domesticated apples have been cultivated since ancient times and are now produced in a range of area from Siberia with freezing temperatures to some equatorial locations with high temperatures. Using rootstock is one of the most important factors in apple cultivation and adaptation to stress conditions. Rootstock also affects yield and fruit quality. In this study, the effects of dwarf and semi-dwarf rootstocks on different apple cultivars were investigated in Kayseri-Turkey conditions. Three rootstocks (M9, M26, MM106) and four apple cultivars (Braeburn, Granny Smith, Spur Golden, Starking Delicious) were used in the study. The plants used in the study are 4 years old. Rootstocks effects of yield, fruit weight, fruit length, fruit width and total soluble solids of apple cultivars were investigated. There were significant differences for investigated characters except fruit width among studied rootstock/scion combinations. Braeburn/M9 combination was the best one for yield (23,4 kg/tree) whereas Starking/M9 had the lowest value (10 kg/tree). Fruit weight of combinations ranged between 169,6 (Granny Smith/M26) and 196,7 g (Spur Golden/M26). This study conducted that rootstocks effected (positively or negatively) yield and fruit quality of apple cultivars.

**(O-04) FRUIT CHARACTERISTICS OF WILD PLUM
(*PRUNUS DIVARICATA* LEDEB.) GENOTYPES
NATURALLY GROWING IN HIGH MOUNTAINOUS AREAS
OF CENTRAL ANATOLIA**

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Prunus divaricata is a wild plum species also known as cherry plum within the Rosaceae family. This species is wild growing, diploid, self-incompatible fruit tree that widely distributed from the Balkan Peninsula across Anatolia and the Caucasus to Central Asia, including northern Iran. Grow as shrub or small tree, 2-4 m; weakly thorny, young shoots and buds glabrous. Fruit is the species 10-15 x 8-12 mm; globose or ovate, pendent, yellow, red or pink. In this study some fruit characteristics of *P. divaricata* genotypes naturally growing at 2200 m of altitude. Thirteen genotypes were evaluated and significant differences were found for fruit parameters. Fruit weight of studied genotypes ranged between 1,19-3,68 g. Pedicel length of genotypes changed from 9,20 to 15,85 mm. Total soluble solids (TSS) of wild plums varied between 12 and 27%. Flesh ratio also showed significant differences from 21,0 to 62,5%. Fruit shell color of genotypes changed between claret red and light red. High level of variations found among *P. divaricata* genotypes may be due to seed propagation. Diversity of this species should be conservation and may be use to increase variation in cultivated *Prunus* species.

**(O-05) INDUCED SYSTEMIC RESISTANCE BY PLANT
GROWTH-PROMOTING RHIZOBACTERIA CONTROL OF
PLANT DISEASES****Hacer Handan ALTINOK^{1*}, Hatice Nilüfer YILDIZ²**¹Erciyes University, Agricultural Faculty, Plant Protection Department, Kayseri, Turkey²Biological Control Research Institute, Adana, Turkey* Corresponding author: ahandan@gmail.com

PGPRs (Plant Growth Promoting Rhizobacteria) found in rhizosphere of plants are able to promote plant growth as well as provide protection against diseases by triggering the defense mechanisms of plants. Today, commercialized products of *Bacillus*, *Pseudomonas* and *Streptomyces* species are successfully used to control plant pathogens. Salicylic acid (SA), Jasmonic acid (JA) and ethylene (ET) signaling components are playing an important role in regulation of resistance in plants against various pathogens. SA plays role on pathogen-induced systemic acquired resistance (SAR), while JA and ET take place as key regulators in induced systemic resistance (ISR) promoted by rhizobacteria. Both forms of induced resistance are effective against wide range of pathogens. Several potential defense mechanisms like chitinase, β -1,3 glucanase, pathogenesis-related proteins, phytoalexin accumulation, lignin, callose and hydroxyprolin-rich glycoprotein, protective biopolymer coating are activated in ISR. Siderophores produced by *Pseudomonas* are able to prevent germination of fungal pathogen spores by binding the iron needed by pathogen. PGPR strains are able fix nitrogen, dissolve phosphate, exhibit protease activity and produce siderophores. Hydrogen cyanide may provide the control of some fungal and bacterial diseases by triggering synthesis of peroxidase and catalase defense enzymes. This study primarily focused on roles of PGPRs in ISR.

(O-06) MODES OF ACTION OF ENTOMOPATHOGENIC FUNGI

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Commercial formulations of entomopathogenic fungi are successfully applied as an alternative to chemical agents in control of agricultural pests. Entomopathogenic fungi infests the host insects via digestion, respiration and through integument. In infestation from integument which is one of the most common infestation methods, fungi grows hyphae to penetrate epicuticle and progresses towards hypodermis, to achieve the infestation. Anamorphic fungi like *B. bassiana* and *M. anisopliae* primarily propagates as blastospores rather than hyphal development and these blastospores invade the vital organs by dispersing across the insect body via circulation of hemolymph within body cavity and eventually result in death of insect by clogging the circulatory system. The fungus moves to facultative feeding phase after death of host and initiates hyphal development outwards the integument, builds massive amount of spores. Conidiospores found on conidiophores are utilized to establish new infestations. Some entomopathogenic fungi are capable to kill the host even faster by excreting some mycotoxins (like beauvericin, cyclodepsipeptide, destruxin and desmethyldestruxin) at earlier stages of the infestations. Toxigenic fungi are able to kill the host earlier, compared to non-toxigenic species. In this study, information on the mechanisms used by entomopathogenic fungi for infestation of their hosts are presented.

**(O-07) IMPORTANCE OF BRAND GEOGRAPHICAL
AGRICULTURAL PRODUCTS IN THE PROMOTION OF
AGRI-TOURISM IN TURKEY**

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High-quality agricultural products that show the best suitability to prevalent natural conditions; namely, climate and topographical conditions of a particular geographic area, are products with geographical potential in the region. In order to protect the natural environment and human health, fertilizers and intensive agricultural techniques are the least used. The effect of natural conditions on agricultural production is dominated by a certified form of agriculture. The potential of organic agricultural products to be a geographic brand name becomes quite high and is of great importance.

Agricultural tourism, which an alternative type of tourism, is seen beneficial in many aspects especially in the areas where other types of tourism such as sea tourism are intense. Agricultural tourism practices contribute to the preservation of rural/natural characteristics of the regions by reducing the pressure of the current tourism events on the environment. On the other hand, opening up new economic activity venues for the rural areas would eventually lead to accelerated rural development. The role of brand products bearing geographical signs in agricultural tourism is paramount. Participants travel to the regions where agricultural products with geographical brand names are grown to participate in on-site experiences, cultivation, and harvesting activities. They participate in productive economic activities and at the same time have the opportunity to be acquainted with the historical and cultural values and heritage of that particular region. An increase in the role of agricultural life as a geographical brand name will reduce the environmental pollution originating from agriculture and will contribute to the development of agricultural tourism.

In this study, we have examined the geographical origin of brand agricultural products in Turkey. Also, their contribution to agricultural tourism was examined.

(O-08) FOREST IS NOT ONLY WOOD: EVALUATING NON-TIMBER PRODUCTS FROM DAMBOVITA COUNTY**Cosmin BRAGĂ¹*, Lucian DINCĂ¹**¹“Marin Drăcea” National Institute for Research and Development in Forestry, 13 Closca Street, 500040, Brasov, Romania* Corresponding author: braga_cosmin@yahoo.com

During the last decades, the global interest towards non-timber products (NTp – forest fruits, medicinal plants, edible mushrooms, game products, etc.) has considerably increased, especially due to their curative qualities. Characterised by a varied geomorphology, Romania has at its disposal, besides its wood resource, a considerable quantity of NTp capitalized especially on the external market. Furthermore, this niche is not capitalized at its existent potential as the main used forest resource is wood production. The aim of this study was to identify the main NTp together with their management efficiency, focusing on Dambovita County. In order to determine the most important NTp, a decision analysis process with multiple criteria was used (AHP) which are done with specific software (ECP). Using eight NTp and nineteen criteria, for this region, we found that NTp with the highest potential was the dog rose (*Rosa canina* L.) and the lowest potential was blackthorn (*Prunus spinosa* L.). This process has offered substantial information regarding the possibility of exploiting forest fruits, as well as how to manage best their harvesting. The obtained results have shown that the methods used for harvesting NTp are complex so that their management can be improved in order to increase their source of income. In conclusion, we consider necessary the adoption of measures in regard with the efficiency of NTp production as a mean of future economic-ecologic advantages. Further, the non-timber forest products can have a favourable impact on the local community (generate profits) and positive effect for biodiversity and forests ecosystem functioning.

**(O-09) CURRENT STATUS OF FSC FOREST
CERTIFICATION WORLDWIDE****Florin CAPALB¹, Cristian Mihai ENESCU^{2*}**¹Faculty of Agriculture, Forestry Specialization, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăști Boulevard, Bucharest-011464, Romania²Department of Soil Sciences, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăști Boulevard, Bucharest-011464, Romania* Corresponding author: mihaienescu21@gmail.com

Globally, the FSC-certified forest area accounts for around 200 million hectares which are distributed across 85 countries. At regional level, the largest certified FSC forest areas are found in Europe and in North America, while Oceania holds the smallest certified forest area. The purpose of this study was to highlight the dynamics of certified forest areas as well as the evolution of the number of the chain of custody certificates issued worldwide between 2012 and 2018. An increase of approximately 35% of certified forest area, and an increase of about 60% of the number of chain of custody certificates were recorded in the timeframe taken into consideration. The country with the largest certified FSC forest area is Canada, which has about 53.9 million hectares, followed by Russia with about 46.9 million hectares of FSC certified forests, in total the both countries sharing half of the worldwide certified forest area. Worldwide, the FSC certified forest area accounts for approximately 5% of the total area of the world's forests.

**(O-10) FSC CERTIFIED CORK OAK PRODUCTS: A
CURIOSITY ON THE INTERNATIONAL MARKET****Lucian CIOACĂ¹, Cristian Mihai ENESCU^{2*}**¹Faculty of Horticulture, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăști Boulevard, Bucharest-011464, Romania²Department of Soil Sciences, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăști Boulevard, Bucharest-011464, Romania* Corresponding author: mihaienescu21@gmail.com

The cork oak (*Quercus suber* L.) is famous for its suberous bark which is used in many industries worldwide. Portugal and Spain are the main two countries that provide this raw material. The demand for certified cork and cork products on the international market is rising. The aim of this study was to highlight the FSC certified market of the cork products. The information available on the FSC website (www.info.fsc.org) was centralized and the companies having a valid Chain of Custody (CoC) certificate for the product N3 Cork and articles of cork were taken into consideration. Most of the companies are located in Europe (especially in the Netherlands, Portugal and Germany), followed by the ones from Asia. We believe that the results of this study could be useful to companies that use cork and cork products, on one hand, or to companies that plan to do business in this field, on other hand.

**(O-11) ASPECTS REGARDING THE CAUSES OF THE
DEGRADATION OF SOME HYDROTECHNICS WORKS
EXECUTED IN ANIES WATERSHED**

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The current state of forests reflects, on the one hand, its natural evolution under the specific environmental conditions, but it is mostly determined by the way it was managed. Among the consequences of forest evolution under the influence of the anthropogenic interventions one can mention the large number of torrential formations in a relatively well-forested area, the large-scale occurrence of blow-downs, the lowering of the altitude limit of forest vegetation, the disappearance of the woody vegetation in the alpine blank and the accretion of the riverbed. The hydrographic basin Anieșul Mare has an elongated shape, but with short and rapid slopes, leading to rapid concentration of water resulted in torrential rains in the main bed and favors the production of torrential floods. At the same time, the exposure of appreciable areas due to blow-downs and the agglomeration of appreciable quantities of wood that required skidding, tractor-drawn and transportation favored the torrential flow of some streams, such as: Izvorul Butucilor, Mihaiasa and Paraul Popii. Besides the degradation of the landscape in the hydrographic basin, these torrential processes have resulted also in partial or total damage or the decommissioning of existing torrent correction works.

**(O-12) PASTORALISM IN ALPINE AND SUB-ALPINE
GRASSLANDS. CASE STUDY: SOUTH-WEST FĂGĂRAȘ
MOUNTAINS****Marilena ONETE^{1*}, Dumitru ZAHARIA², Minodora MANU¹,
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Indigenous temperate grasslands around the world are ecosystems under high alteration. Temperate Grasslands are defined as areas of grass and graminoid-dominated indigenous ecosystems occurring also (but not exclusively) in temperate high mountains above the regional tree line.

In our days the focus is on market economy thus, pastoral use is seen as a direct use without grassland conversion, sometimes is seen as the most sustainable production system. The problem of increasing the pastoral value of the grasslands has a great importance both for capitalization of cheap fodder resource and for grasslands' multifunctionality maintenance.

In some grassland from Făgăraș Mountains we used the methodology for calculating pastoral value of grassland. The studied grasslands are the subject of grazing impact but also comprise habitats deserving protection and conservation.

Our site specific and regional landscape level case study research can contribute to the understanding of grassland value and the results can be applied in developing and applying conservation tools to grasslands.

**(O-13) NANOTECHNOLOGY IN FOOD INDUSTRY –
OPPORTUNITIES AND RISKS**

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Nanoscience and nanotechnology have already been applied in various fields, such as computer electronics, communication, energy production, medicine and food industry.

Nanotechnology is becoming increasingly important for the food sector. Promising results and applications are already being developed in food safety areas. Nanotechnology applications in food industry include: encapsulation and delivery of substances in targeted sites, increasing the flavor, introducing antibacterial nanoparticles into food, enhancement of shelf life, sensing contamination, improved food storage, tracking, tracing and brand protection. Also, the incorporation of nanomaterials into food packaging is expected to improve the barrier properties of packaging materials and should there by help to reduce the use of valuable raw materials and the generation of waste. Nano food packaging materials may extend food life due to high barrier packaging, improve food safety, alert consumers that food is contaminated or spoiled, repair tears in packaging, and even release preservatives to extend the life of the food in the package. Nano food processing and products can change the color, flavor, or sensory characteristics; they also change the nutritional functionality, removes chemicals or pathogens from food. The use of nanotechnologies in the food industry must be done carefully so as not to exceed food safety barrier.

**(O-14) GAME SPECIES' FOOTPRINT ON THE TOPONYMY
OF ROMANIAN LOCALITIES**

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According to paragraph (3) of Article 58 of Romanian Forest Code (Law no. 46 from 2008), game species are among the most common non-wood forest products from Romania. The current territory of Romania is the home of a significant number of wild animals, including species of large carnivores of European interest. The purpose of this paper was to highlight the relation between the names of the localities and the common names of the wild animal species found in Romania. The names of six percentages of the total number of the localities across Romania are related with the names of game species, most of them being reported in the case of Argeș County (Central Romania). Among the Romanian wild fauna, the representatives of Falconidae, Cervidae, Canidae and Ursidae families were the most common ones. Based on the results of this study, we can conclude that the games' footprint in the toponymy of Romanian localities is a strong one.

**(O-15) DIVERSITY AND CHARACTERISTICS OF FOREST
SOILS FROM SĂLAJ COUNTY****Cristian Mihai ENESCU^{1*}, Lucian DINCĂ¹**¹Department of Soil Sciences, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăști Boulevard, Bucharest-011464, Romania*Corresponding author: mihaienescu21@gmail.com

It is well known that the forest soils represent the key element of the forest site, the knowledge of their diversity and characteristics being crucial for a sustainable forest management perspective. The purpose of this study was to highlight the diversity of the forest soils from Sălaj County. Special attention was also given to typical soil characteristics, such as soil pH and humus content. Data from the forest management plans issued between 1989 and 2012 of the state-owned forest districts within Sălaj Forestry Directorate were taken into consideration. The most common forest soils across Sălaj County were the preluvisols, luvisols and eutric cambisols. High amplitude was recorded both in the case of the soil reaction and humus content. In general, the forest soils across Sălaj County are favorable for the main tree species from the region, namely the oaks, mainly sessile oak [*Quercus petraea* (Matt.) Liebl.] and Turkey oak (*Q. cerris* L.), and the beech (*Fagus sylvatica* L.).

**(O-16) DETERMINATION OF PHENOLOGICAL
CHARACTERISTICS OF SOME LOCAL GRAPEVINE
GENOTYPES COLLECTED FROM GESI REGION OF
KAYSERI-TURKEY**

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Grape is the most produced fruit crop in Turkey. It is widely cultivated in the Aegean, Mediterranean and inner regions. Turkey has rich genetic diversity of grapes. Kayseri region has been a vineyard area since ancient times and has a significant variation. This study was carried out in the vineyard areas determined and representing in Gesi region of Kayseri province in 2018. A total of 9 different local grape genotypes which is known, and widely used by the local people for many years used in this study. During the vegetation period, bud burst, full bloom and maturity time observations were recorded as day / month. According to results, differences were found among local genotypes in terms of phenological stages. The earliest bud burst was recorded on 27 March and the latest bud burst was observed on April 2. The full bloom time has ranged from June 2 to June 8 among to genotypes. Maturity time of genotypes ranged from 15 September to 20 September. This study conducted that, local grape genotypes had the variation for phenological characters, and they may be useful for further studies.

**(O-17) ORGANIC AGRICULTURE MARKETING AND ITS
E-COMMERCE APPLICATIONS IN TURKEY****Güzide Öncü EROĞLU PEKTAŞ^{1*}**¹Istanbul University-Cerrahpaşa, Avcılar Centre Campus,
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With the rapid increase in the world population, food resources in the world are also faced with the dangers of being extinct. Organic agriculture is on the rise and has a very important place in the future of sustainable agriculture. That is valuable for human health and adequate nutrition. In addition to offering a healthy diet, organic agriculture also has important functions in terms of the protection of rural areas, tourism activities, and the promotion of a country. In today's world where health problems are increasing day by day, people are searching for ways to sustain a healthy life bursting with activities. One of these activities is the increased organic agricultural products, enjoying the mobility in the market place, the accompanying competitiveness, and having access to them employing alternative distribution channels in the market.

In this study, the size of organic farming activities in Turkey is the subject of examination. Attention will be focused on: the effect of geographical indicators on the production of brand name agricultural products as a subject of human and economic activities Also, the implementation of e-commerce will be tested as valid marketing tools for promoting these products, Finally, Case studies for the dissemination and adoption of such topics will be performed.

**(O-18) VARIATION IN HAY YIELD AND QUALITY OF
HUNGARIAN VETCH (*VICIA PANNONICA* CRANTZ)
GENOTYPES**

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Objectives of the present study was to determine the variations in hay yield and hay quality of different Hungarian vetch genotypes. Experiments were conducted for three years in 2014-2015 and 2016 in randomized blocks design with three replications. A total of 5 Hungarian vetch cultivars and 5 Hungarian vetch local Hungarian vetch were used as the plant material of the experiments. Genotypes on herbage hay yield and hay quality of Hungarian vetch were found to be highly significant ($P<0.01$) and the years were on yield and chemical composition were found to be highly significant ($P<0.01$). Present finding revealed that that plant hight of the Hungarian vetch genotypes varied between 90.31 and 105.20 cm, green herbage yield between 1429.58 and 1936.22 kg/da, hay yield between 298.28 and 380.66 kg/da, crude protein yield between 50.81 and 77.06 kg/da, crude protein ratios between 15.50 and 20.89 kg/da, crude ash ratios between 7.32% and 8.75%, ADF ratios between 34.32% and 40.74%, NDF ratios between 46.36% and 50.01%, DMD ratios between 57.44% and 62.16%, DMI ratios between 2.41% and 2.60% and RFV between 106.73 and 124.65 depending on the cultivars. Local Hungarian vetch genotypes were found to be prominent with yield and crude protein ratios and they will be use to breeding program

**(O-19) VARIATION IN GRAIN FEED QUALITY OF
DIFFERENT MAIZE CULTIVARS****Mahmut KAPLAN^{1*}, Kagan KOKTEN²**¹University of Erciyes, Faculty of Agriculture, Department of Field Crops, Kayseri, Turkey²University of Bingöl, Faculty of Agriculture, Department of Field Crops, Bingöl, Turkey* Corresponding author: mahmutkaplan5@hotmail.com

Objectives of the present study was to determine the variations in grain feed quality of different hybrid maize cultivars. Experiments were conducted in randomized complete block design with 3 replications during the cropping year of 2014 under conditions of Bingöl province of Turkey. A total of 25 hybrid maize cultivars were used as the plant material of the experiments. Crude protein, crude ash, acid detergent fiber (ADF), neutral detergent fiber (NDF), dry matter digestibility (DMD), dry matter intake (DMI) and relative feed value (RFV) were investigated. The cultivars had significant effects on the grain feed quality ($P \leq 0.01$).

Present finding revealed that that crude protein ratios of the hybrid maize cultivars varied between 6.80% and 11.61%, crude ash ratios between 0.30% and 2.85%, ADF ratios between 3.62% and 5.24, NDF ratios between 11.52% and 19.74%, DMD ratios between 84.82% and 86.08%, DMI ratios between 6.08% and 10.51% and RFV between 401.19 and 698.93 depending on the cultivars. Dian maize cultivar was found to be prominent with crude protein and Eldora maize cultivar was found to be prominent with relative feed value.

**(O-20) SYNTHESIS AND CHARACTERIZATION OF
(E)-N-PHENYL-1- (4- (TRIFLUOROMETHYL) PHENYL)
METHANIMINE HALOGEN DERIVATIVES BY
MICROWAVE METHOD**

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In this study, (E)-N-phenyl-1- (4- (trifluoromethyl) phenyl) methanimine halogen derivatives (**3a-c**) was obtained from the condensation reaction with 4-(trifluoromethyl)benzaldehyde (**1**) and 4-fluoroaniline (**2a**), 4-bromoaniline (**2b**), 4-cloroaniline (**2c**), was synthesized by microwave-irradiation method. The chemical structure of the compound was characterized using elemental analysis, FTIR, ¹H NMR and ¹³C NMR techniques.

**(O-21) VARIABILITY OF *SENECIO VULGARIS* L. WEED
FRUIT CHARACTERS****Nicolaie IONESCU^{1*}**¹Agricultural Research and Development Station Pitești, Pitești-Slatina road, 5 km, Romania* Corresponding author: scda.pitesti@gmail.com

Among the important species to spread in crops is groundsel (*Senecio vulgaris* L.). Weed stands first several generations in a year, by a high coefficient of multiplication, and induce a high density. To them the necessary measures to establish some of its integrated management were needed some degree of variability. How the plant grows here reflects the specific existent ecotype at a time. From tests carried out showed that the disk had surrendered width of 3.8 mm, ligules total no. was 17, with an average length of 6 mm. In the capitula formed 60 achenes with average sizes of 2.7 mm long and 0.2 mm wide. Pappus measured 5.9 mm length and style fruit was 5.6 mm. Among the characters studied were established simple correlations (r). Some of these were positive: between the disc diameter with achenes dimensions ($r = 0.228^*$ for length, and $r = 0.232^*$ for width). An-significant negative links were found between the number of achenes/ capitula and achene size ($r = -0.064$ of length, and $r = -0.017$ of width). The present study demonstrated the wide possibilities that weed was adapted in the agricultural field, regardless of the crop.

**(O-22) VARIATION OF EARLY MAIZE COBS WITH
ACTUAL MORPHOLOGICAL CHARACTERS****Nicolaie IONESCU¹*, Marian Robert GHEORGHE¹**¹ Agricultural Research and Development Station Pitești, Pitești-Slatina road, 5 km, Romania* Corresponding author: scda.pitesti@gmail.com

Being in full swing, studies on the variability of morphological characters, along with biochemical and molecular features, are considered very useful for the improvement of new maize hybrids. Rich genetic dowry and maize crop conditions lead to the characteristic expression of plant morphology. In the case of maize, the hybrid Surterra, some new directions have been found, which has recently been improved, with new morphological characters tendencies. Thus, the cobs had an average length of 17 cm, a thickness of 4 cm and weighed 159 g. The number of grains on the cob was 451, weighed 127 g, and the one thousand grains was 280 g. The cobs had 14 rows of grains, 32 grains/row, and the grain/cob percent was 81%. The grains of this hybrid were 10 mm long, 9 mm wide and 4.6 mm thick. Between the analyzed characters of the cob were mostly positive correlations. Grain percent/cob correlated negatively with most characters, while grain thickness correlated insignificantly with other attributes. The new, early-grading hybrid (FAO 250 group), cultivated, has shown a good adaptability to a new and performing agriculture.

**(O-23) INDUSTRIAL AIR PURIFICATION SYSTEM USING
ULTRASONIC VIBRATION****Dan Florin NITOI^{1*}, Gheorghe AMZA¹**¹University Politehnica of Bucharest, Romania* Corresponding author: nitoidan@yahoo.com

Paper presents the advantages of purification of polluted air from the highly polluting processing technology of an industrial shop. The advantages of using ultrasounds in the pollutant air filtration and purification process and an ultrasonic filter designed are presented in the paper.

The finite element design, construction elements of the ultrasonic system and experimental results are presented in the paper.

Ultrasonic filters are based on ultrasonic frequency oscillations in the range of 18-100 KHz, oscillations being performed with amplitudes of motion of the active part of the filter in the 10-6-108 m range. The oscillation frequency and their magnitude vary depending on the size of the filter that is, depending on the desired application. By producing transverse or wave-wave oscillations, particulates emitted into the atmosphere will be filtered and at the same time the filter will be itself cleaned.

Experimental researches have shown an increased efficiency of using this type of filter (retention of microparticles larger than 1.0 μm , smoke retention and increase of duration of filter operation more than 3 ... 5 times).

**(O-24) MONITORING DIVICIORI PERIMETERS USING
AERIAL PHOTOS****Mircea MOLDOVAN^{1,3*}, Ana GHINDARIU⁴, Tatiana BLAGA²,
Ioan TĂUT^{1,3}, Vasile SIMONCA^{1,3}, Marcel DÎRJA³**¹National Institute for Research and Development in Forestry “Marin Drăcea” S.C.D.E.P. Cluj, România²National Institute for Research and Development in Forestry (INCDS) “Marin Drăcea” Branch Bacău, România³University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca⁴Babeş-Bolyai University, Cluj-Napoca* Corresponding author: moldo_mirk@yahoo.com

Forestry research involves difficulties because it is largely on the field and less in the laboratory. Because of this, forest monitoring has been carried out quite hard, with a fairly low accuracy and their duration was rather high.

Along with the development of aeronautical, batteries and cameras technologies, unmanned aerial vehicles (UAVs) have emerged, which are used in agriculture and construction, and in recent years they have also been adopted in the forestry domain.

Today, the use of drones in forestry is reduced to forest surveillance, fire detection, identification of flora and fauna, but their potential is much higher.

Researches on the state of forest health have been carried out in an improvement area planted in the 1980s to stop soil erosion, using both modern techniques (drone overflight, GIS techniques) and traditional monitoring (soil level observations, sample shedding and laboratory determinations).

The results obtained from the processing of data collected from the drone flight correlated with the soil level observations and laboratory analyzes show that the forest in the improvement area is attacked by *Lophodermium pinastri*.

**(O-25) RESEARCHES ON THE BEHAVIOR OF
ORNAMENTAL SPECIES TO SALINE SOILS****Mugurași Florin CONSTANTIN^{1*}, Carmen-Gabriela
CONSTANTIN¹, Florin TOMA¹**

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Today, salinity, as an effect of the climate changes, is increasingly affecting more and more the agricultural areas, contributing to the unsustainable irrigation practices. One solution, could be the use of plant species, halophytes or moderately halophytes, for soil remediation. In this sense, the paper aims to present the behaviour of some ornamental species on different cultivation saline soils. As ornamental species were used *Limonium* sp. and *Gypsophilla* sp. With regard to the cultivation, three variants of soil were used, with electrical conductivity known. Soils samples were achieved from Brăila, Ialomița and Dâmbovița areas. The plant species have been carefully monitored starting from seed to maturity.

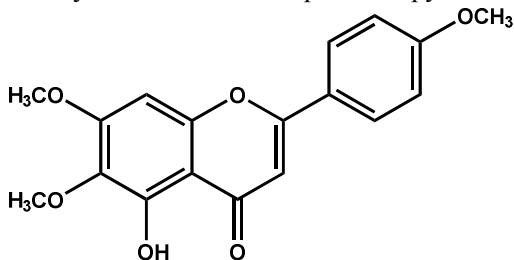
Peat and perlite mixture were positive control. During the experiment, the following indicators were monitored: seed germination percent, and also variation of EC and pH values at the beginning and at the end of the experiment, in order to conclude on the activity of the plant species.

(O-26) ROSACEAE: STRUCTURE OF THE FLOWER**Olena BOIKA^{1*}**¹Zaporizhzhia National University, Department of Landscape Design and Genetics, 69014, Karpenko-Karogo st. 13/33, Zaporizhzhia, Ukraine*Corresponding author: olena.boika.ua@gmail.com

Rosaceae is one of the most important family of flowering plants. Botanists are divided this family into the four subfamilies: *Spiraeoideae*, *Rosoideae*, *Maloideae*, *Pruniideae*. During our work we studied structure of the flower of some species that belongs to these subfamilies. It was shown that the structure of the flower in different subfamilies has a slight differences in a number, dimensions and arrangement of main parts of the flower. Stamens inside flowers from subfamilia *Prunoideae* are grouping into 3 circles, in turn, stamens in subfamilia *Maloideae* are settings in 2 circles. Species from *Prunoideae* have 2 separate pistils. But species from *Maloideae* have only 1 pistil with 5 separate stigmas. In some cases all 5 stigmas have they own pistil. Species from subfamilia *Spiraeoideae* have stamens that organized into 2 circles and 3 separate pistils. In many cases in *Rosaceae* flowers have 5 petals and sometimes pubescence inside the flower.

**(O-27) INHIBITION EFFECT OF SALVIGENIN FROM
SALVIA AETHIOPIS L. ON hCA-I AND hCA-II****Tuba AYDIN^{1*}, Hulya AKINCIOGLU², Yalcin KARAGOZ¹**¹ Agri Ibrahim Cecen University, Faculty of Pharmacy, Turkey² Agri Ibrahim Cecen University, Faculty of Science and Letter, Turkey* Corresponding author: aydintuba25@gmail.com

In this study, the inhibition effect of salvigenin isolated from methanol extract of *Salvia aethiopis* L. (*Lamiaceae*) was investigated on human carbonic anhydrase I and II (hCA-I and hCA-II) enzymes. Turkey is a very rich country in *Salvia* species known as "adaçayı" (sage).¹ In study, aboveground parts of *S. aethiopis* were gathered in Agri province, Turkey. After the plant was dried and ground, it was extracted with n-hexane and CH₂Cl₂, respectively. Salvigenin was isolated from CH₂Cl₂ extract by thin layer and column chromatography methods. Its structure was characterized by ¹H and ¹³C NMR spectroscopy.



Structure of Salvigenin

Inhibition effect of salvigenin was investigated on the hCA-I and hCA-II isozymes and IC₅₀ values were determined as 29,166 and 19,117 μM, respectively. Salvigenin was evaluated as a strong inhibitors of hCA-I and hCA-II isozymes compared to acetazolamide (IC₅₀ values 72.50 and 0.730 μM for hCA-I and hCA-II).²

(O-28) PLASMID ENCODED METABOLITES OF *BACILLUS THURINGIENSIS***Semih YILMAZ^{1*}, Rıdvan TEMİZGÜL², Aysun ÇETİN³**¹Department of Agricultural Biotechnology, Faculty of Agriculture, Erciyes University, Kayseri, Turkey²Department of Biology, Faculty of Science, Erciyes University, Kayseri, Turkey³Department of Medical Biochemistry, Faculty of Medicine, Erciyes University, Kayseri, Turkey*Corresponding author: ylmazsemh@yahoo.com

Bacillus thuringiensis (*Bt*) is a Gram (+) sporogenic bacterium used as the most effective agent in biological control of insect pests due to production of parasporal crystal proteins during sporulation phase. *Bt* metabolites have also wide range of applications especially in agriculture and health. *Bt* strains attract attention in many other areas such as development of new antimicrobial agents against bacterial pathogens that develop antibiotic resistance, development of antifungal agents against pathogen fungi and development of natural food preservatives. They also produce metabolites like siderophores, deaminases and phosphatases, which promote growth of many plant species and provide significant yield increases. Genes encoding these metabolites are mostly encoded on plasmids, which are genetic materials that can replicate independent of chromosomes in cells. The plasmids themselves and the specific information they encode are of not vital importance for the host bacteria, however, when expressed they confer advantage through special characters such as toxin formation, pilus formation, virulence properties, root nodulation, plant tumor induction, fermentation property, nitrogen and CO₂ fixation, resistance to antibiotics, heavy metals and drugs. Although there is no apparent standardization, plasmids are classified as small (1-10kb), medium (10-40 kb) and large (> 40 kb) according to their size. *Bt* strains can have 1-17 plasmids in various sizes. Plasmid genomes are very diverse, yet, the rules governing the plasmid genomes are not fully understood. Considering all these, plasmids are one of the key elements in biotechnological developments in terms of DNA delivery and exogenous expression, microbial metabolite production and genetic manipulations on them. Therefore, plasmid genome sequencing and mapping in bacteria has great importance for the detection and utilization of those characteristics and related regulatory factors.

(O-29) EXERCISE-MEDIATED dsDNA DAMAGE AND REPAIR IN IMMUNE CELLS

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Knowing the impact of circadian clock control on lymphocytes, undergoing DNA double strand break (DSBs) and repair, can help athletes to decide the best time for exercise. To assess the impact of strenuous exercise at sunrise and sunset on DSBs and repair in immune cells of amateur athletes. The study was conducted on May-June 2017 as quasi-experimental interrupted time series design. Samples from 12 healthy volunteer amateur athletes (at the age range of 19-25) at sunrise were taken Just before (0h) and 2, 24, 48 and 72h after exercise for analysis. That group underwent strenuous exercise

at sunset at 15 days interval with the same design and analysis as in sunrise. AKLIDES cell damage system was used for determining DSBs (phosphorylated H2AX) and repair (53BP1) in lymphocytes using indirect immunofluorescence. At sunrise the DNA DSBs assays revealed a remarkable increase (median foci-mean, 0.092) just after 2h and returned to baseline at the next 24h (median foci-mean, 0.027). Whereas at sunset, DSBs assay showed a significant increase (median foci mean, 2.373) just after the 2ndh, and only returned to baseline levels (median foci mean, 0.251) after 48h. The dsDNA repair assay at sunrise demonstrated a significant increase (median foci-mean, 0.067) immediately after the 2nd h and returned to normal levels within 24h. At sunset a striking increase was observed in the dsDNA repair assay (median foci mean, 0.089) during 48h, and returned to baseline only after 72h. Considering the sensitivity of immune system cells to internal biological clocks, amateur athletes must synchronize their training time with the circadian clock recovery period in order to keep their immunological health at the best level. Since the DSBs are at the lowest and the repair activities are at the peak level in the morning, sunrise appears to be the best time to perform strenuous exercises while insuring a better immune wellness.

**(O-30) STUDIES ON THE GROWTH AND STATE OF
YOUNG FOREST CULTURES WITHIN IMPROVED LAND
AREAS IN THE TRANSYLVANIAN PLAIN**

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In the Transylvanian Plain, which is a predominantly agricultural area and the degree of afforestation is of only 8%, as a result of the negative action of the physical and anthropic, the initial soil characteristics (both physical and chemical) have undergone substantial changes that have resulted in partial or even total reduction in fertility, while generating extensive degradation processes, which are classified according to the nature of the factors and the way agents act as erosion processes, land moving or landing processes, salinization processes and fertilization processes.

For the protection and improvement of soil in such situations, the most obvious solutions are those aimed at the afforestation of these territories, and the technical solutions are established on the basis of studies and projects, seeking to find methods that allow erosion control in the shortest time, in the conditions of an increased dispersion of phenomena and types of erosion.

Between 2010 and 2015, afforestation was made in 5 localities (Budești, Țagu, Țăgșoru, Viișoara, Frata) within several improvement areas, on a total area of 212 ha. In this study the vegetation state was analyzed and biometric characteristics were determined differentially based on types of erosion, relief or exposition.

**(O-31) THE INFLUENCE OF DEFOLIATION CAUSED BY
THE *STEREONYCHUS FRAXINI* L. BEETLES ON THE
RADIAL GROWTHS IN THE SIRET BASIN STANDS**

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The appearance of mass multiplication of a primary defoliator - *Stereonychus fraxini* L.- in the past years, which caused injuries of economic importance, imposed measures of knowledge of pest biology in order to supervise and even combat it (Simionescu, A. și al., 2012).

The research aimed at understanding the influence of defoliation caused by the *Stereonychus fraxini* L. beetles on the growth and vitality of forest stands with ash trees in their composition or ash forest stands.

In the field, the network with permanent control surfaces has materialized, and also had done observation and measurements, and from there, were periodically harvested through the vegetation season for all various stages of insect development, biological material for laboratory analysis.

In order to determine the effect of defoliation on forest stand vitality, the same stands –defoliated and witness- were used and annual observations on the occurrence of dry trees were carried out. The measurements were limited to certain permanent sample surfaces (sample lots), and the observations and experiments were performed in several stands of different diameter classes.

Defoliation causes a sensible reduction in growth of trees in forest stands. Complete, unrepeatable defoliation has important consequences on tree vitality, especially in the case of early defoliation, causing a 50-70% reduction in the vegetative mass

compared to the witness trees unaffected by defoliation; the effect of defoliation manifests differently, depending on the age of the stands, being more pronounced in young stands than in older ones; repeated defoliation within the same year causes partial or total drying of the trees towards the end of the vegetation season (Blaga, 2010).

The defoliation caused by *Stereonychus fraxini* L. in ash stands or broad-leaved stands with ash trees in their composition generates the reduction in growth of wood mass (when the defoliation exceeds 25% of the foliage surface); the age of the stands influences the reduction in growth due to defoliation, in the sense that young stands are more sensitive than old (mature) stands; in severely and very severely defoliated stands, a small percentage of dry trees is observed. Drying occurs especially among the trees belonging to the last classes in Kraft's classification and in the case of young stands not subjected to specialized treatments/care; it would be equivalent to an accentuation of the self-elimination phenomenon (Blaga, 2010).

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

**(O-32) THE ADVANTAGES OF APPLYING REMOTE
SENSING FOR REGULATING NATURE PROTECTION
ACTIVITIES**

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The analysis of advantages of applying remote sensing for regulating economic and nature protection activities in Almaty province of the Republic of Kazakhstan is made in this article. In the work potentials for applying remote sensing to minimise the negative impact of threats for forestry are defined.

(O-33) MONITORING FOREST PESTS POPULATIONS IN STANDS ADMINISTERED BY THE ST. MARY FOREST DISTRICT AND ASSESSING THE HEALTH STATUS OF OAKS, INCLUDING MEASURES TO RECOVER THEM

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The decline of stands can be assimilated to structural or functional disturbances in which several categories of perturbing or injurious factors compete and interact in different senses and directions but whose result is the weakening of the vigor of the trees and culminating in their death.

Agents may be abiotic or biotic, and these include bacteria, fungi and insects that are unable to invade under normal conditions to cause significant damage to healthy trees, but can be very destructive when attacking devitalized trees.

In this regard, the installed pheromone traps were observed, harvesting the captured beetles to determine the sustainable management measures of the resinous trees. Also samples were taken for the species of *Geometridae*, *Tortrix viridana* and defoliators *Euproctis chrysorrhoea*, *Lymantria dispar* and *Corythuca arcuata*. Observations were made by examining 50 trees diagonally of the analyzed units, with the observation that at *Euproctis chrysorrhoea* the observations consist in the analysis of each tree observing the existence or not of wintering nests, *Lymantria dispar* the presence of pits (egg deposits) on trunk, and in *Corythuca arcuata* the presence of adults, eggs, and characteristic bruising symptoms arched.

**(O-34) RESEARCHES ON CONSTRUCTED WETLAND
SYSTEMS OF TURKEY****Zeki GOKALP^{1*}, Furkan Omer KANARYA¹**¹Erciyes University Agricultural Faculty Biosystems Engineering
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Constructed wetland systems with their cheaper costs, easy design, construction, operation and maintenance and almost zero energy and labor requirement offer an alternative to high-cost quite complex conventional wastewater treatment systems. They are commonly used for treatment of domestic and industrial wastewater in specially designed basins with aquatic plants and can easily be used for small-to-medium sized communities. Despite old history in Europe and the USA, constructed wetland systems are quite a new technology in Turkey. The very first implementations were performed at the beginning of 2000s and the first one was built in 2004 without much considerations on optimum design parameters. Later on, researches mostly focused on appropriate design parameters, substrate materials and aquatic plants of these systems mostly to improve treatment performance of these systems. This study initially presents general information about the constructed wetlands, history and current status of constructed wetland systems of Turkey, then assess previous researches conducted especially for constructed wetlands systems of Turkey.

**(O-35) CONSTRUCTED WETLAND SYSTEMS TO REMOVE
NUTRIENTS FROM WASTEWATERS****Zeki GOKALP^{1*}, Furkan Omer KANARYA¹**¹Erciyes University Agricultural Faculty Biosystems Engineering
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Constructed wetlands are man-made systems imitating the structures and functions of natural wetlands. Although it seems to be a simple treatment system, constructed wetlands include complex and integrated processes among the ecological phases surrounding microorganisms, animals, plants and aquatic environment. For a successful design and operation, these ecological processes should be well-comprehended. These systems are used for treatment of various wastewater sources including domestic, industrial wastewaters, feedlot and agricultural runoff waters. Besides organic matter, constructed wetland systems are successfully operated for nitrogen and phosphorus removal from wastewaters. Nitrification / denitrification and plant uptake are the primary processes for nitrogen removal. Phosphorus removal is realized through the processes of adsorption, desorption, precipitation, filtration and plant uptake. In these systems, aquatic plants support treatment processes through oxygen supply to filter beds and up taking some nutrients; soil, sand-gravel etc. substrate materials support the treatments processes through adsorption and filtration. For efficient nutrient (nitrogen and phosphorus) removal, planted constructed wetland systems should be used and appropriate adsorbent substrate materials should be placed in wetland basins. In this study, nutrient removal mechanisms of constructed wetland systems were presented and recommendations were provided for more efficient removal of nutrients.

**(O-36) SRAP MARKER BASED COMPARIATION WITH
TURKISH LOCAL EGGPLANT GENOTYPES AND SOME
OTHER EGGPLANT VARIETIES****Emrah UYSAL¹, Hasan PINAR^{1*}, Aydın UZUN¹**¹Erciyes University, Department of Horticulture, Kayseri, Turkey* Corresponding author: hasanpinar@erciyes.edu.tr

Turkey have rich local vegetable varieties such as Urfa pepper, Manisa eggplant and Kırkagac melon. One of local vegetable varieties is Yamula eggplant cultivar which grown central Anatolia that forefront with specific striped structure and hard fruit flesh, especially it was consumed by have lived people at its growing regions as fresh, dried and pickled. Uniform fruit, disease resistance and high yielded genotypes are the most important factor for marketable products. But, it is inevitable genetic differences because of producing with obtained seeds yourself. In this study, 28 Yamula eggplant genotypes were compared with 1 Manisa eggplant and 3 Kemer eggplant genotypes using SRAP molecular markers to understand genetic differences/similarity. As obtained results, genetic similarity was 0,68-0,99 and with two cluster. The genetically closest genotypes were ERU 3014-ERU 949 which were Yamula eggplant genotypes. Results showed that there were differences among Yamula eggplant genotypes and also Yamula and other eggplants.

**(O-37) IMPROVEMENT OF INDUSTRIAL
PHYTOPHTHORA (*PHYTOPHTHORA CAPSICI* LEON.)
TOLERANT PEPPER LINES USING MOLECULAR
MARKERS AND ANTHR CULTURE**

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Although Turkey has big potential with regard to production area and quality pepper production, equated yield is low because of plant diseases. One of plant diseases is *Phytophthora capsici* Leon. *Phytophthora capsici* Leon. disease tolerance in pepper species is controlled by more than one gene (QTL). Until now, there are some reports on QTL mapping for disease tolerance in pepper species and one of them is Phyto.5.2 which is linked to *Phytophthora capsici* Leon. disease tolerance. In this study, we aimed and have used pepper genotypes to transfer disease tolerance which are grown in Central Anatolia region. Crossing was carried between Cırgalan pepper and CM334 and backcrossed to Cırgalan pepper genotype to obtain BC1F1. BC1F1 plants were tested using molecular marker which linked with Phyto.5.2 QTL. Tolerant plants were backcrossed with Cırgalan pepper genotypes to obtain BC2F1 plants. BC2F1 plants were tested again using molecular markers and tolerant plants selfed to obtain BC2F2. After testing, anthers of tolerant plants were inoculated to get double haploid plants. From the results obtained, 25 pure industrial pepper lines were obtained which they were *Phytophthora capsici* Leon. disease tolerance. This lines wil be useful for *Phytophthora capsici* Leon. disease tolerance breeding programs.

(O-38) DETERMINATION OF DIFFERENT CULTURAL APPLICATIONS ON TURKISH LOCAL EGGPLANT OF EARLINESS, YIELD AND DIFFERENT QUALITY PARAMETERS

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This study was carried in the land conditions of the Yemliha district of Kayseri-Turkey in 2018 in a completely randomised design with 6 replications. In this study, it was aimed that determine to effect of 12 different different cultural applications on Turkish local eggplant cultivar (named yamula eggplant) of earliness and some other quality parameters. 12 different applications such as High tunnel mulch seed, High tunnel no mulch seed, High tunnel mulch seedling, High tunnel no mulch seedling, Low tunnel mulch seed, Low tunnel no mulch seed, Low tunnel mulch seedling, Low tunnel no mulch seedling, open field mulch seed, open field no mulch seed, open field mulch seedling, open field no mulch seedling were used. Plant growth, fruit weight, fruit size, fruit diameter, fruit meat hardness, yield and earliness properties have been observed. According to the results of the research, earliness and high yielding were determined with high tunnel seedling applications. Open field seeding application had low yield and lowes quality parameters. In conclusion, earliness, high yield and high quality for Turkish Local Eggplant cultivar should use high tunnel seedling applications.

**(O-39) DETERMINATION OF FRUIT DETACHMENT
FORCE OF SOME INDUSTRIAL PEPPER BREEDING
LINES****Hasan PINAR^{1*}, Aydın UZUN¹**¹ Erciyes University, Department of Horticulture, Kayseri, Turkey* Corresponding author: hasanpinar@erciyes.edu.tr

In industrial pepper cultivation for spice production, harvesting the fruits is time consuming and high cost requiring process. The pedicel is tightly attached with the calyx to the fruit pod in most pepper cultivar. For this reason fruit detachment force is an important for pepper breeding programs. In present study, it is aimed that determination of fruit detachment force of some breeding lines for breeding program. Total 145 pepper lines were used and fruit detachment force of pepper lines were observed as newton. As results of study, fruit detachment of pepper lines varied between 0.56-4.41 N. Variation is useful for pepper breeding programs with regard to fruit detachment force.

(O-40) POTENTIAL USES OF LITTER MATERIALS IN BROILER BREEDING OPERATIONS**Serkan YAZAREL^{1*}, Sedat KARAMAN¹, Zeki GOKALP²**¹Gaziosamanpasa University Agricultural Faculty Biosystems Engineering, 60250, Tokat, Turkey²Erciyes University Agricultural Faculty Biosystems Engineering Department* Corresponding author: serkan.yazarel@gop.edu.tr

The welfare and health of the animals are important issues in breeding operations and they have direct impacts on animal performance. Previous studies investigated the diseases resulted from insufficient litter and effects of different litter materials such as herbal, wood, soil and recycled products on animal performance. In broiler operations, 153 grams of fertilizer were produced per kilogram live weight of the animal during the growing period. The negative effects of poultry manure on animal health are partially eliminated by litter materials, then animal health and performance are improved through the use of litter materials. Therefore, litter management is an important issue in poultry operations. Used bedding materials generate various problems for the environment. For this reason, it is necessary to reuse the used substrates by various operations and to manage this process in a suitable way. In this study, information was provided about the potential use of poultry litter wastes as farmyard manure, animal feed or biogas production material.

(O-41) AUTOMATION APPLICATIONS IN GREENHOUSE**Sedat KARAMAN^{1*}, Serkan YAZAREL¹, Zeki GOKALP²**¹Gaziosamanpasa University, Agricultural Faculty, Biosystems Engineering, 60250, Tokat, Turkey²Erciyes University, Agricultural Faculty, Biosystems Engineering Department* Corresponding author: sedat.karaman@gop.edu.tr

In this study; information is given about the automation applications that have become widespread in greenhouses these days. Technological developments such as sensors, software, microcontrollers, cameras, artificial intelligence applications etc. used in automation systems in the greenhouse sector give hope for the future of the greenhouse sector. Although the initial investment costs of automation systems are high; with the introduction of these technologies to the greenhouse sector, savings in labor costs, spraying, fertilization, time and general costs are reduced, thus total production costs are reduced. Prevent of unnecessary pesticide uses and meeting the needs of the product in the right time at the right doses will allow growers to get high-quality products. Heating, ventilation, spraying, fertilization, frost protection systems are used in greenhouses. In addition, manual harvest and packaging are time-consuming labor-intense processes and prone to human errors. Such errors can be eliminated and significant savings in time and costs can be achieved with the use of automation systems. Thus, there is a great interest of greenhouse sector in such automation systems.

POSTER PRESENTATION**(P-01) THE EUROPEAN UNION STRATEGY FOR THE
DANUBE REGION, A FRAMEWORK FOR THE
PROMOTION OF THE HERITAGE OF MULTI-ETHNIC
AREAS**

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The Danube is one of Europe's most cosmopolitan rivers, therefore from the Iron Gates to the Danube Delta we can hear seven or eight languages during one day. Promoting culture, tourism and direct contacts between people is the Priority Area 3 of the European Union Strategy for the Danube Region (SUERD in Romanian), that Romania is coordinating with Bulgaria.

A remarkable result of this priority area is the creation of a "Blue Book of Danubian Cultural Identities" based on a series of visits and exchanges of best practices in multi-ethnic regions of the Danube basin that, through mass-media and men of letters, will capture the ethnic diversity and cultural heritage. "The Blue Book of the Danube Cultural Identity" aims to make an inventory of the heritage of multi-ethnic areas along the river, so that the cultural heritage of the Danube can become more visible.

The Danube has always been a source of inspiration for literature, music, painting and folklore for its peoples who have contributed to the enrichment of regional and European culture. By adding new pages to "The Blue Book of Cultural Identity of the Danube", the inhabitants of this region rediscover their history and values.

**(P-02) THE POTENTIAL OF PHOTOSYNTHETIC BIOMASS
RESULTED FROM RAS AS VALUABLE SECONDARY
SOURCE OF NUTRIENTS**

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The new trend in using photosynthetic microorganisms for the eputation of wastewater in recirculating aquaculture systems (RAS) opens a new question concerning the economic significance of this newly synthesized biomass. In this paper, we present our original results concerning the production of photosynthetic biomass (both prokaryotes and eukaryotes) and associated non- photosynthetic microbiota during the purification process of artificial wastewater. The results present the wet and dry weight quantities of weekly synthesized photosynthetic biomass (with 3 harvesting processes per week). The obtained biomass is analysed with respect to the lipid content, total proteins, as well as chlorophylls and carotenes. As our main task is to use this microbial biomass as valuable substrate for fish growth and not for the trivial usage as material for biogas production or fertilizer in agriculture, these results could make a big impact for a better utilisation of natural resources, including in the rather new context of circular economy.

(P-03) EUROPEAN UNION STRATEGY FOR THE DANUBE REGION, COLLABORATION FRAMEWORK FOR THE BIOSPHERE RESERVATIONS OF ROMANIA AND THE REPUBLIC OF MOLDOVA

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The European Union Strategy for the Danube Region (EUSDR - SUERD in Romanian), the second macro-regional strategy of the European Union, launched at the political initiative of Romania and Austria (June 2008), includes fourteen states, nine EU Member States and five non-EU countries. Protecting the environment in the Danube region is an important objective for this region with such diverse but often fragile ecosystems.

An achievement in this direction is the establishment in April 2007, with the signing of Tulcea Declaration, of Danube protected areas network, DANUBEPARKS. In 2014, the DANUBEPARKS Association was set up to provide a more stable framework for cooperation and a stronger common voice. Of the 20 protected areas that make up DANUBEPARKS, located on the territory of 8 Danubian countries, two are located near Galați, namely the Lower Prut Biosphere Reservation in the Republic of Moldova and the Danube Delta Biosphere Reservation in Romania.

If in Romania, the Danube Delta Biosphere Reservation was designated in 1990, the Lower Prut Biosphere Reservation was included in the UNESCO World Biosphere Reservation Network in July 2018, hence the prerequisites for collaborations in the area of biodiversity conservation of wetlands in the benefit of nature and socio-economic systems in the area.

(P-04) THE BIOLOGICAL IMPORTANCE OF COMPLEX COMBINATIONS BASED ON PYRAZOLES**Anda-Maria BAROI^{1,2*}, Mihaela BADEA¹**¹University of Bucharest, Faculty of Chemistry, Department of Inorganic Chemistry, 90-92 Panduri Str., 050663 Bucharest, Romania²National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest, Emerging Nanotechnologies Group, 202 Spl. Independentei, 060021, Bucharest, Romania* Corresponding author: baroi_anda@yahoo.com

Over the years the attention was focused on pyrazole and its complex combinations due to their antiallergic activity, analgesic agents and as anti-inflammatory agents.[1] Since the discovery of 3-methylpyrazole and 4-ethylpyrazole as potentially therapeutic compounds, there has been a sudden increase in the synthesis of pyrazole derivatives used as anticarcinogens.[2]

Based on these biological activities, we have synthesized new complex combinations of Ni (II) with pyrazole/ pyrazole derivatives ligands. Complexes have been characterized by classical physico-chemical methods (elementary chemical analysis, electronic spectra and IR spectra and thermal decomposition). Following the syntheses we obtained 4 new complexes formulated as it follows: $[\text{Ni}(\text{Hpz})_2(\text{acr})_2(\text{H}_2\text{O})]$, $[\text{Ni}(3\text{-Mepz})_2(\text{acr})_2(\text{H}_2\text{O})_2]$, $[\text{Ni}(4\text{-Mepz})_2(\text{acr})_2(\text{H}_2\text{O})_2] \cdot 6\text{H}_2\text{O}$ and $[\text{Ni}(3,5\text{-Me}_2\text{pz})_2(\text{acr})_2(\text{H}_2\text{O})]$. Complex combinations were formulated as octahedral species with monodentate coordinated pyrazole ligands and monodentate or bidentate coordinated acrylate ion.

The antimicrobial assay was performed against some Gram-positive, Gram-negative bacterial and fungal pathogenic strains.

**(P-05) RESEARCH ON THE EFFECTS OF PENDIGAN 330
EC HERBICIDE ON FIZIOLOGICAL INDICATORS AT
CARASSIUS AURATUS GIBELIO BLOCH UNDER
DIFFERENT EXPERIMENTAL CONDITIONS**

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Herbicides are chemical substances used in the obliteration of weeds in agriculture (they represent 70% of all pesticides) in rivers, in embankments, in industrial areas and in very small quantities are used in forests, wild habitats and meadows.

Pendingan 330 EC is an herbicide from the toluidian group which looks similar to a mobile omogenous, clear liquid of dark-yellow color with a specific smell (aromatic) used for destroying yearly monocotyledon weeds and yearly dicotyledon weeds in crops of sunflower, corn and vegetables.

In this study we have analyzed the effects of the Pendingan 330 EC herbicide concentrations (0,002 ml Pendingan 330 EC/l of water, 0,004 ml Pendingan 330 EC/l of water, 0,008 ml Pendingan 330 EC/ l of water) on some fiziological indicators at *Carassius auratus gibelio* Bloch.

The inhibitory action of the Pendingan 330 EC herbicide has manifested throughout the duration of the experiments with the toxic effect being more emphasized in the case of experimental variants undergone in room temperature environments.

**(P-06) STUDY ON THE INFLUENCE OF CLIMATE
CONDITIONS ON SOME CHARACTERS OF THE
ELDERBERRY SELECTION**

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Black elderberry (*Sambucus nigra* L.) is shrub species which is part of the *Adoxaceae* family and is native to Europe, America, Northern Africa and Western- and Central Asia. Black elderberry is very much spread into the spontaneous flora of Romania too.

The *Sambucus nigra* flowers are cream - white coloured and are located into umbellas. Fruits are black-blue, have a diameter of up to 6 mm and ripen in late summer.

The flowers and fruits of black elderberry have a long history of use in traditional European medicine being utilized as treatments for diabetes and viral infections, fever, colds and flu. Also, from elderberry flowers, tea, syrup and different alcoholic beverages can be obtained.

The aim of this paper is to analyze the influence of climatic conditions on elderberry flower yields of different selections from spontaneous flora in two locations from Oltenia region. Biometric data of main quantitative traits data has been collected from 10 elderberry selections in 2017 and 2018.

**(P-07) RESEARCHES CONCERNING THE FIGHT AGAINST
CYDIA POMONELLA L. FROM THE APPLE TREE
PLANTATION IN THE NORD EAST AREA OF ROMANIA**

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The purpose of this paper is to use different methods of controlling/fighting the codling moth (*Cydia pomonella* (Linnaeus)) (Lepidoptera: Tortricidae) pest in the pedoclimatic conditions in N-E Romania, following the biological cycle of the species.

Cydia pomonella L. is one of the most damaging pests of apple plantations, it can compromise crops in proportions of up to 90-100%, with two, sometimes 3 generations per year depending on the area where the plantation is located.

The researches were carried out in the experimental field of the Iasi Growing Development Research Station, having as study material two apple varieties, namely Idared and Golden, where the pest was monitored by means of pheromone traps. Fighting this pest was achieved by applying 12 phytosanitary treatments.

The results obtained after the two years of observations, following the application of the phytosanitary treatments on the two experimental variants, registered differences regarding the attack of this pest.

**(P-08) THE BEHAVIOR OF SOME SUNFLOWER
GENOTYPES UNDER ASPECT OF VARIABILITY OF THE
PRODUCTIVITY ELEMENTS**

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The objectives for improvement concerning the sunflower may vary a lot dependent on production area, abiotic stress and cultivators' preferences. Before developing a program for each character improvement, it is essential to be determined the existent variability and the heritability method. Also, there is needed some knowledge on the correlations existent between the considered characters. The selection of a character may alter the other characters, sometimes reducing the genetic gain.

The researches accomplished in the central area of Oltenia (Romania), have demonstrated the different reaction of some sunflower hybrids depending on the genotype. Although some experimented hybrids have presented a sunflower capitulum with great diameter, exhibiting an obvious heterosis from this point of view, they have the advantage of a smaller number of seeds, due to the central area with dry seeds, which is greater than in the case of the hybrids with small or medium sized capitulum. For improvement, there are desired genotypes of sunflower with medium compact capitulum. This is the reason why it is appreciated that Romina and Saturn genotypes stand for a valuable matter in selecting the consanguineous lines which are meant to accumulate the abundant fructification characters, with productive central area, without dry seeds.

**(P-09) SYNTHESIS, CHARACTERIZATION AND
EVALUATION OF CYTOTOXIC, PHYTOTOXIC AND
ANTIMICROBIAL PROPERTIES OF DECORATED
APATITIC MATERIALS**

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The name “apatite” is being used since antiquity, coming from ancient Greek from the word *ápatan*, which can translate as a "scam" because the mineral exists in different shapes and colours and can easily be mistaken for other minerals. With a complex structure such as $\text{Ca}_5(\text{PO}_4)_3\text{X}$ ($\text{X} = \text{F}, \text{Cl}, \text{OH}$), these materials can be obtained with different morphology, stoichiometry and crystallinity, depending on the synthesis methods used. The transformations occurred in the apatite structure such as substitution of Ca^{2+} ions by Sr^{2+} , Mg^{2+} , hydroxypropyl (OH^-) by F^- , Cl^- or carbonate (CO_3^{2-}) ions and phosphate (PO_4^{3-}), lead to changes in the properties of these biomaterials: crystal size, morphological particles, network parameters, properties spectra etc. Several methods have been developed over time to obtain apatitic materials. These can be classified into two broad categories: dry chemical synthesis, respectively wet chemical synthesis.

New apatitic materials decorated with metallic nanoparticles and metallic oxides were obtained and characterized using modern analytical methods (X-ray diffraction, X-ray fluorescence, microscopic techniques), as well as in terms of antimicrobial potential and cytotoxic, respectively phytotoxic effect.

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**(P-10) ISOLATION OF *GLOEOSPORIUM FRUCTIGENUM*
FROM IDARED APPLE VARIETY**

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Introduction: In order to test some bio fungicides, the isolation of *Gloeosporium fructigenum* was carried out. *Gloeosporium fructigenum* is a fungus that causes the bitter rot disease. Bitter rot is a common fruit rotting disease of apple that occurs in all states where apples are grown.

Materials and methods: The fungus strain was cultivated onto potato-dextrose agar (abbreviated "PDA") from Sigma-Aldrich with next composition: agar, 15 g/L, dextrose, 20 g/L and potato extract, 4 g/L. Chloramphenicol antibiotic was used to avoid the bacterial contamination. Experiences were effectuated with samples (Idared delicious apple variety) from Research Institute for Fruit Growing Pitesti – Mărăcineni.

Results: Morphological observations were taken based on colony, conidia and conidiophore morphology and other morphological characters.

Conclusions: *Gloeosporium fructigenum* was isolated from infected apples and grown on the potato-dextrose agar culture medium with the goal to test some bio fungicides.

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(P-11) THE EFFECT OF HYPOXIA ON FISH

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The hypoxia is a pathological condition that involves insufficient oxygen in the body.

It can occur in the whole body (generalized hypoxia) or in the tissues (tissue hypoxia). If it is not rapidly treated hypoxia leads to necrosis, and then to heart attack.

The main symptoms of fish in hypoxia are more frequent breathing and loss of appetite.

A characteristic is gripping the air with the mouth. The mouth it is open all the time, breathing very difficult. In some cases, the eyes are glazed, the color becomes more intense.

The clinical picture is similar to symptoms of intoxication and the symptoms of infectious diseases involving the deprivation of oxygen. Hypoxia is a body failure due to insufficient oxygen supply to the tissues.

For such sensitive creatures, the rise in water temperature may be fatal due to summer heat or the beginning of the heating season. Under these conditions, fish need more oxygen. All of these factors can cause severe hypoxia.

The tolerance for hypoxia depends on the species, their physiological state, the temperature and pH of the water, and the nutritional status. So it is important to understand the nature and the thresholds of the effects of hypoxia on the fish.

The paper aims to investigate the effects of hypoxia on certain physiological parameters of different fish species (especially the *Carassius auratus*).

(P-12) THE ACTION OF BaSO₄ ON SOME PHYSIOLOGICAL INDICES AT *CARASSIUS AURATUS GIBELIO* BLOCH L.
1758

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Our research was intended to determine the variation of certain physiological indices, such as oxygen consumption, respiratory rate, glycaemia and red blood cell count under exposure to BaSO₄ of *Carassius auratus*. Under barium exposure, significant changes in respect of oxygen consumption, respiratory rate, red blood cell count and glycaemia were recorded in the specimens of *Carassius auratus* studied being viewed as a response to the stress caused by particulate matter.

The interval of the non-lethal concentration of the barium at the *Carassius auratus* individuals is situated between 1 – 1500 mg/l, and the lethal concentration DL₁₀₀ = 2000 mg/l.

The highest variations of the physiological indices percentage-wise were seen in: glucose, whose value was in the control sample 49.33 mg/dl, and in the experimental sample, exposed to 40 mg/ l BaSO₄ was 87 mg/dl, representing an increase of 76.36% after 336 hours and red blood cell count where values increased significantly by 183%, 152% respectively 120.41% in concentrations of 40, 35 and 30 mg/l of BaSO₄.

The small variations of the physiological indices percentage-wise were seen in: oxygen consumption, whose value was in the control sample 69.16 ml oxygen/kg/hour, and in the experimental sample, exposed to 40 mg/ l BaSO₄ was 31.273 ml oxygen/kg/hour, representing a decrease of 54.79% after 336 hours and breathing rate where values decreased significantly by 37.93%, 32.76% respectively 30.76% in concentrations of 40, 35 and 30 mg/l of BaSO₄.

**(P-13) URBAN BIODIVERSITY. ECOLOGICAL RESEARCH
ON THE AVIFAUNA OF URBAN PARKS**

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The present paper provides the results of the ecological research on the avifauna of the urban parks in the city of Pitești: Trivale Forest, Ștrand Park, Tineretului Park and other urban areas. In these areas we identified 116 species belonging to 13 orders. Many of these species are listed in Annex 1 of the Birds Directive. We observed that in the parks that are intensely frequented by people as well as in the commercial areas, avifauna diversity is reduced. However, flight distance is lower for the same species resident in the parks that are intensely frequented by people or found in commercial areas compared to those species found in the parks that are farther from the city bustle (noise) and urban agglomerations. The local community, public domain managers (urban green spaces), and urban garden owners may contribute to an increase in avifauna diversity by taking adequate measures for the upkeep of parks and green spaces, by using lower-intensity maintenance practices, placing footpaths at an adequate distance from the bird nesting places, planting native species of trees and shrubs (thus ensuring food resources, nesting and resting places for the bird species), placing artificial nests and in the hiemal season, bird feeders.

**(P-14) ASSESSMENT OF THE PARTICIPATION OF PLANT
RESIDUES FROM DIFFERENT CROPS IN THE SOIL
NUTRIENT BALANCE****Diana INDOITU ^{1*}**¹The State Agrarian University of Moldova, Str. Mircesti 44,
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The balance of nutrients affects not only the productivity of crops grown, but also the fertility of the soil, so the search for the possibility of maintaining a positive balance in crop rotation is very important. The return of all plant residues of cultivated crops allows farmers to return NPK-nutrients that are removed with the harvest. Each culture has variable NPK-content. The main objectives of this study were to assess with which field crop farmers can get the greatest amount of plant residues, which plant residues are richest in nitrogen, phosphorus, potassium. The following field crops were studied: winter wheat, peas for grain, maize for grain, sunflower. Most plant residues remain after maize, least of all after peas. Most of the nitrogen with plant residues comes in the soil after maize, then with sunflower and winter wheat, while phosphorus and potassium come with the plant remains of sunflower, then maize.

**(P-15) ZOOGEOGRAPHIC DISTRIBUTION OF SOME
INVERTEBRATE SPECIES IDENTIFIED IN THE LEAOTA
MOUNTAINS, SOUTHERN CARPATHIANS, ROMANIA.**

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This paper presents the results of research on invertebrate fauna in the Leaota Mountains, which has been carried out over the course of three years. Such research has made a premiere for this massive; although these mountains are accessible, no microfauna inventories have been performed in Leaota, with a few exceptions: Acari (Mesostigmata) and gastropods (Gastropoda) (Manu et al., 2017). Research has focused on identifying invertebrate species from taxonomic groups: Arachnida, Diplopoda, Chilopoda, Isopoda, Collembola, and Coleoptera. There were totally identified 253 taxa, first reported in Leaota, in areas with litoil and scree formed by limestone and crystalline shale. The extraction of invertebrate fauna from the scree was made at three different depths. In this paper we shown the zoogeographic distribution of invertebrate species. Although the area under investigation is rather small as a surface, the species encountered belong to 15 zoogeographical categories; 24 species are endemic (8 endemic species for Romania and 16 Carpathian endemics).

(P-16) TYPE 2 DIABETES - CASE STUDY**Elena Evelina Codruta FILIP^{1*}, Alexandru Gabriel MARINESCU¹**¹University of Pitești, Faculty of Science, Physical Education and Informatics, Department of Natural Science, Târgu din Vale Street, No. 1, 110040 - Pitești, Romania.* Corresponding author: evelinafilip@yahoo.com

Diabetes is one of the most important health problems of the 21st century and is the fourth leading cause of death in most high-income countries, and there is evidence that diabetes has become a pandemic disease. This disease is related to a number of risk factors such as diet, obesity, alcohol and other toxic substances (drugs), coffee, sedentary care, pregnancy, some medicines, psychological trauma (stress), resuscitation pancreatic. At the time of clinical onset of hyperglycemia, type 2 diabetes is most often asymptomatic.

Our investigations had as main objective the knowledge of changes in the number of physiological indices in human diabetes.

The disease had a rapid, negative evolution, followed by numerous complications and negative manifestations due to: the discontinuation of the medical treatment of the effect of treatment with unsatisfactory dosages, very strong emotions, psychic traumas accompanied by the high amounts of stress hormones discharged are insulin antagonists, and non-compliance with the hypoglycaid regimen, The patient came to present in 2019, in a relatively short time, starting from the 2011 outbreak, accompanied by manifestations such as: nocturnal and frequent nightmares, fatigue, persistent thirst, the following pathological picture:

- has numerous cortical somatic disorders, surgery, and chronic maintenance treatments for psychiatric pathology
- depressive mood, physical and mental asthenia,
- Presents hepatic steatosis with cytolysis and cholestasis and heart disease.

(P-17) PROTECTIVE ROLE OF TANNIC ACID AGAINST COPPER-INDUCED LIPID PEROXIDATION IN RATS

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The present study was designed to evaluate the protective role of tannic acid against copper-induced alteration in lipid peroxidation and antioxidant function in rats. The results show the toxic effect of copper indicated by increasing of lipid peroxidation markers and decrease in the levels of plasma enzymatic and non-enzymatic antioxidants. Administration of tannic acid at different doses (20, 40 and 80 mg/kg body weight) show a significant modification of lipid peroxidation markers and the levels of plasma enzymatic and non-enzymatic antioxidants. This study demonstrated the protective role of tannic acid in reducing the toxic effects of copper in experimental rats.

**(P-18) ASPECTS OF SIMULTANEOUS CONTROL OF THE
PATHOGENS AND PESTS ON CUCUMBER CROPS UNDER
HIGH PLASTIC TUNNELS****Gabriela SOVĂREL^{1*}, Marcel COSTACHE¹, Ana-Emilia CENUSĂ¹, Simona Stefania HOGEA¹**¹Research and Development Institute for Vegetable and Flower Growing, Vidra, Romania* Corresponding author: gabriela_sovarel@yahoo.com

The experience done at the R.I.V.F.G Vidra had as purpose determining the compatibility of some fungicides with different insecticides-acaricides, for controlling, at the same time, the pathogens and pests on cucumber crops. The experience was done in 2018, under high plastic tunnels and had 10 variants, in 4 replications, randomized complete block. Five treatments were applied at 10 - 11 days intervals: 3.09, 13.09, 24.09, 4.10, 15.10. The best results in controlling pathogens (*Sphaerotheca fuliginea*, *Pseudoperonospora cubensis*, *Alternaria cucumerina*) and pests (*Tetranychus urticae*, *Thrips tabaci*) were obtained at the variants: 8 (Ortiva Top 0.1% + Vertimec 1.8EC 0,1%) with efficacy - 91,1%, 9 (Ortiva Top 0.1% + Laser 240SC 0.05%) with 87.3% and 7 (Ortiva Top 0.1% + Mospilan 20SG 0.04%) with 86.1%. Through the obtained yield the same variants were noted: V8 with 3.86 kg/m², V9 with 3.78 kg/m² and V7 with 3.75 kg/m² compared to 2.99 kg/m² at variant 10, untreated control.

**(P-19) PHYTOSYNTHESIS OF METALLIC
NANOPARTICLES FROM BY-PRODUCTS OF
AGRICULTURE AND FOOD-PROCESSING INDUSTRIES**

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The concept of nanotechnology, is considered to be a field of modern science, has actually emerged since the XIX century [1], but in recent decades a particular interest has been shown for metallic nanoparticles obtained from plants. The first successful scientific report on the nanoparticle synthesis by plants was in 2002 when gold nanoparticles of 2-20 nm range could be formed in seedlings of alfalfa (Lucerne). Later, it has been shown that alfalfa can also form silver nanoparticles, if covered with a solid silver-rich medium [2]. Physicochemical and optoelectronic properties of metallic nanoparticles are closely dependent on the shape and size of the particles, contributing significantly to their properties control. They can have applications in diverse areas such as: biomedical, agriculture, sensors, etc.

Obtaining them from waste products from agriculture and food processing has as main advantage the decrease of the quantities of waste, as well as the development of eco-friendly methods. Various methods of obtaining nanoparticles by corn, palm oil, pomegranate waste are known.

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(P-20) PLANTS: FROM THEIR ANTIQUITY USE TO THEIR CONTEMPORARY CULTURAL HERITAGE CHARACTER**Irina FIERASCU¹, Radu Claudiu FIERASCU^{1*}, Anda Maria BAROI¹, Roxana Ioana BRAZDIS¹, Toma FISTOS¹**¹National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest, Emerging Nanotechnologies Group, 202 Spl. Independentei, 060021, Bucharest, Romania* Corresponding author: radu_claudiu_fierascu@yahoo.com

The cultural heritage includes tangible evidence such as: buildings, monuments, landscapes, books, works of art and other artifacts, intangible culture like: folklore, traditions, language, etc. and more natural heritage that includes landscapes with cultural significance and biodiversity [1]. The cultural heritage involves almost all types of materials produced by nature that are used by humans to produce different types of artifacts, from the simplest (mono-components) to complex structures, integrating organic and inorganic materials [2]. In the case of organic materials, plants represent one of the most commonly used materials because they have been used for various purposes since antiquity: paper making [2], obtaining adhesives such as starch [3], tanning leathers [4], or as raw materials to product fabrics and other household things, transport or even ornamentation items. Recent studies on objects and materials of historical and cultural nature involve the use of various analytical methods and techniques, both destructive and non-destructive to extract objective information about these materials. The most well-known plants used for these purposes are mentioned: flax, hemp, sweet chestnut (*Castanea sativa*), redoul (*Coriaria myrtifolia*), Mirt (*Myrtus communis*), etc.

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**(P-21) INSIGHT ON PHYSICO-CHEMICAL PROPERTIES
OF SOME Cu (II) COMPLEXES BEARING 2-HYDROXY-3-
METHOXYBENZALDEHYDE SEMICARBAZONE AS
LIGAND**

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Semicarbazone derivatives exhibit a large spectrum of biologic activity such as anti-inflammatory, antimicrobial, and antitumor [1]. As result several Cu(II)complexes with this kind of ligands were synthesised and some evidenced antitumor, anti-inflammatory, or antimicrobial activity in most cases enhanced in comparison with ligand [2, 3].

Having in view these aspects, we extended this field in synthesis of new complexes of Cu(II) of type $[Cu(vnsc)X]$ with 2-hydroxy-3-methoxybenzaldehyde semicarbazone (vnsc) as polyfunctional ligand and X (Cl, CH_3COO , ClO_4) as auxiliary ligand. The features of complexes have been assigned from elemental and thermal analyses as well as IR and UV-Vis spectra. The ligand behave as three-dentate species through phenolic oxygen and azomethine and amine nitrogen atoms while the acetate and perchlorate act as unidentate ligands according with IR date. These coordinative bonding resulted in a distorted tetrahedral stereochemistry in all cases, aspect indicated by UV-Vis spectra pattern. The chloride and acetate complexes decompose in three steps that starts with anions elimination and continuous with semicarbazone oxidative degradation. The ligand 2-hydroxy-3-methoxybenzaldehyde semicarbazone was synthesised by hydrazine carboxamide and 4-hydroxy-3-methoxybenzaldehyde condensation and its structure was assigned based on 1H -NMR and ^{13}C -NMR data.

**(P-22) CONTROLLING OF THE MAIN PATHOGENS ON
MELON CROPS UNDER HIGH PLASTIC TUNNELS**

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The experience which was conducted at the R.I.V.F.G. Vidra, in 2018, under high plastic tunnels had as purpose determining the efficacy of different combinations of fungicides used for simultaneous control of pathogens in melon crop. The experience had 10 variants, in 4 replications, located randomly. The experimental variants were as follows: V1. Melody Compact 49 WG 0.2% + King 0.05%; V2. Melody Compact 49 WG 0.2% + Systhane Forte 0.02%; V3. Melody Compact 49 WG 0.2% + Ortiva Top 0.1%; V4. Aliette 80 WG 0.2% + King 0.05%; V5. Aliette 80 WG 0.2% + Systhane Forte 0.02%; V6. Aliette 80 WG 0.2% + Ortiva Top 0.1%; V7. Acrobat MZ 69 WG 0.2% + King 0.05%; V8. Acrobat MZ 69 WG 0.2% + Systhane Forte 0.02%; V9. Acrobat MZ 69 WG 0.2% + Ortiva Top 0.1%; V10. Untreated control. During the growing season, the attack of the following pathogens was manifested: *Sphaerotheca fuliginea* (DA=94.9%), *Pseudoperonospora cubensis* (DA=24.9%) and *Alternaria cucumerina* (DA=12.7%). The mean efficacy of combinations of fungicides recorded the highest values for variants 3 (88.7%), 9 (87.8%) and 6 (86.1%).

Regarding the obtained yield, the best variants were: 3 (51.8 t/ha), 9 (51.5 t/ha) and 1 (51.2 t/ha), while at variant 10 untreated control, this was only 31.8 t/ha.

(P-23) THE STRUCTURE, FUNCTIONAL STATUS AND FISH DIVERSITY IN GALBENI LAKE**Daniela Cristina IBANESCU^{1*}, Aurelia NICA¹, Adina POPESCU¹**¹Universitatea Dunărea de Jos, Galați, Romania* Corresponding author: daniela.gheorghe@ugal.ro

In this study the fish communities characteristic of Lake Galbeni are analyzed through functional guides.

The functional status of the ichthyofauna can be used as an indicator of the quality of the aquatic environment.

The fish diversity was investigated through the simultaneous analysis of the indices to three diversity components: (1) the number of species (species density S and Margalef's D_{mg} index), (2) rarity (number of species with less than 5% of occurrence), (3) evenness (Heip's E_{Heip} , Berger- Parker's $1/d$ indices). Also, they have been used two popular heterogeneous indices (Simpson's $1-D$ and Shannon's H' indices) combining the number of species and evenness were also considered.

The 14 species of fish found in Galbeni Lake were distributed in ecological guilds according to their preference for food and breeding. Specific diversity measured through indicators is not very high. The composition of trophic and reproductive guilds is specific to accumulation lakes.

(P-24) THE RARE SPECIES OF FISH IN THE LOWER PRUT RIVER IN THE NATIONAL AND EUROPEAN CONTEXT**Luiza FLOREA^{1*}**¹Dunarea de Jos University of Galati, Cross-Border Faculty,
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The Prut is one of the rivers that still hosts a significant number of fish species, some of them being endemic, extremely rare and protected both at national and international level. Even if there is a general tendency to reduce the specific indigenous diversity and to increase the numerical abundance of the eurytopic, generalists and highly competitive species, the Prut River has a significant number of fish species with various level of rarity, especially in the lower area. These species are *Vimba vimba*, *Ballerus sapo*, *Pelecus cultratus*, *Leuciscus idus*, *Zingel zingel*, *Zingel streber*, *Alburnoides bipunctatus*, *Barbus meridionalis*, *Lota lota*, *Alosa tanaica*, *Gymnocephalus baloni*. The presence of rare species is due mainly to the great influence of the Danube river on its tributary, but also due to the lower anthropogenic pressure and the presence of Belev and Manta natural lakes located in the floodplain of the lower river sector. Of the fish species indicated by various authors as present in the Prut River, 29 species are protected by international legislation and national legislation of the riparian countries. Due to its transboundary status, the Prut River is one of the best-preserved medium-sized rivers in Romania.

**(P-25) PRESENCE OF ASIAN CYPRINIDS SPECIES IN THE
LOWER PRUT RIVER****Luiza FLOREA^{1*}**¹Dunarea de Jos University of Galati, Cross-Border Faculty,
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Taken from China in the '70s due to low maintenance costs and rapid growth rates and introduced firstly into the fish farm ponds and then in lakes and reservoirs, Asian cyprinids spread in rivers and in the Danube River where they came to reproduce. Their presence in the natural ecosystems, especially of the juveniles, resulting from their reproduction in the flowing waters, which has been signaled by many authors. The proportions of their invasion in the Danube river will be known with the processing of data from the "Join Danube Survey" program. Although these fish have reached most of their natural aquatic ecosystems, less in mountain-flowing waters, they would be a real threat only in lakes and ponds where, because of their herbivorous feeding regime, indigenous fish populations have decreased from one year to another because of lack of food and oxygen. The presence of Asian cyprinids in the Prut River was signaled both in the accumulation lake at Stanca-Costesti, where several large specimens of these species were captured, as well as the Lower Prut area, where large specimens of *Hypophthalmichthys molitrix*, *Aristichthys nobilis*, *Ctenopharyngodon idella* are frequently captured, but the presence of the summer juvenile fish is signaled every year as well.

(P-26) HUMAN INFLUENCE ON THE CLIMATE SYSTEM

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Climate either from the earth as a whole or in one country or location is often described as the weather recorded over a long period. It is defined in terms of long-term averages and other weather statistics, including frequencies of extreme events. The climate is far from static. As the weather changes daily, the climate changes, over a period of several years, decades, and millennia and longer, corresponding to the geological history of the earth. These changes, caused by internal and external factors for the climate system, are naturally intrinsic to the climate itself. However, not all climate change is caused by natural processes. People also exercised influence. By building cities and changing land use patterns, people have changed the climate on a local scale. Through a series of industrial-era activities in the mid-19th century, such as the accelerated use of fossil fuels and land deforestation that changes, people have also contributed to the greenhouse effect. This increased greenhouse effect leads to an increase in atmospheric concentrations of greenhouse gases, such as carbon dioxide and methane, and is generally considered responsible for the observed increase in global average temperatures.

(P-27) 6-HYDROXY-L-NICOTINE EFFECTS ON OPEN FIELD ACTIVITY IN THE RAT: IMPLICATIONS FOR A MODEL OF ANXIETY WITH CHLORISONDAMINE**Mihai-Vlad VALU^{1*}, Radu IONITĂ²**¹University of Pitesti, Department of Natural Sciences, 1 Târgu din Vale Str., 110040, Pitesti, Arges, Romania²University of Iași, Iași, Romania* Corresponding author: mihai.valu@upit.ro

6-Hydroxy-L-nicotine (6HLN) is a nicotine metabolite resulted from nicotine degradation within *Arthrobacter nicotinovorans* with positive effects on spatial memory and oxidative stress damage. Recently, our group demonstrated that 6HLN could act as an anxiolytic and as an antidepressant agent in chlorisondamine (CHL) rat model. Based on our previous results, in the present study, we hypothesized that 6HLN exhibited anxiolytic effects as assessed by open field test in the CHL rat model. CHL, a neuronal nicotinic ganglionic blocker, when injected into the peritoneal cavity to abolish sympathetic and parasympathetic nerve activity and also, blocks behavioral responses to nicotine for several weeks or months in rats. The blocking of the ion channel(s) prevents nicotine from exerting its rewarding effects on the central nervous system (CNS). The aim of this study was to evaluate the anxiolytic effects of nicotine (0.3 mg/kg) and 6HLN (0.3 mg/kg) using a chlorisondamine (CHL) rat model. The anxiolytic effect was evaluated by open field test. Both nicotine and 6HLN improved cognition related behaviors in anxiety effectively induced by CHL in the laboratory rats.

**(P-28) LUNG PATHOLOGY AT ALLOXAN-DIABETES MICE
TREATED WITH VEGETAL EXTRACT OF ARONIA
MELANOCARPA****Monica BUCĂ^{1*}, Paul DICU¹, Alina PĂUNESCU¹, Cristina
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This study follows the assessment of the effects that the vegetal extract of *Aronia melanocarpa* has over CD mice (re-derived mice from a non-consanguineous stem) with alloxan-induced diabetes. We established the physiological and biochemical indices, and at the end of the experiment we have removed the lung. 15 adult mice with weights ranging between 20 and 25 g were divided into three experimental lots, a control lot, a lot with alloxan- induced diabetes mice and another lot with diabetes treated with vegetal extract of *Aronia melanocarpa*. Alloxan Diabetes at CD1 mice was induced by administering two doses of Alloxan monohydrate 0,2 ml (130 mg/kg body dissolved in physiological serum), following which we administered through gavage, during two weeks, 0,2 ml vegetal extract of *Aronia*. The final results have shown that administering the vegetal extract of aronia melanocarpa to mice with alloxan-induced diabetes has had a beneficial effect over the physiological and biochemical indices and a restructuring effect over the lung.

**(P-29) INFLUENCE OF ENVIRONMENTAL FACTORS ON
THE OCCURRENCE OF DIABETES IN CHILDREN****Aurelia NICA^{1*}, Adina POPESCU¹, Daniela Cristina IBĂNESCU¹,**¹Dunarea de Jos University of Galati, Str. Domnească, nr. 47, Galati, Romania* Corresponding author: anica@ugal.ro

Every year, an increasing number of children are diagnosed with type 1 diabetes. Among children under the age of 15, the risk of developing type 1 diabetes has increased since the 1950s worldwide. Growth has been very rapid, especially in younger children under the age of 5 years. Recent studies in the US show that the number of children with type 1 diabetes increased by 21% between 2001 and 2009. This increase is surpassed by China, which is traditionally a low-incidence country, but the incidence of type 1 diabetes in children in Shanghai increased by 14.2% per year between 1997 and 2011. Like type 1 diabetes in children, the incidence of type 2 diabetes in adults is also rapidly rising. In addition, the incidence of type 2 diabetes is increasing not only in children, but also in adolescents. Also, more and more children show signs of both type 1 and type 2 diabetes. The emergence of these diseases early in life may have serious ramifications on health later. Many of these factors, namely vitamin D deficiency, selenium, environmental chemicals, air pollution, arsenic, bisphenol A, heavy metals, nitrates and nitrites, dioxin are discussed in this review.

**(P-30) RESEARCH ON THE INFLUENCE OF
TEMPERATURE AND WATER HARDNESS ON
BREATHING IN SOME FISH SPECIES**

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Fish change their energy metabolism, spending a larger quantity of energy to mitigate the stress. This paper aims to investigate the changes of some important respiratory indices (energy metabolism, respiratory rate, number of red blood cells) for three common species in the Arges river (*Carassius gibelio* Bloch, *Perca fluviatilis* L. and *Alburnus alburnus* L.), exposed to different conditions of temperature and degree of water hardness. The samples of fishes were being investigated at two temperature levels (18-20 °C, and 6-8 °C) and two levels of water hardness (150 and 300 mg CaCl₂ / l water). The experimental samples regarded the presence of respiratory and hematological changes (and, where appropriate, the extent of these changes) in crucian carp, perch and bleak adapted to different temperatures (6-8 °C and 18-20 °C) and revealed differences in the reactivity of the three species to changing environmental conditions. Although adaptation to low temperatures caused metabolic decreases and increases in the respiratory rate in all three species, the evolution of these parameters fitted the picture described in the specialized studies. The perch had the lowest oxygen consumption and adapted to low temperatures better than the crucian carp and the bleak.

**(P-31) CONSIDERATIONS REGARDING *TRITICUM*
PHYTOTOXICITY TEST**

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The *Triticum* test is commonly used as a pre-screening test in phytotoxicity studies for superior plants due to its advantages: rapid results, simplified operative procedure, good reproductibility and repeability and reduced costs. The laboratory methodology for *Triticum* test (Constantinescu method) is applied with some modifications imposed by the properties of the test substances (structural formula, purity, solubility in water or other solvents, stability in water or solvent, biodegradability). The potential of *Triticum* genus to be used in toxicity tests is demonstrated by numerous studies in which different categories of substances have been used and the following parameters have been determined: morphological, physiological, biochemical and genetic.

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**(P-32) OSTEOLOGICAL ANALYSIS OF A HUMAN
SKELETON WITH ARTIFICIAL CRANIAL DEFORMATION
EXHUMED FROM TIMISOARA - FREIDORF
(5TH CENTURY AD)**

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The osteological analysis of human remains discovered in archaeological sites completes the information regarding how people used to live in the past, what physical stress they suffered, the age at death and different habitual practices. This information helps us build a more realistic picture of our ancestors, and to understand how it reflects on us today. In this study we investigate the osteological remains of an individual with visible artificial cranial deformation (ACD) from an archaeological site in Timișoara – Freidorf, with gepidic cultural affiliation (5th century AD). The results indicate a middle adult female (35-50 years) with a stature of $157,7 \pm 4,6$ cm. Also, the skeleton presents a series of nonmetric traits, among which is the squatting facets on distal tibia, talar neck, and femoral condyles, which are typical to those who habitually spend time in an extremely dorsiflexed position. All this information will help to define the biological profile of the studied specimen and to provide more answers about gepid customs.

(P-33) FEEDING OF SOME *GOBIIDAE* SPECIES FROM THE ROMANIAN LITTORAL BLACK SEA**Adina POPESCU^{1*}, Daniela Cristina IBĂNESCU¹,**¹Dunarea de Jos University of Galati, Str. Domnească, nr. 47, Galati, Romania* Corresponding author: adina.popescu@ugal.ro

The research was conducted during 2013-2014 and had as main objective the information on the trophic spectrum of 4 goby species (*Apollonia melanostomus*, *Neogobius cephalarges*, *Mesogobius batrachocephalus* and *Gobius niger*) from various areas of the Black Sea and pursues to establish the nourishment's quantities and the qualitative composition. The fish were measured with the identifier to determine the length classes and weights to determine the weight classes.

To analyze the gastrointestinal content and to determine the ingested organisms, a binocular microscope was used. The filling index of the gastrointestinal tracts was estimated through the feeding coefficient calculation (C_H). For the *Apollonia melanostomus* females the filling index of the digestive tract was 48% and for the male 52%. For the *N. cephalarges* females the digestive tract is 56% full comparable to 44% for the males. For the *Mesogobius batrachocephalus* females the filling index of the digestive tract was 44% and for the male 56%. For the *Gobius niger* females the filling index of the digestive tract was 33% and for the male 67%. The average filling index of the digestive tract is much higher among the males (103.97) compared to those of females (80.64).

The main food is psamobionte mollusks which represents a high trophic importance.

**(P-34) AGRI-ENVIRONMENT MEASURES APPLIED BY
FARMERS FROM ARGES COUNTY IN ROMANIA****Gheorghe Cristian POPESCU^{1*}**¹University of Pitesti, Romania* Corresponding author: christian_popescu2000@yahoo.com

Nowadays, green technologies and agri-environment measures play a vital role for circular economy and sustainability of agricultural ecosystems. As a member of the European Union, Romania benefits from European funds for the implementation of some agri-environment measures. Sustainable growth of agriculture is one the most important objective for Romanian agriculture. In this paper, we included a documentary synthesis, an analysis and comparison of agri-environment measures applied by farmers in Arges county in period between 2014 and 2017. Arges County has a diversity of agricultural ecosystems and farmers have been interested in applying agri-environment measures promoted by the National Rural Development Plan. More than 60 communes in the county of Arges have accessed European funding for the application of agri-environment measures. The main agri-environment measures applied by farmers were represented by measures designed for high natural value meadows, traditional agricultural practices, green crops and organic farming. These practices and funds encourage farmers to protect and enhance the environment on their farmland and make Romanian farming more sustainable.

**(P-35) STUDY THE COMPLEX DISEASE BETWEEN THE
FUSARIUM OXYSPORUM AND NEMATODE
MELOIDOGYNE JAVANICA ON CUCUMBER AND THE
POSSIBILITY OF BIOCONTROL IT BY BIO-FUNGUS
*TRICHODERMA HARZIANUM***

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Agricultural pests are one of identified factors of crops as many botany scientists have shown, plant nematodes are one of the most important and dangerous five economic pathogens in the world due to their interaction with other organisms like fungi and bacteria. This study aimed to isolate pathogenic fungi associated with nematodes from cucumber roots and the ability to control them by bio-fungus *Trichoderma harzianum* and chemical fungicide topsin in Basra city in Iraq. Three types of fungi were isolated from the roots of cucumber plant infected with the nematode root knot *Meloidogyne javanica* which are *Fusarium oxysporum*, *Rhizoctonia solani* and *Macrophomina phaseolina*. The pathogenic test of these fungi was carried out on the cucumber plant and the lowest proportion of seed germination was in *F.oxysporum* and *M.phaseolina* which reached to 67.60% and 75.00% respectively followed by *R.solani* which reached to 82.50%. The highest ratio for seedling death in *F.oxysporum* and *M.phaseolina* which reached to 18.51% and 16.66% respectively followed by *R.solani* which reached to 12.12% . The results showed the ability of bio-fungus *T.harzianum* to inhibit the growth of pathogenic fungus *F.oxysporum* by dual culture process, the antagonistic ratio reached to 1 in *F.oxysporum* according to the Bell scale. The using of bio-fungus *T.harzianum* in concentration 1.7×10^6 in vitro lead to reduce the eggs hatching ratio and death of nematode to 23.44% and 21.46% respectively. While the use of fungicide topsin lead to reduce the eggs hatching ratio and

death of the nematode to 16.66% and 15.68% respectively. *F.oxysporum* is completely inhibited by fungicide topsin, also the fungicide topsin affected on bio-fungus *T.harzianum* and the effect ratio reached to 53.00%. Also the results showed the effect of different treatments of soil contaminated with nematode root knot *M.javanica* and non-contaminated soil with nematode root knot *M.javanica* in the laboratory on seeds germination and seedling death in *T.harzianum* + topsin treatment, *T.harzianum* treatment and control which reached to 100% . While the lowest ratio of seedling death and infection severity in non-contaminated soil with nematode root knot *M.javanica* which reached to 0.00%. Whereas the lowest number of root knot in the same treatments in contaminated soil reached to 8, 6 and 14 knots / plant respectively. The highest plant length was in *T.harzianum* + topsin treatment, *T.harzianum* treatment and control non-contaminated soil with nematode root knot *M.javanica* which reached to 143.00, 135.00 and 136.00 cm / plant respectively, while roots length was 15.00, 11.00 and 13 cm /plant

**(P-36) THE EFFECTS OF CLINOPTILOLITE FROM FEED
UPON FISH REARING AND WATER QUALITY - A REVIEW****Steluta Camelia SAVA^{1*}, Elena POGURSCHI¹, Gratzuela BAHACIU¹, Nela DRAGOMIR¹, Carmen Georgeta NICOLAE¹**¹University of Agronomic Sciences and Veterinary Medicine of Bucharest* Corresponding author: savacamelia64@yahoo.com

Maintaining and improving the health status of fish as well as increasing production performance of fish ponds is an essential coordinate of aquaculture systems. The use of natural zeolites as additives in fish feed has become an important concern of researchers over the past two decades. The paper aims at reviewing the global research on the use of clinoptilolite natural zeolitic material as a feed additive in the feeding of various fish species and how water quality is influenced by zeolite administration in concentrations between 0.5 and 4 %. Clinoptilolite zeolite is an aluminosilicate of the microporous solids' family acting as a molecular sieve. Clinoptilolite captures heavy toxic metals (Cd, Pb) and also cations, such as ammonium, from fish-ponds water, which leads to optimum media conditions and increased productivity. According to the results of the research in the field, the clinoptilolite zeolite has to be considered as a material with high potential of applicability in the aquaculture. Worldwide, research is ongoing on how to use clinoptilolite more efficiently, as well as finding new opportunities for applying this zeolite to aquaculture.

**(P-37) DISTRIBUTION OF REPTILE SPECIES IN TIMIȘ
COUNTY (WEST ROMANIA)****Ionela – Marilena SLEJIUC¹*, Stefan POPA¹**¹ National Museum of Banat, 4, Martin Luther Str, Timisoara, Timis, 300054, Romania* Corresponding author: ionela.slejiuc93@e-uvr.ro

In Romania many studies address the distribution of herpetofauna, but there are still areas where information is incomplete. Since many reptiles are protected species, information about distribution is essential for their preservation. This research is based upon field work performed between March 2017 and November 2018. We investigated the Timis County area (West Romania) to update the distribution records of reptile species. For this area, previous studies mention 13 species, but in our research were recorded in the field only 12 species: *Emys orbicularis*, *Anguis colchica*, *Lacerta agilis*, *Lacerta viridis*, *Darevskia praticola*, *Zootoca vivipara*, *Podarcis muralis*, *Coronella austriaca*, *Zamenis longissimus*, *Natrix natrix*, *Natrix tessellata* and *Vipera berus*. Although we have identified potential habitats, we didn't manage to find *Vipera ammodytes* which was recorded only in Pietroasa before 1990. Among the interesting records, we discovered 25 new locations where *Emys orbicularis* occurs and we added new locations for some cryptic species: 31 for *Anguis colchica*, 4 for *Darevskia praticola* and 17 new locations for *Coronella austriaca*. Also, we observed in 8 locations *Natrix natrix* cf. *persa*, and in 2 locations *Lacerta agilis* erythronotus coloration morph.

**(P-38) EXTRACTION OF FRUCTANS FROM PARSNIP
(PASTINACA SATIVA) DEVELOPED BY ULTRASOUND-
ASSISTED AND ENZYME-ASSISTED TECHNOLOGIES****Andreea-Cristina TECUCIANU^{1*}, Simona OANCEA¹**¹Departament of Agricultural Sciences and Food Engineering,
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Parsnip (*Pastinaca sativa*) is a vegetable that gained attention due to its significant content of fructans, besides macronutrients and other biologically active compounds. The major compound of fructan class is the inulin, an ingredient with prebiotic properties used in pharmaceutical and functional food industries.

The main purpose of this study was to evaluate the extraction yield of fructans and phenolics following non-conventional techniques (ultrasound and enzyme -assisted extraction) and to compare to the traditional method. Extraction was performed in water, as eco-friendly solvent. Ultrasound-assisted extraction was optimized for different extraction time (5, 10 and 15 minutes) at ultrasonic amplitude of 70%. The enzyme cellulase was used in the pre-treatment experiments. Enzyme-assisted extraction was optimized for different incubation temperature (40, 50 and 55oC). Quantitative analysis of the investigated compounds was done using standard spectrophotometric methods.

The results have shown good extraction yields in ultrasonic and enzyme treated extracts compared to those of samples extracted by traditional methods. High levels of inulin and phenolic compounds were obtained in ultrasonic extracts which undergoes an enzymatic treatment for 3h at 40°C.

**(P-39) RESEARCH REGARDING THE INFLUENCE OF
PHARMACEUTICAL SUBSTANCES ON THE
GAMETOPHYTE OF SOME FERNS SPECIES**

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In the last ten years toxicity test have been carried out to assess the environmental risk associated with different categories of pollutants, including medicinal substances for human use and their metabolites. The aim of this research was to study the influence of diclofenac and amoxicillin on gametophyte differentiation in two ferns species: *Dryopteris affinis* (Lowe) Fraser-Jenkins and *Dryopteris filix-mas* (L.) Schott. The spores were continuously exposed to the following concentrations of diclofenac: 1mg/100 ml (D3), 10 mg/100 ml (D2), 100 mg/100 ml (D1) and amoxicillin: 5 mg/100 ml (A3), 50 mg/100 ml (A2), 500 mg/100 ml (A1). The cultures were maintained under controlled conditions (temperature, illumination and humidity) and the spores germination and gametophyte differentiation were periodically monitored. The exposure of the two species to diclofenac and amoxicillin led to modification on morphological and physiological level compared to control.

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**(P-40) COMPARATIVE STUDY OF THE SUBSTRATE
INFLUENCE ON THE GERMINATION AND
DEVELOPMENT OF RILA TOMATO SEEDLINGS**

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It is known that vegetables are some of the valuable foods in the diet because of their content in nutrients, vitamins and minerals. Many species used in human food are grown by producing seedlings (*Solanaceae*, *Brassicaceae*, etc.). In order to achieve a good tomato culture, we must first take into account the quality of the seedlings. In this work we used seed of the same quality, that was sown for germination on 4 types of substrate (Gramoflor peat, Jiffy peat, Killasman TS3 peat and Milaflor peat) to see how influence the germination and the growth of Rila tomato seedlings. Throughout the research it has been observed that the substrate influences the dynamics of plant height growth, the number of leaves per plant, roots length, root volume, aerial plant part volume, total weight, root weight, aerial plant part weight.

**(P-41) RESEARCH ON THE EFFECTS OF DIFFERENT
TECHNOLOGY SEQUENCES ON THE SHALLOTS
GROWTH AND DEVELOPMENT**

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The aim of this paper was to observe the influence of different technological factors on the growth and development of shallots (*Allium ascalonicum*). We choose to study this variety due to their antioxidant, anti microbial and nutritional properties. It was set up a bifactorial experience (A factor: planting distance – with 3 graduations and factor B: irrigation method – with 2 graduations), resulting 6 experimental variants. Parameters such as plant height and leaf number on the plant were monitored for 3 months (April to June). The results were compared and recommendations were made.

**(P-42) RESEARCHES CONCERNING THE ASSESSMENT OF
THE AGROPRODUCTIVE POTENTIAL OF NEW CHERRY
VARIETIES IN CLIMATIC CONDITIONS IN NORTH- EAST
OF ROMANIA**

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Cherry is a fruit species of particular economic importance, given by the nutritional, technological and commercial attributes of the fruit, which find optimal conditions of the agro-productive potential in N-E Romania.

The study aimed to assess the sensitivity to frost and the effect of low temperatures on the viability of fruit buds on 11 cherry varieties (4 foreign and 7 native) during 2017-2018.

Since the first part of 2018, observations and determinations have been made regarding the tree vigor (the trunk area cm), the length of annual growths and their number on the tree, the main fructification phenophases and the behavior towards the limiting factors of production (frost,, drought, specific diseases of the cherry tree). As a result of the observations made, it was found that the limiting factors, namely the climatic conditions, did not directly influence the varieties studied.

**(P-43) THE USE OF ENZYMATIC LABORATORY INDICES
AST AND ALT CONCERNING MONITORING ALCOHOLIC
LIVER DISEASE FOR ARGES COUNTY POPULATION**

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The raised alcohol intake is the cause of numerous affections, such as hepatic steatosis, hepatic fibrosis, hepatic cirrhosis, PAH, TB and various types of cancer. Moreover, the alcohol abuse is involved in the occurrence or aggravation of some mental illnesses and antisocial acts. Approximately one in three people in the world, meaning 2,4 billions, consumes alcohol. Our study was aimed at the way in which the enzymes AST and ALT are used in monitoring induced liver diseases by the alcohol consume, in hospitalized patients in Pitești County Emergency Hospital, in 2014. The subjects of our study come from both rural and urban areas and are aged between 18 and 90 years old.

ALT has a significant importance in liver pathology, being the most used indice of cytolysis and minimal lesions detection. Raises in value were detected in alcoholic hepatitis, liver steatosis, acute, viral and toxic hepatitis, myocardial infarction, acute pancreatitis.

Raises in AST values are found in alcoholic hepatopathies, cirrhosis, extended liver cirrhosis, toxic and viral hepatitis, arrhythmias, bleeding, sepsis.

By analyzing the use of the enzymatic indices AST and ALT, with other laboratory indices in testing the population's health state, we wish to warn the society about the hepatic illnesses' impact on family environment and general community.

**(P-44) ASPECTS REGARDING SEEDLING PRODUCTION
OF DECIDUOUS TREES IN RECIPIENTS, WITHIN
VOIVODENI NURSERY**

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Arboretum regeneration, as a process of assuring forests' continuity can be accomplished through two methods: natural regeneration and artificial regeneration. Due to the fact that some species regenerate hardly naturally, the completions are made with seedlings produced in forestry nurseries. By using different technologies of seedlings' production within forestry nurseries, one wished to obtain exemplaries as vigorous as possible and with a percentage of grip as large as possible. The paper has as study object containerized production of sessile oak (*Quercus petraea* Liebl.), red oak (*Quercus rubra* L.) and mountain sycamore (*Acer pseudoplatanus* L.) using five categories of edafic substrate (V₁-humus 100%; V₂-peat 100%; V₃-humus 33% + peat 33% + sand 33%; V₄-humus 50% + peat 50%; V₅-humus 30% + peat 70%). The seeds were sown in block recipients, Hiko type, placed within Voivodeni nursery. Following statistical calculations, the most satisfying results were registered in variants V3, V4 respectively V5, both in terms of seedlings' rising as well as in seedlings' growth and development.

**(P-45) THE INFLUENCE OF SOME CHEMICAL
SUBSTANCES IN SEEDS' GERMINATION STIMULATION
AND HONEY LOCUST PLANTLETS' DEVELOPMENT
(*GLEDITSIA TRIACANTHOS* L.)**

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In forestry nurseries are used various culture technologies for seedlings' production on generative way. Irrespective of adopted technology the seed is incorporated in germinative bed, where there have to be favorable conditions for germination-rising process. The paper has as study object seeds' germination stimulation and honey locust plantlets development (*Gleditsia triacanthos*) using two categories of edafic substrate (peat and peat+sand) and different chemical substances. Germination rates of honey locust seeds were investigated by using chemical treatments in more variants: (V₁) concentration of 20 g at 0,5 l calcium hydroxide; (V₂) growth stimulator, concentrated aqueous solution of sodium paranitrophenolate (0,3%); (V₃) aqueous solution with a content in auxins (ANA-alpha-naphthylacetic acid) of 9%; (V₄) concentration of 1 g at 0,5 l water of copper sulphate (CuSO₄); (V₅) concentration of 1,25 g at 0,5 l potassium permanganate water (KMnO₄); (V₆) concentrated sulfuric acid (H₂SO₄). The best results regarding both seeds' germination, irrespective of used substrate, as well as plantlets' development were registered at variant V2 (atonik) respectively V3 (bionat).

**(P-46) RESEARCHES ON THE AQUATIC FAUNA OF
CÂRCINOV RIVER**

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The Carcinov River is part of the water catchment area Argeș - Vedea, being an important tributary of the Argeș River. The present paper was based on the bibliographic material as well as the field research carried out during 2018-2019. The present study aims to achieve a hydromorphological characterization of the Carcinov basin, as well as an inventory of the aquatic animal species in this river. By research presented in the study we sought to evaluate the state and evolution of fish fauna in the Cârčinov river, over the last 30 years, trying to highlight the causes that led to the current situation and to propose measures for the conservation of natural fish fauna in the future. From the point of view of the benthic fauna, we have sought to identify the structure of benthic biocenoses in the monitoring points; establishing saprobity indices for each species identified and incorporation of the monitoring sections into the appropriate saprobity class; determining the quality of Cârčinov River according to the Water Framework Directive 2000/60/EU.

**(P-47) THE ROLE OF NATURAL EXTRACTS AS
ALLEVIATORS OF SALT STRESS IN PLANTS**

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More and more cultivated areas are affected by high salt content. Natural extracts such as seaweed extracts or extracts obtained from different plant organs often enhancing growth, and ability to tolerate abiotic stress. Carrot roots extract or garlic extracts are some of the natural biostimulant compounds. Extracts from different kinds of plant material contain vitamins or precursors of vitamins, organic acids, phenolic compounds, hormones, which may be responsible for stimulating growth and increasing stress tolerance. In our work we investigated the response of seeds treated with natural extracts, under salt stress conditions (100 mM NaCl). Depending on the species and the concentration of the extracts, the germination and growth parameters showed significantly improved values, compared to the soaked seeds in the saline solution.

**(P-48) THE BREATH - THE EXPERIENCE OF BEING
PRESENT****Ileana-Loredana VITALIA^{1*}**¹ University of Pitesti, Department of Psychology, Communication Sciences and Social Assistance, Pitesti, Romania*Corresponding author: ileanavitalia@yahoo.com

Respiration is one of the most important biological function. From the first moments of our life, this vital and mysterious process becomes strongly connected to our physical and psychological health. We are being breathed. Our lives depend on it, even if we are not constantly aware of the significance of the breath. Urban life, sedentary and in-door activities, the constant avoidance of nature activities have been shown to influence the human capacity of breathing correctly and healthy. Other factors associated with respiratory difficulties could be psychological stress, anxiety, depression, emotional disorders. Detrimental effects of these factors have been counteracted by different forms of meditation, relaxation, and breathing techniques.

Because our breathing happens in present, here and now, it can serve as the first anchor for our attention, giving us the opportunity to cultivate present moment awareness. Different meditative traditions consider that the breath has within it all the elements for cultivating our humanity, especially the capacity for wisdom and for compassion.

In this study we have focussed on the benefits of breathing meditation techniques on emotional health. We supposed that using a brief and simple breathing exercise would allow the group members to improve their present emotional experience.

**(P-49) EFFICIENT SEPARATION OF
NAPHTHODIANTHRONES FROM ST. JOHN'S WORT
EXTRACT BY SEQUENTIAL LIQUID-LIQUID
EXTRACTION AND SPE**

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Hypericin and pseudohypericin are important compounds found in St. John's wort extracts. These natural products possess a large range of therapeutically benefits but the studies concerning their biological action is impeded by their low content in the plant. In this work a process for the advanced separation of total naphthodianthrone has been developed. On short, the approach consists of a sequential partition of crude extract between several liquid –liquid separator followed by a solid phase extraction (SPE) using cartridges filled with C18 material. Important operational parameters like solvent volume, solvent type, number of extraction cycles were assessed. The best results were obtained by successive extraction with n-hexane, Et(2)O and EtOAc. The final SPE step rise the purification extent to near 97%. The whole purification process was evaluated using and HPLC system equipped with a fluorescence detector which allow a selectively analysis of studied naphthodianthrone

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**(P-50) THE INFLUENCE OF THE GLOBAL WARMING
REGARDING THE FLIGHT PERIOD, THE BIOLOGY AND
THE ECOLOGY OF SOME BUTTERFLIES AND MOTHS
FROM THE NORTH WESTERN PART OF ROMANIA
(TINCA AREA, BIHOR COUNTY)**

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In this paper are presented biological and phenological anomalies observed at the butterflies and moths from the north-western part of Romania (Tinca area, Bihor county) due to the consequences of global warming. These anomalies were observed during 2010-2018 at 33 species of butterflies and moths. These climatic changes cause the extension of the flight period, the appearance of additional generations or the hibernation in another development stage, simultaneously with the stage known in the scientific literature, precocious appearances in nature, some resistance at dryness and heat of some species.

**(P-51) LEAF BEETLES (CHRY SOMELIDAE, COLEOPTERA)
OF TINCA AREA (BIHOR COUNTY, ROMANIA)**

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In this work are presented data about the fauna of leaf beetles (Chrysomelidae) from Tinca area, Bihor county, the researches being, recorded during 2002-2018. There were identified 165 species belonging to 11 subfamilies, 46 genera, 6 subspecies and 41 chromatic varieties. Two species: *Dibolia russica* Wse and *Phyllotreta scheuchi* Hktr. are mentioned for the first time in Romania in 2017, some species are relatively rare in Romania: *Cassida seladonia* Gyll, *Cassida margaritacea* Schall, *Chrysolina aurichalcea* Mann., *Galeruca melanocephala* Ponz, *Longitarsus pinguis* Wse, *Longitarsus pallidicornis* Kutch, *Longitarsus ochroleucus* Marsh, *Longitarsus fuscoaneus* Redt, *Chaetocnema orientalis* Baud, *Chaetocnema compressa* Letzn, *Longitarsus gracilis* Kutch.

**(P-52) RELAXATION AND CREATIVE MEDITATION
CENTERED ON NATURE HELPS IN ACTIVATING COPING
MECHANISMS**

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In a previous study we have found that, when people watch a video with life in nature, they become more aware of their profound Self, with immediate consequences like being significantly more relaxed and aware of their long term goals, suggesting that nature contemplation allows the access to both basic needs and long term goals, and the connection between them and external resources, generating positive emotions. Thus, it helps in detaching from the stress factors and automatic functioning, and the person has the positive energy for creative actions. The present study reports the findings of a short experiment concerning the coping or defense mechanisms activated by a more complex task, focused on nature. First, the participants in the experimental group participated in a relaxation technique, focusing on the natural functioning of Self and the imaginary exploration of their favorite place in nature, and afterwards drawing it. The participants in the control group received no treatment. The statistical analysis showed that, at the end of the relaxation and the creative task, the participants in the experimental group had a significantly lower tendency to catastrophize, and a stronger focalization on planning. The results confirm the activation of internal resources.

**(P-53) PHYSICO-CHEMICAL CHARACTERIZATION OF
SOME WALNUT FRUITS COLLECTED IN 2018 FROM
UNIVERSITY OF CRAIOVA - S.C.D.P. VÂLCEA, ROMÂNIA**

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The fruits of walnut (*Juglans regia L.*) have been part of the human diet for thousands of years, recently being discovered that they are rich in omega-3 fats and contain higher amounts of antioxidants than most other foods. Among other benefits, they improve brain health, prevent heart disease and cancer, treats cough and stomach ache.

The aim of this study was to analyse the chemical composition of the fruits at full maturity from eight walnut cultivars, grown in a trial, at University of Craiova - Fruit Growing Research and Extension Station (S.C.D.P.) Vâlcea, Romania. Walnut varieties with different geographic origins and different agro-biological characteristics were used. The fruits of four Romanian cultivars (*Jupânești*, *Sarmis*, *Unival* and *Valcor*), three French cultivars (*Ferjean*, *Fernor* and *Franquette*) and an American one (*Vina*) were analysed. For all varieties, the content of proteins, polyphenols, flavonoids, tannins, carotenoids, free fatty acids and water was determined.

Since *Juglans regia L.* trees were grown in the same environmental conditions and the same cultural practices were applied, it can be concluded that variability in chemical composition of the fruits has depended on the agro-biological characteristics of cultivars.

**(P-54) THE ROLE AND INFLUENCE OF ABIOTIC
FACTORS IN *LEMNA MINOR* GROWTH AND
PRODUCTIVITY UNDER EXPERIMENTAL LABORATORY
CONDITIONS**

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This study examines the influence of abiotic factors over *Lemna minor*, along with its symbiotic organisms, in its growth rate under laboratory conditions. We explored the ability of the plant to purify water taken from fish ponds under variable conditions (such as temperature, symbiotic organisms, oxygen, nitrites, nitrates and ammonia). The viable specimens were exposed to simulated conditions during 18 months and samples have been taken periodically.

An increased Malondialdehyde (MDA), catalasa, polyphenol, chlorophyll content content in *L. minor* indicated reactive oxygen species (ROS) accumulation and that oxidative damage has occurred. This is due to ROS growth potential to induce oxidative stress contributing to lipid peroxidation and membrane damage, MDA level was considered as an indicator of the lesion.

(P-55) PAULOWNIA TOMENTOSA – NEW SPECIES FOR THE INDUSTRIAL LANDSCAPING**Olena DUBOVA^{1*}, Olena VOITOVYCH¹**¹ Zaporizhzhia National University, the Department of Landscape Design and Genetics, Ukraine* Corresponding author: edubova17@gmail.com

Paulownia tomentosa is a large arborescence tree planted mostly for its fast growing wood and landscape design. Country of origin of this plant is China. An unusual exotic look is given to the tree due to lilac violet flowers. *Paulownia tomentosa* Steud. is a new, perspective species for use in Ukrainian cities. The purpose of our work was to study the biological characteristics of *Paulownia tomentosa* in the conditions of the Zaporizhzhia city. The research was conducted with trees grown from seeds and planted in 2000-2018. Much attention is given to measurement parameters of growth and development, physiological parameters of frost resistance *Paulownia tomentosa* in conditions of industrial city. Annual observations of the seasonal rhythm of *Paulownia* showed that it starts and ends its vegetation late, an average in 230 days in the growing season. The study of the morphology of the vegetative organs of the *Paulownia* in the city of Zaporizhzhia showed that the investigated parameters of biomorphological development (height of the plant, length of annual growth, leaf plate size, number of leaves per year) are within the normal. The development of generative organs of *Paulownia* was under the influences of temperature. Flowering of plants does not occur after strong winters due to the buds were freezing.

**(P-56) PHYTOTOXICITY OF CADMIUM AND LEAD IN
SOME MEDICINAL PLANT SPECIES****Maria Alexandra PAP¹, Denisa PINTUR¹, Monica POPESCU^{1,*}**¹University of Pitesti, Romania* Corresponding author: monica_26_10@yahoo.com

Some heavy metals, such as Zn, Fe, Cu, Mn are micronutrients. Other metals, such as Cd, Hg and Pb are toxic. These nonessential elements can reach high levels in agricultural soil. Plants possess many defense mechanism to tolerate heavy metals intoxication.

The effects of cadmium and lead have been investigated in lavender and anise seeds and plantlets, using Cd and Pb concentrations of 20, 50, 100, 200 and 400 μM . Germination rates and growth parameters are investigated. For both medicinal herbs, Cd and Pb did not significantly influence the germination rate in the tested concentrations. Small amounts of metal can have significant stimulation effect on growth, while larger amounts significantly inhibit root and stem growth.

**(P-57) ENTERIC INFECTION WITH *CLOSTRIDIUM*
BACTERIA IN ARGES POPULATION****Ionica DELIU^{1*}, Ioana LIXANDRU¹**¹University of Pitesti, Romania* Corresponding author: ionica.deliu@upit.ro

Clostridium bacteria have been associated with intestinal diseases in humans, mostly after antibiotic treatments for a long period. The aim of this paper was to establish the incidence of these pathogens involved in enteric infections in 2017 - 2018 in Arges population.

Were investigated 294 patients, age one to 94 years, from villages and cities, both women and men. The most patients had age over 60 years (65,64%). The incidence of infections was 21%, higher in men than in women; mostly toxin B was detected in patients.

The main concern in many infections is the ability of antibiotics to reduce both pathogenic and saprophytic bacteria, so the pathogens like *Clostridium difficile* can increase and cause enteric diseases, even pseudomembranous colitis.

