UNIVERSITY OF PITESTI
FACULTY OF SCIENCES,
PHYSICAL EDUCATION AND INFORMATICS

Current Trends in Natural Sciences

International Symposium

Book of Abstracts

May 18-20, 2023

International partners:

Mansoura University, Egypt

Atatürk University, Erzurum, Turkey

Zaporizhzhia National University, Zaporizhzhia, Ukraine

Organizing Committee:
(alphabetical order)

President of the Organizing Committee:
Monica POPESCU – University of Pitesti, Romania

Organizing Committee Members (alphabetical order):
Daniela BĂRBUCEANU - University of Pitesti, Romania
Olena BOIKA - Zaporizhzhia National University, Zaporizhzhia, Ukraine
Zeynel DALKILIÇ - Adnan Menderes University, Aydin, Turkey
Ionica DELIU – University of Pitesti, Romania
Codruţa DOBRESCU – University of Pitesti, Romania
Oana DRĂGHICEANU – University of Pitesti, Romania
Zeki GÖKALP - Erciyes University, Kayseri, Turkey
Monica NEBLEA – University of Pitesti, Romania
Gheorghe Cristian POPESCU – University of Pitesti, Romania
Nicoleta RĂBAN-MOTOUNU – University of Pitesti, Romania
Ion SCURTU -The Academy for Agricultural and Forestry Sciences – Horticulture Section
Yasser SHABANA - Mansoura University, Egypt
Liliana Cristina SOARE – University of Pitesti, Romania
Anca Nicoleta ŞUŢAN – University of Pitesti, Romania
Telat YANIK – Agri Ibrahim Cecen University, Turkey
Alina Mihaela TRUŢĂ - University of Pitesti, Romania

Scientific Committee:
(alphabetical order)

Muhammed ATAMANALP - Atatürk University, Erzurum, Turkey
Daniela BARBUCEANU - University of Pitesti, Romania
Olena BOIKA - Zaporizhzhia National University, Zaporizhzhia, Ukraine
Monica BOSCAIU - Polytechnical University of Valencia, Spain
Gheorghita BRINZEA - University of Pitesti, Romania
Vincenzo CANDIDO - University of Basilicata, Italy
Denisa CONETE - University of Pitesti, Romania
Ionica DELIU - University of Pitesti, Romania
Gaetano DISTEFANO - University of Catania, Italy
Zeynel DALKILIÇ - Adnan Menderes University, Aydin, Turkey
Codruta Mihaela DOBRESCU - University of Pitesti, Romania
Leonard Magdalin DOROBAT - University of Pitesti, Romania
Mohamed Abdalla ELAIDEY - Mansoura University, Egipt
Irina FIERASCU - The National Institute for Research & Development in Chemistry and Petrochemistry, ICECHIM, Bucharest, Romania
Radu Claudiu FIERASCU - The National Institute for Research & Development in Chemistry and Petrochemistry, ICECHIM, Bucharest, Romania
Zeki GÖKALP - Erciyes University, Kayseri, Turkey
Gonca GUNVER DALKILIÇ - Adnan Menderes University, Aydin, Turkey
Nicoleta IANOVICI - West University of Timisoara, Romania
Kaspars KAMPUSS - Latvia University of Agriculture, Jelgava, Latvia
Sedat KARAMAN - Gaziosmanpasa University, Tokat, Turkey
Mihail George MAN - University of Pitesti, Romania
Gabriel Alexandru MARINESCU - University of Pitesti, Romania
Florina Cristina MIHAESCU - University of Pitesti, Romania
Monica Angela NEBLEA - University of Pitesti, Romania
Magdalena NEGRU - University of Pitesti, Romania
Ivo ONDRASEK - Mendel University of Brno, Czech Republic

Alina PAUNESCU - University of Pitesti, Romania
Michele PERNIOLA - University of Basilicata, Italy
Cristina Maria PONEPAL - University of Pitesti, Romania
Aurel POPESCU - University of Pitesti, Romania
Florentina Carmen POPESCU - National Research and Development Institute for Biotechnology in Horticulture Stefanesti Arges, Romania, Romania
Cristian Gheorghe POPESCU - University of Pitesti, Romania
Monica POPESCU - University of Pitesti, Romania
Nicoleta RABAN – MOTOUNU - University of Pitesti, Romania
Tamer RIZAOGLU - Kahramanmaras Sutcu Imam University, Turkey
Ion SCURTU - The Academy for Agricultural and Forestry Sciences – Horticulture Section, Romania
Yasser SHABANA - Mansoura University, Egypt
Liliana Cristina SOARE - University of Pitesti, Romania
Daniela Ileana STANCU - Arges County Museum, Romania
Anca Nicoleta SUTAN - University of Pitesti, Romania
Yanik TELAT - Agri Ibrahim Cecen University, Turkey
Asea TIMUS - The State Agrarian University of Moldova, Republic of Moldova
Alina Mihaela TRUTA - University of Pitesti, Romania
Robert ULEWICZ – Czestochowa University of Technology, Czestochowa, Poland
Aydin UZUN - Erciyes University, Turkey
Mehmet YAMAN - Erciyes University, Turkey

In-Person Session

(1) FROM NATURE TO NANOTECHNOLOGY: NANOMATERIALS PHYTOSYNTHESIS

Irina FIERASCU[1,2], Radu Claudiu FIERASCU[1,3*], Anda Maria BAROI[1,2], Roxana Ioana MATEI (BRAZDIS)[1,3], Toma FISTOS[1,3], Ioana Catalina FIERASCU[4], Irina CHICAN[1], Ioana Silvia HOSU[1]

[1]National Institute for Research & Development in Chemistry and Petrochemistry - ICECHIM Bucharest, Romania

[2] University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania

[3] University "Politehnica" of Bucharest, Romania

[4] University of Medicine and Pharmacy "Carol Davila", Romania

* Corresponding author: fierascu.radu@icechim.ro

In our days, nanotechnology can be considered one of the most important steps in the current scientifical development, being involved in multiple every-day applications. With the development of the "green chemistry" principles, nanomaterials phytosynthesis gain much attention from the scientific community.

For over a decade, our group used the phytosynthesis process to develop nanomaterials, gaining insights on its advantages, as well as its current bottle-necks. Using our own experience, these issues will be presented and discussed, as well as the future perspectives on this area.

Acknowledgments

This work was supported by the Ministry of Research, Innovation and Digitization, CCCDI - UEFISCDI, project number PN-III-P4-PCE-2021-0292, contract 92PCE/2022, and project number PN-III-P2-2.1-PED-2021-0273, contract 644PED/2022, within PNCDI III. The support provided by the Ministry of Research, Innovation and Digitization through Program 1 - Development of the national research and development system, Subprogram 1.2 -Institutional performance - Projects to finance excellence in RDI, Contract no. 15PFE / 2021 is also gratefully acknowledged.

(2) TOWARDS SUSTAINABLE AGRI-FOOD VALUE CHAINS IN ARGES COUNTY, ROMANIA

Cristian Gheorghe POPESCU[1,2*] , Monica Mihaela TUDOR[2], Lorena florentina CHIȚEA[2], Mihai Alexandru CHIȚEA[2], Elisabeta Ștefania ROȘU[2]
[1] University of Pitești, Romania
[2] Institute of Agricultural Economics, Romanian Academy, Bucharest, Romania
* Corresponding author: christian_popescu2000@yahoo.com

The prosperity of rural economy is considered a determining factor of the attractiveness of rural communities in Argeș. As small and medium-scale agriculture prevails in Argeș rural area, there is a need to increase the value added of agricultural and agri-food activities that contribute to rural prosperity.
To reach this goal, the main mechanisms aim to increase sustainable horizontal and vertical integration of local actors in the agri-food chain and support for increasing consumers' confidence. The most important three recommendations that resulted from the discussions with the Argeș platform members can be summarized as follows:

- amending the regulatory framework in short chains and cooperation in agriculture, so that this better responds to the purposes for which it was established;
- supporting horizontal cooperation and strengthening the role of cooperatives in marketing the production of their members, through the development of collection and storage facilities in the proximity of cooperatives;
- increased rigour in the control of quality standards that should result in consumers' confidence in products sold on local markets;
- developing skills and providing advisory services to farmers for the sustainable market integration through training modules and advisory centers;
- facilitating access to funding schemes in particular for small farms;

- fiscal stability and predictability.

Acknowledgments
SHERPA H2020 project acknowledges the MAP Arges members and invited guests that actively contributed to the MAP discussions and other organisations, authors and projects which provide sources of data and information, cited below. SHERPA is funded from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 862448

(3) DETERMINATION OF POLLEN VIABILITY AND POLLEN GERMINATION CHARACTERISTICS OF SOME SHARKA DISEASE RESISTANT APRICOT CULTIVARS

Aydın UZUN[1*], Hasan Talha ÜNSAL[1], Hasan PINAR[1]
[1]Erciyes University Faculty of Agriculture, Department of Horticulture, Kayseri-Türkiye
* Corresponding author: uzun38s@yahoo.com

Turkey is leading the apricot production in the world and also has an important genetic diversity. With the advantage of having different ecological conditions, apricots are produced for different purposes. But biotic and abiotic stress factors affect the production of important value, causing yield and quality losses. Apricots' most important problems in breeding are low fruit yield, spring late frosts, and self-incompatibility in some cultivars and according to this yield problem, diseases and pests. In these factors, Plum Pox Virus (PPV) the agent of the sharka disease is the most important disease in the apricot and stone fruits with the harm and social effects it made. The best solution for this disease is using resistant cultivars in production. At this point, breeding programs especially including the sharka resistant cultivars are important.
In this study, pollen viability and pollen germination parameters were determined by the "Stark Early Orange" (SEO), "Harleyne", "Harcot" and "Zard" cultivars. These cultivars are resistant to sharka and may be used in breeding studies as pollinators. Pollen viability was determined with 2,3,5-Triphenyltetrazolium chloride (TTC) and pollen germination was determined with agar in the Petri (1% Agarose and 10% sucrose) method. The cultivar with the highest pollen viability rate (57.8%) was "SEO". "Harcot" had the least amount of pollen viable with 28.3%. "Harleyne" cultivar had the best germination rate with 69.8%. Also "Harcot" had the lowest pollen germination rate (19.8%). According to the results, there were significant differences in the pollen viability and germination rates.

Acknowledgments
The authors thank to Scientific Research Projects Unit of Erciyes University for funding and supporting the project regarding this paper with the project number of FBA-2023-12388.

(4) MOLECULAR MARKER BASED ESTIMATION OF APRICOT GENOTYPES COLLECTED FROM YEŞİLHİSAR REGION OF KAYSERİ

Aydın UZUN[1*], Kuddusi KURU[1], Hasan PINAR[1]
Erciyes University Faculty of Agriculture, Department of Horticulture, Kayseri-Türkiye
* Corresponding author: uzun38s@yahoo.com

Apricot is one of the most important stone fruits in the world. It can be evaluated as both fresh consumption and drying. Turkey is the first apricot producing country and has a rich genetic diversity. There are many apricot populations in different regions of Turkey. Some of them contain standard cultivars and some of them consist of local varieties or genotypes. Kayseri province has relatively important local apricot populations. In this study, genetic diversity in apricot populations in Yeşilhisar, Kayseri-Turkey was investigated. In the study, 32 apricot genotypes were studied with ISSR and POX markers. In apricot genotypes, 88.1% polymorphism was obtained with ISSR markers and 32.7% with POX markers. A dendrogram was created by combining ISSR and POX markers data. Accordingly, the level of similarity among genotypes varied between 0.73-1.00. Among the apricots, the genotypes 31 and 32 in particular were clearly apart from the others. In addition, genotype 21 was located alone in the dendrogram. The remaining apricots are divided into two main groups. The study revealed that Yeşilhisar region apricots have a significant variation.

Acknowledgments
The authors thank to Scientific Research Projects Unit of Erciyes University for funding and supporting the project regarding this paper with the project number of FYL-2021-11011

(5) TRIVALE, A NEW WINTER WHEAT VARIETY ADAPTED TO THE LUVIC SOIL CONDITIONS

Nicolaie IONESCU [1,*], Oana BADEA [1], Diana POPESCU[1], Mariana NICOLAE[1]
1Agricultural Research and Development Station Pitești
* Corresponding author: nicolaeionescu50@gmail.com

Improving wheat for increased adaptability to luvic sol conditions in the south of the country has made significant progress lately. The sufficiently wide genetic dowry available has shown that even in the conditions of white luvic soil in the south of the territory, varieties with tolerance to aluminum ions can be obtained. The Trivale variety obtained under these conditions proved new plant characteristics, including those required by the new intensification conditions. And in this case, some gains of morphological characters were found. Their study could be useful in the constant progress of wheat improvement. From the data obtained in the two years of experimentation it was found that the length of the straw was 69-76 cm, with the thickness at the base of 3.4-3.5 mm. The length of the spike was on average 8.7-9.0 cm, and its weight was between 2.1 g and 2.4 g. The spikelets in a spike were 18.4-18.8 in number. In the spikelet, the outer glume measured 8.7 mm, the lower palea 9.7-10.0 mm, and the awns measured an average of 5.8-6.4 cm. 41.2-42.7 grains were formed in a spike, with mean weighing of 1.7-1.8 g. The grains were 6.5-7.0 mm long, 3.1-3.2 mm thick, and the mass of one thousand grains was 39-43 g. Positive correlations were generally obtained between the morphological characters. The data obtained demonstrate a progress in improving the morphological characteristics of the Trivale variety, due to the gain of a tolerance to the concentration of aluminum ions into the soil.

(6) THE CONCEPT OF GREEN COMMUNICATION AGAINST ENVIRONMENTAL PROBLEMS IN THE WORLD: X, Y AND Z GENERATIONS' PERSPECTIVES ON GREEN COMMUNICATION

Sedat ŞİMŞEK [1,*], Tugay ARAT [2]
[1]Selcuk University, Campus, Turkey - Konya
[2]Akdeniz University, Campus, Turkey - Antalya
* Corresponding author: ssimsek@selcuk.edu.tr

"Communication Science" which is an interdisciplinary science, is a science that takes place among other social sciences and directs them. The concept of communication, which is one of the most important factors in the communication, information transfer and education process of people with each other, is directly related to the natural environment and the issues related to the protection of this environment. The concept of green communication also emerges in this process. Today, the internet, mobile phone, tablet, social media, etc. all kinds of positive and negative events related to the environment are shared rapidly with many new generation communication tools and communication environments operating in connection with them.

While traditional media tools that mediate people's news, events, entertainment, education and information fulfill their duties; Devices such as television antennas, base stations, idle communication tools, mobile phones, computers, chips, usb sticks, bluetooth headphones, where social media are used extensively, harm human health and pollute the environment. To be able to prevent this, to make communication and green friendly is also in the hands of human beings (Şimşek, 2022: 399). In various studies, while X, Y and Z generations are more willing to buy and use green products that are compatible with the environment and that are consumed to protect the environment, Y and especially the Z generation born after 2000 are not so willing (Akt, Karaman, 2021: 163). However, while the X generation is more willing to buy green products (which do not harm the environment) to protect the environment and therefore the world,

the Z generation is much more active in using communication tools (especially social media) to establish the environment and the world. In this study, the issues that are harmful to the environment and that are also experienced in the field of communication to protect the environment, in other words, "Green Communication", will be discussed. In addition, solutions will be tried to be put forward to protect the environment and the world from physical pollution.

(7) SOLUTIONS FOR THE RENATURATION OF SOME FOREST LANDS WHICH HAVE BEEN USED FOR THE GROWING OF PHEASANTS

Mircea MOLDOVAN[1], Ioan TĂUT[1,3], Vasile ȘIMONCA[1,3], Cristinel CONSTANDACHE[2*], Laurențiu POPOVICI[2], Ciprian TUDOR[2]
[1]National Institute for Research and Development in Forestry (INCDS) "Marin Drăcea" SCE Cluj, Romania
[2]National Institute for Research and Development in Forestry (INCDS) "Marin Drăcea" SCDEP Focșani, Romania
[3]University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania
* Corresponding author: cicon66@yahoo.com

In Romania, great importance has been given to growing pheasants, for the repopulation of hunting funds. This activity is carried out in a semi-intensive or semi-natural system. The area where the farms are located must have the following characteristics: the soil must be permeable, must be raised to prevent water stagnation, must be protected from strong winds, must provide shade especially at noon, must be in the quietest areas possible, and last but not least, be suitable for effective disinfection and rodent control.
Due to the location conditions and the very large number of birds per surface unit that produce large amounts of bird droppings material, over time, it accumulates in the soil, becoming a limiting factor for the installation of future stands.
In the present work, a study was carried out with the objective of establishing the main species that will be used for the afforestation of a land with an area of approx.6 ha, former pheasantry located in Bihor County. Detailed soil analyzes were necessary to substantiate the solutions. Thus, amounts of potassium and phosphorus far above the optimal amount were determined, and the hydro-physical characteristics of the soil were strongly affected, requiring special pedoameliorative works.

(8) EFFECT OF AMINO ACID APPLICATION ON PHYSIOLOGICAL AND BIOCHEMICAL PROPERTIES OF SALT-STRESSED BROCCOLI SEEDLINGS

Melek EKİNCİ[1], Metin TURAN[2], Ümit TORUN[1], Ertan YILDIRIM[1,*]
[1]Atatürk University, Faculty of Agriculture, Department of Horticulture, Erzurum, Turkey
[2] Yeditepe University, Faculty of Economy and Administrative Sciences, Department of Agricultural Trade and Management, Istanbul, Turkey
*Corresponding author e-mail: ertanyil@atauni.edu.tr

The effect of exogenous amino acid on some physiological and biochemical properties of broccoli seedlings under salt stress was investigated. Two products containing amino acids (Ga and Pr) were applied from the soil to the root zone of the plant 3 times with one-week intervals in this study. The solutions prepared with 0 and 80 mM NaCl were applied to the plant as irrigation water. In the study, the effects of salt stress and applications on H_2O_2, MDA, proline sucrose, catalase (CAT), superoxide dismutase (SOD), indole acetic acid (IAA), salicylic acid (SA), gibberellic acid (GA) and abscisic acid (ABA) content of seedlings were investigated. The content of H_2O_2, MDA, proline, sucrose, CAT, SOD and ABA increased, while the content of IAA, GA and SA in the plant decreased with salinity. However, with exogenous amino acid applications, the effect of salt stress on these parameters in the plant was alleviated, thus contributing to the increase in the tolerance of broccoli seedlings to salt stress.

(9) ANTIMICROBIAL STUDY OF NEW PEPTIDES IDENTIFIED IN THE HELIX ASPERSA MUCUS

Karina MARINOVA [1,*], Petar PETROV [1], Lyudmila VELKOVA[1], Pavlina DOLASHKA [1]
[1] Institute of Organic Chemistry with Centre of Phytochemistry at the Bulgarian Academy of Sciences (Acad. G. Bonchev Str., Block 9, 1113 Sofia, Bulgaria)
* Corresponding author: marinovakar@gmail.com

In this study, four test bacterial strains (1 Gram-positives and 3 Gram-negatives) were used to assess the antimicrobial properties of the peptides. The Gram-positive bacteria used was *Bacillus subtilis*. Gram-negative bacteria included *Escherichia coli 3458, Escherichia coli 8432 and Escherichia coli BL21DE3.* All microbial strains were collected from Bulgarian National Bank for industrial microorganisms and cell cultures. For the antibacterial test the agar well-diffusion method (method of agar wells) and the broth microdilution method were performed. Results from the agar-well diffusion method showed that the 10 mg/ml concentration of the different peptide solutions and the combinations of them is showing around 40% growth inhibition of the tested microorganisms. The broth microdilution assay is regarded as being more sensitive relative to the agar diffusion assay for screening antimicrobial natural products. The lowest MICs recorded against the tested microorganisms was 2,5 mg/ml of solutions containing different combinations of the synthesized peptides. According to the results in this study we can conclude that there are single peptide solutions that showed activity. The solutions with different combinations of the peptides are showing good synergetic interaction too.

Acknowledgments
This work was supported by BNSF, project KP-06-OPR03-10/2018.

(10) NOVEL ANTIMICROBIAL PEPTIDES FROM *HELIX ASPERSA* MUCUS AND HYPOTHESIS FOR MECHANISM OF ACTION

Lyudmila VELKOVA[1,*], Aleksandar DOLASHKI[1], Dimitar KAYNAROV[1], Nevena ILIEVA[2], Elena LILKOVA[2], Karina Marinova[1], Petar Petrov[1], Pavlina DOLASHKA[1]

[1]Institute of Organic Chemistry with Centre of Phytochemistry at the Bulgarian Academy of Sciences, Acad. G. Bonchev Str., Block 9, 1113 Sofia, Bulgaria

[2]Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences, Acad. G. Bonchev Str., Block 25A, 1113 Sofia, Bulgaria

* Corresponding author: lyudmila_velkova@abv.bg

The increasing multidrug resistance of microorganisms is one of the current global threats to human health. Natural antimicrobial peptides (AMPs) selectively can kill or inhibit different pathogens unlike conventional antibiotics. The mucus from the garden snails *Helix aspersa* is complex, multi-component mixtures included different biochemical active substances.

Using *de novo* sequencing by MALDI-TOF-MS/MS, we identified the primary structures of several novel antimicrobial peptides with molecular weight below 3 kDa. The most of them contain high levels of glycine, leucine, proline, tryptophan and valine residues, typically for peptides with antimicrobial activity.

The key step to explain the mechanism of antimicrobial activity is the interaction of AMPs with the bacterial cell membrane. Results from *in silico* studies lead to hypothesize the multistage nature of the antibacterial activity of peptides and the formation of mixed peptide clusters as a transport and concentration agent to deliver the active ingredients to the target bacterial membrane. Formation of mono- and tow-component peptides clusters were confirmed by molecular dynamics simulations and fluorescent analyses. The study can be basis for further investigations on mechanism of action of antimicrobial peptides.

Acknowledgments: This work is supported in part by the Bulgarian National Science Fund (BNSF), grant KP-06-OPR03-10/2018.

(11) STRUCTURAL AND CONFORMATIONAL STABILITY OF A NOVEL SIALIDASE ENZYME ISOLATED FROM THE FUNGAL STRAIN *PENICILLIUM GRISEOFULVUM* P29

Pavlina DOLASHKA[1*], Dimitar KAYNAROV[1], Lyudmila VELKOVA[1], Aleksandar DOLASHKI[1], Radoslav ABRASHEV[2], Ekaterina KRUMOVA[2], Maria ANGELOVA[2]

[1] Institute of Organic Chemistry with Centre of Phytochemistry - Bulgarian Academy of Sciences, Acad. G. Bonchev str., bl.9, 1113 Sofia, Bulgaria

[2] The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Academician G. Bonchev 26, 1113, Sofia, Bulgaria

* Corresponding author: pda54@abv.bg

Sialidases (neuraminidases, N-acetylneuraminic acid hydrolases, EC 3.2.1.18) comprise a family of glycohydrolytic enzymes that remove sialic acid residues from various sialo derivatives. They are widespread in biological systems, but there is not information about enzyme from filamentous fungi. The aim of this study was to obtain information on the distribution of sialidase in filamentous fungi from non-clinical isolates, to determine the presence of the sialidase gene and to determine the properties of enzyme. Sialidase was isolated from fungal strain *P. griseofulvum* P29, cultured in a 3L bioreactor at 20°C on medium supplemented with 0.5% whey.

The molecular mass 40 kDa of the enzyme from fungal strain *Penicillium griseofulvum* P29 was determined by electrophoreses, but the exact molecular mass of 39904,75 Da was measured by MALDI-Tof/MS analysis which is in a good correlation 39903,75 kDa with calculated mass by amino acid sequences of enzyme.

Another evidence that the isolated enzyme is a neuraminidase is the high amino acid sequence homology of the purified enzyme with neuraminidases isolated from other sources. The 3D- structure of neuraminidase shows a different arrangement in the structure of the indicated amino acid residues.

The presence of 5 tyrosines and 9 tryptophans allows to follow the stability of the enzyme at different pH of the solution. The analyses by fluorescence spectroscopic method showed pH dependence of the stability of the enzyme.

Acknowledgement
This work was supported by the project KP-06-N21/13, financed by the National Scientific Fund of the Ministry of Education and Science, Bulgaria.

(12) EVALUATION OF THE *IN VITRO* BIOACTIVITY OF *ACONITUM TOXICUM* RCHB. EXTRACTS OBTAINED THROUGH ADVANCED PLANT PROCESSING TECHNIQUES

Anca Nicoleta ŞUŢAN[1], Oana DRĂGHICEANU[1*], Denisa Ştefania VÎLCOCI[2], Georgiana CÎRSTEA[2], Codruţ-Andrei MIHAI[1], Liliana Cristina SOARE[1]

[1] Department of Natural Sciences, University of Pitesti, Targul din Vale 1, 110040 Pitesti, Romania

[2] Regional Center of Research & Development for Materials, Processes and Innovative Products Dedicated to the Automotive Industry (CRC&D-AUTO), University of Pitesti, Doaga Street, No. 11, 110440 Pitesti, Romania

* Corresponding author: oana.draghiceanu@upit.ro

Plant extracts are frequently used in traditional medicine as well as in the pharmaceutical and food industry. In order to obtain the favorable combinations of secondary metabolites, but also for the extraction of a wide range of bioactive compounds, several extraction techniques have been developed, and the extracts are tested for various effects. In this work, we applied modern techniques for the extraction of bioactive compounds from the rhizomes of *Aconitum toxicum* Rchb., using different solvents and evaluated the AgNPs biosynthesis potential of the obtained hydroalcoholic extracts. Rhizome extracts and nanostructured mixtures were evaluated for cytogenotoxic potential by *Allium* test. Phytosynthesis of nanoparticles was demonstrated by the color variation of the samples supplemented with 1mM $AgNO_3$ and *A. toxicum* extracts proved to be optimal for the biosynthesis of silver nanoparticles (AgNPs). Cytogenotoxicity of the samples varied depending on the extraction technique, the solvent, the concentration of the extract, the presence or absence of AgNPs.

Acknowledgments

This activity was carried out with the support obtained through project number PN-III-P4-ID-PCE-2020-0620, within PNCDI III, a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS–UEFISCDI.

(13) *HELLEBORUS* SPECIES IN TRADITIONAL AND FOLK MEDICINE

Anca Nicoleta ŞUŢAN[1], Oana DRĂGHICEANU[1*], Liliana Cristina SOARE[1]
[1] Department of Natural Sciences, University of Pitesti, Targul din Vale 1, 110040 Pitesti, Romania
* Corresponding author: oana.draghiceanu@upit.ro

Due to poverty and lack of access to modern medicine, a large percentage of the world's population living in developing countries depend mainly on plants for primary health care. The use of plants for the treatment of various ailments has an extremely extensive history, and species of the genus *Helleborus* are found among the plants used to treat various ailments. The roots, rhizomes and leaves are still used in traditional medicine to treat various conditions in humans and animals. Rhizome extracts, in particular, have been reported to have properties with a wide spectrum of pharmacological and therapeutic effects, such as cardiotonic, abortifacient, and sedative effects, as well as antioxidant, anti-inflammatory, antitumor and antimicrobial effects. *Helleborus niger* L., *Helleborus odorus* Waldst. & Kit. ex Willd., *Helleborus purpurescens* L., *Helleborus bocconei* Ten. ssp. *intermedius*, *Helleborus foetidus* L., *Helleborus viridis* L. are found among the species mentioned in Romanian and international folk medicine, for their therapeutic effects.

Acknowledgments
This activity was carried out with the support obtained through project number PN-III-P4-ID-PCE-2020-0620, within PNCDI III, a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS– UEFISCDI.

(14) EFFECTS OF ZINC AND RHIZOBACTERIA (*BACILLUS ATROPHAEUS* AND *BACILLUS TAYONENSIS*) APPLICATION ON YIELD AND QUALITY OF SUGAR BEET (*BETA VULGARIS* L.)

Gulnur SAMATLI[1], Aziz ŞATANA[1*]
[1] Erciyes University, Agriculture Faculty, Department of Crop Science, Melikgazi, Kayseri, Turkey
Corresponding author: azizsatana@erciyes.edu.tr

In this study, yield and quality characteristics of different zinc doses and rhizobacteria application in sugar beet were investigated. The trial was set up according to the split randomized blocks trial design with 3 replications and lasted for 2 years. In the research, 4 different doses of zinc (0,1.13g, 2.26g, 3.39g) were applied according to the field capacity. 2/3 of the fertilization was applied as base fertilizer (DAP) with planting, and 1/3 was applied as top fertilizer (ammonium sulfate) after the first hoe. In the study, *Bacillus atrophaeus* and *Bacillus tayonensis* were applied by soil grafting method (750 ml/da). Zinc applications were applied at two different times (in the 4-leaf period from emergence and in July). Root yield, sugar presence, sugar yield, dry matter, ash, brix, purity, amino nitrogen, sodium and potassium ratios were determined in sugar beet.

Acknowledgments
This research was supported by Erciyes University Scientific Research Projects Coordinatior Unit (BAP) with ID number 11815. We thank the BAP unit for their support.

(15) THE EFFECT OF *BACILLUS SUBTILIS*, *BACILLUS HALOTOLERANS* AND *BACILLUS PUMILUS* ISOLATES ON YIELD AND QUALITY IN SUGAR BEET (*BETA VULGARIS* L.)

Aziz ŞATANA[1*]
[1]Erciyes University, Agriculture Faculty, Department of Crop Science, Melikgazi, Kayseri, Turkey
Corresponding author: azizsatana@erciyes.edu.tr

This research was carried out to examine the effect on yield and quality of *Bacillus subtilis*, *Bacillus halotolerans* and *Bacillus pumilus* isolates and sugar beet isolated from Central Anatolian soils in 2021 and 2022. In the experiment, 4 bacterial fertilizers, including 3 different bacteria and 1 mixture, at a density of 1x109 CFU/ml were applied to the soil by spraying before planting sugar beet.
According to the results obtained; With the application of *Bacillus halotolerans* isolate, beet yield was 12256 kg/da, and approximately 30% yield increase was achieved in control plots. Again, with the application of *Bacillus subtilis* isolate from the soil, the digestion rate reached the highest value with 20.50%.

(16) GEOGRAPHIC DISTRIBUTION AND HOST RANGE OF *LIGULA INTESTINALIS* (CESTODA) IN TÜRKİYE

Deniz INNAL[1*]
[1] Burdur Mehmet Akif Ersoy University, Department of Biology, Burdur, Türkiye
* Corresponding author: innald@gmail.com

Türkiye's freshwater habitats are home to a special fish fauna that includes endemic and biogeographically significant species. Native fish species of Türkiye have been reported in aquatic systems in terms of distribution, threats status and biology. However the parasites of native fish species are poorly known. The survey of parasites in threatened fishes is required for the management and conservation of fish populations in natural water bodies. *Ligula intestinalis* (Linnaeus, 1758) is a widespread pseudophyllidean cestode, which is strongly pathogenic in many natural freshwater fish populations throughout Europe. After the first report of *L. intestinalis* in Türkiye several studies have demonstrated that the parasite is widespread in this country and identified as a possible threat to the endemic fish stocks. This study presents the current geographical distribution and host range of *L. intestinalis* in inland waters of Türkiye.

(17) MOLECULAR CHARACTERIZATION OF SOME ELAZIG PEPPER (*CAPSICUM ANNUUM* L.) GENOTYPES

Hasan PINAR, Zeliha DURUK, Aydin UZUN
[1] Department of Horticulture, Faculty of Agriculture, Erciyes University, 38039, Kayseri-Turkey
* Corresponding author: hpinarka@yahoo.com

The pepper plant, which is widely produced and consumed in Turkey and in the world, is facing some threats, In this respect, it is very important to protect genetic resources and try to include them into breeding programs at the same time, One of the local pepper varieties is the standard pepper variety, which has been grown locally in the province of Elazig and surrounding provinces for many years and is consumed fondly by the people of the region, However, when the production areas are examined, it is observed that there are segregation due to open pollination in this variety, In this study, it was aimed to make the molecular characterization of some Elazig native peppers belonging to the Capsicum annuum species. For molecular characterization, 10 ISSR and 12 POX markers were used and total 77 band obtained and 36 of them were polymorphic using ISSR primers. Also, total 64 band obtained using POX markers and 48 of them were polymorphic. According to the data obtained, quite important polymorphism was obtained as a result of molecular characterization in some Elazig peppers. This polymorphism shows that Elazig local pepper can be used in terms of breeding for breeding programs.

Acknowledgments
We would like to thank the Scientific Research Projects Unit of Erciyes University for their support to the project coded FYL-2021-11408, which is the subject of this study.

(18) DETERMINATION OF THE EFFECTS OF DIFFERENT PROTOCOLS ON TISSUE CULTURE MICROPROPRIATION IN EUPHORBIA MILII

Hasan PINAR[1*], Seyma BULBUL[2], Aydin UZUN[1]
[1] Department of Horticulture, Faculty of Agriculture, Erciyes University, 38039, Kayseri-Turkey
[2] Akasya Seedling Ltd, 38039, Izmir-Turkey
* Corresponding author: hpinarka@yahoo.com

In recent years, with the emergence of some important species in the field of ornamental plants, the interest in some species naturally grown in nature has started to increase and the Euphorbia milii species has started to create related demands both in commercial and hobby terms. In order to meet these demands, seedlings produced by appropriate methods are needed. Clonal propagation is very important in Euphorbia milii as in other fruit species. Tissue culture techniques are the leading methods in clonal propagation. Although there are various studies on production by tissue culture technique in Euphorbia milii species, it is known that different protocols used in tissue culture have different micropropagation efficiency. However, when commercial production is started, determining the most effective protocol and increasing the micropropagation efficiency will contribute to the reduction of both time and inputs. Studies on in vitro micropropagation have been carried out in Euphorbia milii plant and successful results have been obtained in each study. However, it is still not known exactly which protocol is more successful in the materials to be studied. From this point of view, in this study, it was aimed to determine the effects of different protocols on the micropropagation efficiency of Euphorbia milii plants. In present study, 3 different plant tissue culture protocol were used and, as obtained results, although plantlets were obtained from 3 protocols, the most successful protocol was the P1 protocol. The obtained findings are of a quality that can contribute to tissue culture production of Euphorbia milii plant and other scientific studies.

Acknowledgments
We would like to thank the Scientific Research Projects Unit of Erciyes University for their support to the project coded FKA-2021-11497, which is the subject of this study.

(19) LIGHT TRIAD PERSONALITY TRAITS AND COPING STRATEGIES IN TEACHERS

Alina Sanda BĂLAN[1*], Maria Claudia IONESCU[1], Andreea STAN[1]
[1] University of Pitesti, Str. Targul din Vale, nr. 1, 110040, Pitesti, Romania
* Corresponding author: alina.vasile@upit.ro

Studies show that work-related stress among teachers is high. Job satisfaction and interactions with students are influenced by teachers' coping skills with stressful situations and differences in response to stressful events can be explained by personality traits. The present study uses the Light Triad model of personality to examine whether prosocial traits such as empathy, compassion and altruism are associated with cognitive-emotional coping strategies in teachers. The prosocial orientation was measured using the Light Triad Scale (Johnson, 2018) and The Cognitive-Emotional Regulation Questionnaire (Garnefski et al., 2007) was used to identify teachers' cognitive-emotional coping strategies, in relation to negative events or situations. The participants in this study included 120 Romanian teachers from different levels of preuniversitary education. The results revealed that all three prosocial personality traits have small to medium negative correlations with catastrophizing; empathy and altruism are associated with the positive reappraisal and empathy positively correlates with accepting negative events and refocusing on planning. Our findings extend the current understanding of the relationship between teachers' prosocial personality traits and the coping strategies they use following negative life events.

(20) ENDOPHYTIC COLONIZATION OF TWO ENTOMOPATHOGENIC FUNGI ON TOMATO PLANT AND THEIR MORTALITY EFFECTS AGAINST THE SOUTH AMERICAN TOMATO PINWORM, *TUTA ABSOLUTA* (MEYRICK) (LEPIDOPTERA: GELECHIIDAE)

Zeynep DİKER[1], Murat MUŞTU[1*]
[1] Erciyes University, Faculty of Agriculture, Department of Plant Protection, Kayseri, Turkey
* Corresponding author: mmustu77@hotmail.com

In this study, the endophytic colonization on tomato plant of the entomopathogenic fungi *Beauveria bassiana* (Balsamo) Vuillemin (Sordariomycetes: Hypocreales) and *Isaria farinosa* (Holmsk.) Fries (Sordariomycetes: Hypocreales) using different inoculation techniques and their mortality effects on South American tomato pinworm, *Tuta absoluta* (Meyrick) (Lepidoptera: Gelechiidae) larvae were determined. Experiments were conducted in a climate-cabinet under conditions at 25 ± 1 ˚C, 16L:8D and 60 ± 2% RH. Four weeks after seed, root and leaf inoculation, there was no statistical difference between the endophytic colonization of the two fungi species in any of inoculation method. For both fungi species, the highest endophytic fungal colonization occurred in the leaf inoculation method, while there is no found difference between seed and root inoculation. While there was no difference between different fungal species in the mortality effects of different inoculation methods on *Tuta absoluta* larvae statistically, the highest larval mortality rate was obtained in the seed treatment of *B. bassiana*. At the end of the study, promising findings were obtained that both entomopathogenic fungi can be used in integrated pest management of *Tuta absoluta*.

Acknowledgments
This research was supported by Erciyes University, Scientific Research Projects Coordination Unit, Kayseri, Turkey, (Project No: FYL-2022-12017)

(21) COMPARATIVE ANALYSIS OF THE PROPERTIES OF A NEW SIALIDASE FROM THE FUNGAL STRAIN *P. GRISEOFULVUM* P29 WITH KNOWN SIALIDASES

Aleksandar DOLASHKI [1*], Pavlina DOLASHKA [1], Dimitar KAYNAROV [1], Lyudmila VELKOVA [1], Radoslav ABRASHEV [2], Ekaterina KRUMOVA [2], Maria ANGELOVA [2]

[1] Institute of Organic Chemistry with Centre of Phytochemistry - Bulgarian Academy of Sciences, Acad. G. Bonchev str., bl.9, 1113 Sofia, Bulgaria

[2] The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Academician G. Bonchev 26, 1113, Sofia, Bulgaria

* Corresponding author: adolashki@yahoo.com

Sialidases (neuraminidases) comprise a family of glycohydrolytic enzymes widely distributed in nature, including viruses, protozoa, bacteria, fungi, vertebrates, and higher animals. Function of enzyme is to remove sialic acid residues from various sialoderivatives. They hydrolyze terminal NorO-acylneuraminic acids, which area2,3-, 2,6-, or 2,8-linked to glycoproteins, glycolipids, polysaccharides, mucopolysaccharides, and oligosaccharides. Based on their amino acid sequences, sialidases have been classified into four carbohydrate-active enzymes families. The alignment of AAS of neuraminidase isolated from P. patulum P29 with the sialidases of other fungal strains (KXG51741.1 Neuraminidase [Penicillium griseofulvum]; XP_002560442.1 Pc16g00170 [Penicillium rubens Wisconsin 54-1255]; CRL20054.1 Neuraminidase [Penicillium camemberti]; KGO67483.1 Neuraminidase [Penicillium italicum]; XP_748867.1 BNR/Asp-box repeat domain protein [Aspergillus fumigatus Af293]; KAI9376722.1 Sialidase [Aspergillus egyptiacus]) shows a high homology.
Despite their sequence similarity (<40% identical), all sialidases share a similar catalytic domain, observed in viral, bacterial and eukaryotic enzymes.

Acknowledgement
This work was supported by the project KP-06-N21/13, financed by the National Scientific Fund of the Ministry of Education and Science, Bulgaria.

(22) NATURAL RADIONUCLIDES IN INDUSTRIAL SOILS IN GALATI (SE ROMANIA): DISTRIBUTION, CONTRIBUTION TO ABSORBED DOSE, RADIOLOGICAL AND CANCER RISK

Antoaneta ENE [1,*], Florin SLOATĂ [1,2], Ana PANTELICĂ [3]
[1]INPOLDE research center, Dunarea de Jos University of Galati, Faculty of Sciences and Environment, Department of Chemistry, Physics and Environment, 111 Domneasca Street, 800201 Galati, Romania
[2] Dunarea de Jos University of Galati, Doctoral School of Mechanical and Industrial Engineering, 47 Domneasca Street, 800008 Galati, Romania
[3] Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering, Magurele, Romania
* Corresponding author: aene@ugal.ro

Naturally occurring radionuclides that are present in soil and parent rocks, along with their decay products, contribute to the terrestrial background radiation and collective dose for the human beings. The research aimed at determining the activity concentrations of natural radionuclides (^{238}U, ^{226}Ra, ^{232}Th, and ^{40}K) in the soils around the iron and steel works of Galati, SE Romania, their correlations and contribution to the absorbed dose rate, annual effective dose, dose to organs and radiological and cancer risk. The low background high resolution gamma-ray spectrometry with a HPGe detector was employed in this work to determine the radionuclides' activity concentrations. Hazardous radiation parameters were estimated and compared to the recommended levels of the United Nations Scientific Commission on Effects of Atomic Radiation (UNSCEAR). The obtained results (concentration ranges, isotope ratios) were compared to the reported values in soils and sediments from other locations in Romania and different countries, including iron and steel industrial areas and sites with high background radiations levels.

Acknowledgments
The authors acknowledge the support of the internal grant awarded by Dunarea de Jos University of Galati, Romania, Contract no. 9187/2023, „Researches on interdisciplinary applications of advanced analytical and control techniques in environmental, health and materials science studies (INTERVENT)".

(23) THE EFFECT OF ALGAE DIETARY INCLUSION ON RUMEN AMMONIA CONCENTRATION, AND VOLATILE FATTY ACIDS PROFILE

Svetlana MALYUGINA [1,2*]
[1]Mendel University in Brno, Department of Animal Nutrition and Forage Production, Zemedelska 1665, 61300 Brno, Czech Republic
[2]Agrovyzkum Rapotin Ltd., Vyzkumniku 267, 78813 Vikyrovice, Czech Republic
* Corresponding author: smalyugina85@gmail.com; qqmalyugi@mendelu.cz

Rumen represents a large fermentation chamber where various microbes such as protozoa, bacteria, and fungi habituate performing their primary function – enzymatic biodegradation of feed ingested by animals. Fermentation in the rumen and microbial community can be manipulated and possibly enhanced by changing the diet. This study aimed to investigate the effect of unicellular green microalga Chlorella Vulgaris supplemented to the standard feed ration of four cannulated cows on rumen fermentation and volatile fatty acids profile. The experiment was conducted for this aim in the accredited stable in Agriresearch Centrum Agrovyzkum Rapotin, Czech Republic, where four cows of mixed beef breeds with implanted permanent cannulas were housed. Cows were fed with the basal diet enriched with the lyophilized alga in 3 different concentrations: 30g/day (3,14g/kg of DM), 90g/day (9,6g/kg of DM), and 170g/day (18,7 g/kg of DM) during three experimental periods respectively. In each testing period, one cow represented the control and three cows were the experimental group. The rumen fluid of each animal was collected two times per week via a rumen cannula with a probe connected to a vacuum pump for further laboratory analyses. Test of rumen fluid included: measurement of pH, physical characteristics, the concentration of nitrogenic compounds and ammonia, and determination of rumen protozoa. The sampling period affected the rumen pH level, but diet treatment did not significantly impact the rumen pH. The pH values in rumen fluid samples were within the

normal range, the same as physical characteristics (color, odor, consistency, and sedimentation time). In conclusion, dietary alga inclusion in all tested concentrations increased the VFA concentration in the rumen.

Acknowledgments
This study was supported by the Ministry of Agriculture of the Czech Republic, institutional support MZE-RO1218

(24) THE ATTACK OF THE BEETLE *SITOPHILUS GRANARIUS* L. ON VARIETIESNEW WHEAT STORED

Cristina GHIORGHE[1,2], Ion MITREA[3]
[1] Doctoral School and Animal Resources Engineering, Faculty of Horticulture, University of Craiova, 13 A.I. Cuza Street, 200585, Craiova, Romania
[2] Agricultural Development Research Station Pitești, Pitesti-Slatina Road, km 5, Albota, Argeș
[3] Faculty of Horticulture, University of Craiova, 13 A.I. Cuza Street, 200585, Craiova, Romania
* Corresponding author: ghiorghecristina14@yahoo.com

Stored cereal products suffer year after year from the attack of various insects, mainly due to the short period in which the grains are used. Instead, by delaying grain utilization, and especially in winter wheat, storage pests follow their biological cycle. This is also the case with the *Sitophilus* weevil whose attack causes a high level of damage every year. In the present experiment, two series of batches of three varieties of winter wheat were analyzed. From the data obtained, it was found the existence of significant differences depending on the analyzed factor, namely, distinctly significant in the case of the group of varieties formed by *Trivale, Ursita* and *Linia A4-10*, significant in the variety *FLD Caro, FDL Concurent, Șimnic 1619*. At the same time, a significant connection was found between the first group of varieties with the four lots analyzed and insignificant in the case of the second group of winter wheat varieties. The obtained results demonstrate a relative preference of the pest depending on the newly created wheat variety or line. Given that the insect produced degrees of damage even over 50%, it is necessary to take some control-combat methods.

(25) MACROELEMENT REMOVAL IN SWEET AND SOUR CHERRIES BY SPRING AND SUMMER PRUNING

Daina FELDMANE [1,*], Valentīna POLE [1], Ieva ERDBERGA [2]
[1] Institute of Horticulture, Graudu str. 1, Cerini, Krimunu p., Dobele n. Latvia, LV-3701
[2] Latvia University of Life Sciences and Technologies, Lielā str. 2, Jelgava, Latvia, LV-3001
* Corresponding author: daina.feldmane@llu.lv

The research was aimed to determine the effect of pruning time on several macroelement (N, P, K) removal by cut branches in sweet and sour cherries. Spring pruning was done before the bud break, summer pruning - after the harvest. The cut branches were sorted into fractions - leaves, annual shoots, biannual shoots and older branches; weighed and analysed. The removal of macronutrients per sweet cherry tree by spring pruning was 11 g N, 4 g P_2O_5 and 36 g K_2O and by summer pruning – 12 g N, 3 g P_2O_5 and 33 g K_2O. In the spring pruning, the majority of sweet cherry macronutrient removal was made up by oldest branches because of their mass proportion in total biomass. In summer pruning, the majority of the N, P, K was removed by the leaf. Sour cherries had significantly higher content of N and K in the leaf and higher P content in older branches than sweet cherries. The removal of macronutrients per sour cherry tree by spring pruning was 5 g N, 2 g P_2O_5 and 18 g K_2O, and by summer pruning – 14 g N, 3 g P_2O_5 and 39 g K_2O. In sour cherry spring pruning, the proportions of removed macroelements did not differ significantly for the branches of various age. In the summer pruning, the majority of N and K was removed by leaf, but the majority of P – by leaf and oldest branches. For sweet cherries, the removal of N, P, K by cut branches was similar in spring and summer pruning. For sour cherries, the pruning in the spring can considerably decrease the removal of N, P, K by cut branches compared to the pruning in summer.

Acknowledgments
The research was funded by Latvian Ministry of Agriculture, Rural Support Service project "The necessity of nutrients for cherries and improvement of their availability" LAD 15 Nr. 18-00-A01620-000016.

(26) RELATIONSHIP BETWEEN MENSTRUAL PAIN AND QUALITY OF LIFE

Diana POPOVA-DOBREVA [1*], Tatyana TOMOVA [1], Stela IVANOVA [1], Tsvetanka DAKOVA-VELICHKOVA [1]
[1] National Sports Academy, Sofia, Bulgaria
* Corresponding author: dobreva_da@yahoo.com

Menstrual pain is a common socially significant problem that leads to discomfort and absence from work, with a negative impact on health status, improvement of life, and personal and public finances. The review of the scientific literature aimed at the concepts in world research related to menstrual pain and its impact on a better life.
The aim of the current study was to investigate the relationship between menstrual pain and quality of life. The study contingent is physically active women of reproductive age.
125 physically active female students at the Vasil Levski National Sports Academy, Sofia, Bulgaria, were studied. The contingent was characterized by age, duration of bleeding in days, amount of menstruation, degree of menstrual pain, and self-assessment of the effect of menstrual pain on workability. We use the Brunnsviken Brief Quality of Life scale (BBQ) in the study.
A study conducted by us demonstrated a high prevalence of dysmenorrhea among young women. We consider it necessary to compile and approve a PROGRAM of physical exercises for personal and professional use by women with menstrual pain and specialists. Any effort in this direction will have an indirect benefit for personal and public finances, by preserving the working capacity of the women concerned.

(27) BEHAVIOR OF CORN HYBRIDS CREATED AT S.C.D.A TURDA, UNDER THE CONDITIONS OF S.C.D.A. PITEȘTI-ALBOTA IN THE YEAR 2021

Mariana Cristina NICOLAE [1*], Diana Maria POPESCU [1], Oana Daniela BADEA [1], Georgeta TRAȘCĂ [1], Nicolaie IONESCU [1]
[1]Agricultural Research and Development Station Piteşti, Piteşti-Slatina road km. 5, 117030, Piteşti, România
* Corresponding author: nico.criss@gmail.com

The promotion of new creations in the current stage ensures the confidence in obtaining both the larger productions and their quality. Lately, we are looking for new creations to respond with a greater adaptability to different environmental conditions. This is also the case with newly created hybrids at Turda resort, which were also tested in the conditions in the south of the country. In recent years, there has been a positive manifestation of the adaptability of these hybrids.
Of the 7 experienced hybrids, the Turda 335, Turda 165 and Turda 332 hybrids with average yields of over 6500 kg / ha stood out. The Turda 335 hybrid also had the highest absolute weight (MMB = 308). At the same time, the quality of the grains registered significant parameters. Thus, the Turda Star hybrid had the highest protein content (8.9%), the Turda 2020 hybrid had the highest oil content (4.5%) while most hybrids had the starch content between 72 % and 74%. In general, the hybrids demonstrated by the studied characters increased adaptability during the previous year.

(28) STUDY ON THE PROCESS OF GASIFICATION OF BLACK LIQUOR

Florian MARIN [1,2*], Anca Maria ZAHARIOIU [1], Felicia BUCURA [1], Oana BOTORAN [1], Marius CONSTANTINESCU [1], Simona OANCEA [2]
[1]National Research and Development Institute for Cryogenic and Isotopic Technologies – ICSI Rm. Valcea, 4 Uzinei Str., 240050 Ramnicu Valcea, Romania.
[2]Faculty of Agricultural Sciences, Food Industry and Environmental Protection, Lucian Blaga" University of Sibiu, 7-9 I. Ratiu Str., 550012 Sibiu, Romania.
* Corresponding author: marin_florian112@yahoo.com

This review paper investigates a new lignocellulosic biorefinery concept integrated with the Kraft industry. Black liquor (BL) gasification technology, in the presence or absence of pyrolysis liquids, helps to increase the production capacity of the resulting gas. To demonstrate that gasification is a sustainable and more valuable processing route than burning it in recovery boilers, additional processes of syngas cleaning and high sulfur recovery are required in order to achieve a significant reduction in operating costs to improve economic feasibility through BL gasification. BL gasification is performed using two types of gasifiers, one with a fluidized bed, which requires a higher air velocity to increase the yield of valuable products aiding to increase the calorific value of the produced gas compared to fixed bed gasifiers. Fixed-bed gasifiers produce gas with a high tar content because the heat and mass transfer between the gasifier and the biomass is low and non-uniform. BL gasification offers great potential for increased energy recovery with a reduced amount of emissions compared to that of conventional BL burning in recovery boilers.

Acknowledgments
This research was funded by Romanian National Authority for Scientific Research and Innovation, grant number 20N/2023, PN 23150402 (Capitalizing on laboratory experiments in the development of biofuel production technologies from agro-industrial waste)

(29) PRELIMINARY DATA CONCERNING ALIEN PLANT SPECIES IN AGRICULTURAL CROPS FROM DÂMBOVIȚA COUNTY (ROMANIA)

Monica Angela NEBLEA [1,*], Mădălina Cristina MARIAN [2]
[1]University of Pitesti, Faculty of Sciences, Physical Education and Informatics, Department of Natural Sciences
[2]University of Pitesti, Faculty of Sciences, Physical Education and Informatics, Department of Environmental Engineering and Applied Engineering Sciences
* Corresponding author: monica_neb@yahoo.com

At the worldwide, the alien plant species represent a real threat to biodiversity and not only it. These species have a negative impact on agriculture, natural habitats, touristic activities, transport industry and human health. Agriculture is one of the most affected economic sector by the alien species, causing the productivity decrease and high economic costs for their prevention, eradication and control.
This paper presents a briefly review regarding the alien plant species from croplands in Dâmbovița County. The investigation in this territory revealed the presence of 23 allogenic and potentially allogenic plant species that vegetate in different types of agroecosystems, most of them have been recorded in the maize crops. Due to their invasive character, *Ambrosia artemisiifolia*, *Sorghum halepense* and *Xanthium orientale* subsp. *italicum*, with high population densities in some areas, are required specific measures for their control.

Acknowledgments
This study was supported by the project POIM/178/4/1/120008 - Adequate management of invasive species in Romania, in accordance with EU Regulation 1143/2014 on the prevention and management of the introduction and spread of invasive alien species.

(30) THE EFFECT OF NP DOSES WITH NEW CaCO3 AGROFUNDS ON THE FORMATION OF SOYBEAN PRODUCTION

Diana Maria POPESCU [1,*], Oana Daniela BADEA [1], Nicolae IONESCU[1], Cristina Mariana NICOLAE[1]
[1]Agricultural Research and Development Station Pitești, Pitești – Slatina road km. 5, 117030, Pitești, România
* Corresponding author: deea_zuzu@yahoo.com

For the acid soils in the south of the country, it is more than necessary to apply calcareous amendments. Results in this sense were obtained over the years at the main crop plants in the resort area. Considering the increasing importance of the soybean crop, it was considered necessary to resume these types of research, as new products based on limestone and dolomite appeared. Significant results were obtained by forming the total biomass of the plant as well as its components. In the case of the Cristina TD (00) variety, the interaction between several $CaCO_3$ formulations and NP fertilizers contributed as follows: plant biomass 6.46 t/ha (100%), pod biomass 4.16 t/ha (63%), and grains were 2.17 (33%). Of the two analyzed factors, NP fertilizer had the most important contribution to this variety, followed by the influence of the four $CaCO_3$ formulations. The interaction between the two factors was always negative demonstrating that there was some competition between the cations. The obtained correlations were in all cases positive, but of different intensities. Through the obtained results, it is recommended that new formulations of $CaCO_3$ be permanently used in the soybean cultivation technology on acid soils.

(31) THE INCIDENCE OF ADENOVIRUS AND ROTAVIRUS IN PEDIATRIC PATIENTS WITH GASTROENTERITIS

Ionica DELIU [1,*], Sînziana Cosmina GEORGESCU [2]
[1] University of Pitesti, Faculty of Sciences, Physical Education and Informatics, Târgul din Vale Street, no 1, Pitești, Romania,
[2]Municipal Hospital Curtea de Arges, Cuza Voda Street, no 6-8, Curtea de Arges, Romania
* Corresponding author: ionica.deliu@upit.ro

Symptomatic or asymptomatic pediatric diarrhea is a worldwide public health problem, one of the important causes of morbidity and mortality in children 5 years and below. The main causes of viral acute gastroenteritis in the childhood are adenoviruses, rotaviruses, astroviruses and caliciviruses, especially between six months and two years of age. Other viruses could be implicated: coronaviruses, picornaviruses.
Early identification of pathogens and appropriate treatment of different cases could decrease the number of hospitalizations in children and prevent the disease complications.
The aim of this paper was to establish the incidence of gastroenteritis with adenovirus and rotavirus in pediatric patients in Curtea de Arges (Arges) in 18 months (between January 1st, 2021 and June 1st, 2022).
There were differences between number of infections with rotavirus or adenovirus, depend of children age and patients gender (the rotavirus infections were more frequent than those determined by adenoviruses, in male patients, between six and 18 months age), and the co-infections were occurred, too (10.75% from all cases). Rapid antigen testing for viral gastroenteritis (rotavirus and adenovirus infections) decreases antibiotic usage in children with diarrheic disease and the adequate treatment can be given to patients.

(32) EVALUATION OF *ASPLENIUM SCOLOPENDRIUM* EXTRACTS ON *PARAMECIUM CAUDATUM* POPULATIONS

Daniela BĂRBUCEANU[1], Nicoleta Anca ŞUŢAN[1], Ionica DELIU[1], Liliana Cristina SOARE[1*]
University of Piteşti, Faculty of Sciences, Physical Education and Informatics, 1 Târgu din Vale St., 110040, Piteşti, Romania
* Corresponding author: cristina.soare@upit.ro

Throughout time, ferns have played an important role in human life, being used in traditional medicine, as ornamental plants, food, or in cosmetics. *Asplenium scolopendrium*, one of the 700 species of the genus *Asplenium*, has recently been the subject of research in evaluating its medicinal properties, due to secondary metabolites isolated from its vegetative organs. In the present study, extracts from aerial organs of the hart's-tongue fern, in concentration of 1%, 2%, 4% and 10%, were evaluated on *Paramecium caudatum*, as a test organism. The culture medium for paramecia consisted of Chalkley's medium supplemented with an organic food source and bacterized with *Klebsiella aerogenes*. Our data highlight the stimulatory effect on paramecia populations in culture media treated with extracts in concentration of 1-4%, while the extracts in concentration of 10% were toxic to paramecia. In the samples with concentration of 4%, densities of up to 2677 paramecia/ml were recorded, compared to 416 paramecia/ml in the control group. Further research is required to investigate the cytotoxicity and, respectively, the therapeutic potential of *A. scolopendrium* extracts.

Acknowledgments
This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS/CCCDI—UEFISCDI, project BIOHORTINOV, project number PN-III-P1-1.2-PCCDI-2017-0332, contract 6PCCDI/2018, within PNCDI III. N.A.Ş., I.D., L.C.S. gratefully acknowledge the support obtained through project number PN-III-P4-ID-PCE-2020-0620, within PNCDI III, a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS– UEFISCDI.

Online Session

(1) FRUIT AGRO-DIVERSITY IN THE OASIS SYSTEM OF THE NAÂMA REGION (WESTERN ALGERIA)

Abdelkrim BENARADJ [1,*], Hafidha BOUCHERIT[1], Djamel ANTEUR[2], Ramdane BENNIOU[3]
[1]Laboratory of Sustainable Management of Natural Resources in Arid and Semi-Arid Areas, Salhi Ahmed University Center of Naama, Algeria
[2] Research Laboratory of Water Resources and Environment, Tahar Moulay University of Saida, Algeria
[3] Mohamed Boudiaf University of M'sila, Algeria
* Corresponding author: kbenaradj@yahoo.fr

The oases of the Saharan Atlas of Naâma (Western Algeria) are characterized by an intensive oasis-type system which for several centuries has consisted of an association of three levels of cultivation (palm, fruit tree growing, market gardening, cereals, fodder). The inventory of biological diversity is an essential element for the promotion of products and during the development of the guide for the good management of oasis biodiversity. In the oasis system, fruit growing is practiced on small areas as an intensive system on a very small scale with a few subjects of different species intended solely for family consumption. The fruit orchard is made up of a fairly large diversity, varies in species and density depending on the area, which results as much from pedo-climatic situations, namely the almond tree (Prunus dulcis), the lemon tree (Citrus limon), the vine (Vitis vinifera), the fig tree (Ficus carica), the pomegranate tree (Punica granatum), the apricot tree (Prunus armeniaca) and the olive tree (Olea europaea). The majority of the trees are hardy, adapted to the pedoclimatic conditions of the region. These fruit trees are scattered between palm trees with a low density, at the rate of four trees per hectare. The analysis of the fruit agro-diversity better adapted to the

climatic and ecological conditions constitutes a stage in the realization of the management and development plan of this oasis production system for the stability of the local population and to preserve the balance ecological.

Acknowledgments
My sincere thanks to all who contributed to the realization of this work and particularly the farmers who devoted their time to answer my questions.

(2) ENDO-ß-1,4-GLUCANASE ENZYME ACTIVITIES OF SOME *Trichoderma* spp. AGAINST *Rhizoctonia solani* Kühn.

Ceren ELIBOL ILERI [1,*], Coskun GUCLU [1]
[1]Eskisehir Osmangazi University, Department of Agricultural Biotechnology, Eskisehir, Turkey
* Corresponding author: celibol@ogu.edu.tr

Some enzymes are secreted by biocontrol agents, which are increasingly preferred in agricultural control, and suppress the pathogen of diseases and decrease its growth and effects. *Rhizoctonia solani* Kühn., one of these pathogens, causes many losses in plants by causing many diseases such as root cancer, root rot and collapsing. One of the microorganisms that damage the cell walls of such phytopathogens and is therefore preferred as a biocontrol agent is *Trichoderma* spp. In this study, the reaction of *Trichoderma* spp. against *R. solani* and changes in the synthesis of endo-ß-1,4-glucanase enzyme were determined. Eleven different *Trichoderma* spp. and *R. solani* Kühn. isolates were used as materials. The enzyme activity results indicated that the cellulase enzyme activity of the *R. solani* samples increased significantly compared to the control group. TVD3 showed the highest enzyme activity while TH4 was the lowest. The most significant difference from the control group was in TVD3 isolate. These results suggested that *Trichoderma* spp. showed a biochemical response for defending the plant against *R. solani*. The results also support the effectiveness of *Trichoderma* spp. as a biological control agent and potential for the development of new eco-friendly commercial products.

Acknowledgments
This study was supported by the Scientific Research Projects Fund of Eskisehir Osmangazi University by the project number 2018-2219. Also this paper was generated from Master Thesis of Ceren Elibol Ileri.

(3) INVESTIGATION ON THE CONTENT OF PHENOLIC COMPOUNDS AND ANTIOXIDANT ACTIVITY OF INSTANT COFFEES FROM COFFEA ARABICA

Maria Denisa COCÎRLEA [1, *], Roxana STANCIU [2], Simona OANCEA [1]
[1] "Lucian Blaga" University of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, Sibiu, Romania
[2] "Lucian Blaga" University of Sibiu, Faculty of Sciences, Sibiu, Romania
* Corresponding author: simona.oancea@ulbsibiu.ro

Coffee is one of the most popular and consumed beverage worldwide both for the organoleptic characteristics and for the bioactive compounds' content. Previous studies have shown that despite some risks it brings to health, it is useful in preventing cardiovascular diseases, liver diseases and hyperglycemia, and adding creams based on milk proteins helps to preserve its antioxidant activity after digestion.
The content of total phenolics, flavonoids, tannins and the antioxidant activity were assessed in ten commercially soluble coffee samples. The results showed that the total phenolics content ranged from 1783.45 to 2061.30 mg gallic acid 100-1 g, the total flavonoids content ranged from 7637.55 to 13373.67 mg quercitin 100-1 g and condensed tannins level ranged from 1701.21 to 2176.57 mg catechin 100-1 g. The total antioxidant activity varied from 5513.84 to 7905.11 mg ascorbic acid 100-1 g. The differences found among the investigated samples containing 100% Coffea arabica might be due to the different bean processing. Despite these variations, instant coffees represent an additional source of bioactive compounds with antioxidant properties.

(4) RHUS TYPHINA – FROM ENVIRONMENTAL THREAT TO INDUSTRY DEVELOPMENT OPPORTUNITY

Maria Denisa COCÎRLEA [1,*], Simona OANCEA [1]
[1] "Lucian Blaga" University of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, Sibiu, Romania
* Corresponding author: simona.oancea@ulbsibiu.ro

Rhus typhina L. represents a valuable species in terms of its medicinal properties and its wide variety of uses, which deserves more attention in the scientific world. Its fruits contain important amounts of anthocyanins, vitamins, minerals and essential amino acids, while gallic acid and several hydrolyzed tannins can be obtained from the leaves. Although staghorn sumac has a milky sap that can produce dermatitis and its pollen causes severe allergies, the species has been shown to be useful in treating stomach aches, conjunctivitis and improving the condition of people with diabetes. In the last ten years studies seem to have focused on the ecological impact of this plant and its resistance to different environmental characteristics and less on its bioactivity and chemical composition. As any other invasive species, *R. typhina* modifies soil properties and the structure of local plant communities, but is sensitive to light and ozone pollution. In terms of its utility, this species of sumac finds its place in the field of gastronomy, in the production of fuels, cosmetics, pesticides, but also in paper manufacturing.

(5) EFFECT OF DIFFERENT TREATMENTS ON SEED DORMANCY AND GERMINATION IN *GLORIOSA SUPERBA* L.

Deepti Prabha[1]*, Smita Nath[1], Prince Ajay[1], Yogesh Kumar Negi[2]
[1]Dept. of Seed Science & Technology, School of Agriculture and Allied Sciences, HNB Garhwal University, Srinagar, Uttarakhand, India
[2]Dept of Basic Sciences, College of Forestry, (VCSG, UUHF), Ranichauri, Tehri Garhwal, Uttarakhand, India
* Corresponding author: deepti_prabha@rediffmail.com

Gloriosa superba is an important medicinal plant. It is known for the alkaloids, colchicines, gloriosine and colchicoside. However, it is listed as an endangered plant species in the Red Data Book of the International Union for Conservation of Nature. Gloriosa seeds have morphophysiological seed dormancy. This study was therefore designed to improve seed germination in *Gloriosa superba*. Five different temperatures (50ºC, 60ºC, 70ºC, 80ºC and 90ºC) were used for pre-treatments. Soaking of seeds in warm water (50ºC) for one hr was most effective in releasing seed dormancy. Pre- soaking of seeds in warm water (50ºC) followed by seed priming with GA3 (500 ppm) or *Bacillus subtilis* (Bs-58) was found effective to enhance seed germination (298.25% and 216.59%) and seedling growth (559% and 752%) over control. Seed viability test with 2% tetrazolium solution shows the presence of inhibitory chemicals in the Gloriosa seeds, which reduces the activity of dehydrogenase enzyme. Catalase activity was also enhanced in seeds. Maximum catalase activity was recorded in treatment T4 (29.17 umol/ml/min) followed by T6 (19.77 umol/ml/min) and T5 (12.67 umol/ml/min). Minimum catalase activity was recorded in control (1.64 umol/ml/min). The results indicated that the pre- soaking of seeds in warm water followed by seed priming with GA3 (500 ppm) or *Bacillus subtilis* (Bs-58) was found effective in improving seed germination in *Gloriosa superba*.

(6) CONSEQUENCES OF THE ADMINISTRATIVE FRAGMENTATION OF THE ROMANIAN TERRITORY ON THE PROTECTED AREAS MANAGEMENT

Gabriel-Ovidiu VÂNĂU [1,*], Mihăiță-Iulian NICULAE [1], Iulia-Viorica MIU [1], Cristiana-Maria PIOARCĂ-CIOCĂNEA [1], Lavinia-Corina PÎNDARU [1]
[1] University of Bucharest, Department of Regional Geography and Environment, Centre for Environmental Research and Impact Studies
* Corresponding author: gabriel.vanau@geo.unibuc.ro

The administrative fragmentation of the Romanian territory has had significant consequences on the management of protected areas. Romania's administrative structure consists of counties, municipalities, cities and communes, each with their own decision-making powers and responsibilities. There are 3228 administrative units, distributed over a surface of 238.397 sqm, according to INS, and around 1574 protected areas, according to ANANP. This fragmentation has resulted in a lack of coordination and integration of protected areas management policies, leading to inefficiencies in resource allocation, monitoring, and enforcement. Some regions have better management practices and more significant investments in resources, while others have inadequate funding and low-quality management. Another issue is the conflicting policies and regulations across different administrative units, resulting in ambiguous legal frameworks and inconsistent management practices. These inconsistencies have led to difficulties in implementing effective protection measures and have undermined the integrity and effectiveness of protected areas management. Furthermore, the lack of coordination and integration of policies and practices has resulted in inadequate monitoring and enforcement of protected areas, leading to increased pressure from human activities, such as poaching, logging, and urbanization. Our study shows the administrative fragmentation of the Romanian territory has significant consequences on the management of protected areas, leading to inconsistencies, inefficiencies, and inadequate protection. Addressing

these challenges requires better coordination and integration of policies and practices across administrative units, improved resource allocation, and capacity building. Administrative territorial reorganization might determine ample impacts over the society and the environment, including the protected areas.

Acknowledgments

This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS - UEFISCDI, project number PN-III-P1-1.1-TE-2021-1067, within PNCDI III.

(7) CHARACTERIZATION OF AGRICULTURAL PRODUCTION IN THE OASES OF NAÂMA (ALGERIA)

Hafidha BOUCHERIT[1,*], Abdelkrim BENARADJ [1], Khawla LIMAM[1], Fatima KHALDI[1]
[1]Laboratory of Sustainable Management of Natural Resources in Arid and Semi-Arid Areas, Salhi Ahmed University Center of Naama, Algeria
* Corresponding author: h.boucherit@yahoo.fr

The oasis agrosystem in the Naâma region is characterized by a diversity that adapts to severe climatic and edaphic conditions.This work aims to characterize traditional practices at the level of four oases through a survey of 39 farmers.The results obtained show that this agrosystem is still conducted in a traditional manner from the choice of seeds to harvesting and conservation. Direct observations on the sites show a diversity of cropping systems in small farms (74%) of less than 3 ha, from sandy to sandy-loamy texture, irrigated by foggaras, boreholes and small rivers by traditional diversion as well as the installation of basins and terraces in order to intercept the maximum of water. The oasis woman also plays a very important role and participates in the income-generating activities of the farms.

(8) DETERMINING THE POSSIBLE PERSPECTIVE OF USING CATTLE BONE ASH AS OBTAINABLE RAW MATERIAL FOR BIOACTIVE GLASS

Marine SHAVLAKADZE [1*], Teimuraz CHEISHVILI [2], Ilona SAKVARELIDZE [1], Nino ABAISHVILI [1], Dodo MAGRADZE [1], Rusudan DEVNOZASHVILI [1]
[1]Tbilisi Humanitarian Teaching University, Georgia
[2]Georgian Technical University, Georgia
* Corresponding author: marishavlakadze@gmail.com

Bioactive glass is known as one of the effective substitutes for bone tissue, especially in solving issues like regeneration of damaged maxillofacial tissue [1].

According to the compatibility with the living organism, currently used regeneration materials are divided into three large groups. The third group that is distinguished by its special bioactivity includes bioceramics, which include naturally amorphous materials - biomins and derived from them biomineral crystal materials, that are very similar to bioceramics [2].

Today, dozens of bioglass materials of various compositions are known, the main part of which are obtained by adding 4-9% P_2O_5 to the base compositions in the $Na_2O{\cdot}CaO{\cdot}SiO_2$ system. The average content of P_2O_5 is recorded in "classical" L. In the 45S5 glass proposed by Hench (%): 45 SiO_2; 24.5 CaO; 24.5 Na_2O; 6.0 P_2O_5 [3]. In order to obtain these and other composition biomaterials (glass, piroceram) under the conditions of high-temperature synthesis, easily limable phosphoric acid or phosphoric oxide/anhydride is mainly used as a raw material for the composition of P_2O_5 glass.

The research work was planned and carried out in order to expand the raw material base for obtaining bioactive glass materials. Also, the research was based on the perspective of the expected increase in bioactivity. In particular, glass of composition 45S5 was chosen as the base composition, in order to meet the amount of P_2O_5 included in its composition, cattle bone ash was used as raw material. Its

composition contains approximately 40% P_2O_5 and 53% CaO, which are presented in the form of bioactive calcium phosphates. Also, quartz sand, chalk and calcined soda were taken as the components of the glass case.

12 units of smelter charge glass jars of different composition were prepared, in which there are (wt.%/100 wt.% glass): cattle bone ash 12.2-22.4; quartz sand 45.5-60.6; Soda calcined 26.3-43.8 and chalk 10.4-32.2.

Glass synthesis was carried out at 1350±500C, and the ability of the prepared smelter charge glasses to form homogeneous melts was evaluated. Three glasses of different composition were selected, and they were determined having the tendency to crystallization and the prospect of transition to the mineral crystal material. Their characteristic properties were also determined.

Based on the research carried out, it was established that by using cattle bone ash as a new raw material base, it is possible to:

- Obtaining crystal glasses, by heat treatment of the obtained materials in the interval of 700-900^{0}C;
- Amorphous and crystallized glasses are obtained, which are classified as:
  - Compressive strength (MPa) 390-510
  - Chemical stability in physiological 1.1-1.6 solution (37±1^{0}C; 6 hours) weight loss, %
  - Density (kg/m^3) 2660-2740

Taking into account the values of the technological parameters and characteristic properties of the glass obtained on the raw material base, it is concluded that the use of cattle bone as a raw material containing P_2O_5 is promising for obtaining bioactive glass materials.

References:

1. Williams D.F. The Williams Dictionary of Biomaterials. Liverpool, 1999, p. 368
2. Ray R., Degge I., Gloyd P., Mooney G. Bone regeneration// J. Bone joint, surg., 1992. Vol. 34, #3. P. 638-647
3. Hench L. Bioceramics. J. amer. Certam. Soc. 1998. Vol.81, #7.p.1705-1728

(9) EFFECT OF MATURITY STAGES ON NUTRITIVE VALUE PARAMETERS of *Plantago lanceolata* HAY

Mahmut KAPLAN[1*], Beyza CIFTCI[1]
[1]Department of Field Crops, Faculty of Agriculture, University of Erciyes, Kayseri, Turkey
*Corresponding author: mahmutkaplan5@hotmail.com

The aim of the current experiment was to determine the effect of maturity stage on the feed quality parameter and minerals on *Plantago lanceolata* hay. *P. lanceolata* plants harvested at three different maturity stages (pre-flowering, flowering and seeding maturity). The maturity stages had a significant effect on the feed quality parameters and mineral content studied in the current study ($P \leq 0.01$).

Crude protein, crude oil, crude ash, condense tannin decreased while crude fiber, NDF and ADF contents increased with maturity stage maturity. The crude protein content of *P. lanceolata* plants ranged from 8.32 to 18.03%, crude oil content ranged from 1.65 to 2.88%, crude ash content from 4.24 to 9.15%, condense tannin 1.47 to 1.68%, NDF content ranged from 25.73 to 45.16% and ADF content ranged from 20.76 to 36.72%. The highest P (4165.24 ppm), S (4179.02 ppm) and Cu (11.47 ppm) content obtain from pre-flowering stages, the highest K (19322.74 ppm), Mg (2636.36 ppm), Na (1008.12 ppm), Zn (74.34 ppm), B (15.65 ppm) and Mn (57.58 ppm) obtain from flowering stages and the highest Ca (26618.23 ppm) and Fe (334,94 ppm) obtain from seeding stage.

As a result, the nutritive value of *P. lanceolata* plants decreased with increasing maturity stage. Therefore, the *P. lanceolata* plant can be grazed or harvested pre-flowering and flowering stages due nutritive value and mineral content.

(10) FEED VALUE SOME BREAD WHEAT BRAN

Mahmut KAPLAN[1*], Rukiye Kara[2], Beyza CIFTCI[1]
[1]Department of Field Crops, Faculty of Agriculture, University of Erciyes, Kayseri, Turkey
[2]East Mediterranean Transitional Zone Agricultural Research of Institute, Kahramanmaras, Turkey
*Corresponding author: mahmutkaplan5@hotmail.com

It is used in the production of “yarma”, “dovme” soups, tarhana, keskek and ashura dessert, which are obtained by peeling the bolls of white wheat grains after annealing with water. In the proses of obtaining the beating, the embryo and bran part are separated from the grain after grinding. The remainder is a very valuable animal feed. The aim of this study is to determine the feed characteristics of bran from 28 different genotypes. Genotypes had a significant effect on feed value degree ($P \leq 0.01$).
Results revealed that crude protein content varied between 9.08% - 16.71%, crude ash content between 2.76% - 3.74%, neutral detergent fiber (NDF) content between 41.07 - 53.30%, acid detergent fiber (ADF) content 7.11% - 13.01. GT – Bi plot technique, prominent wheat genotypes could be used in selection studies. The wheat bran can constitute a quality feed source for livestock. Further breeding works on wheat cultivars may provide significant contributions to livestock production activities.

(11) CLASSIFIED NATURAL MEDICINAL PLANTS OF CANAKKALE IN THE TROYA REGION AND THEIR USAGE AREAS

Tulay TUTENOCAKLI[1]*
[1] Canakkale Onsekiz Mart University, Lapseki Vocational School, Canakkale, Turkiye
*Corresponding author: t_tutenocakli@hotmail.com

In this study, plants with medicinal properties were determined from the plants, which are included in the Flora of Turkey and The East Aegean Islands books, grown in Canakkale, located in the Troy region. The purposes of use of the plants used for treatment in Canakkale center and districts, the active substances they contain and their usage patterns are listed. As a result, 83 plant taxa with medicinal properties that naturally spread in Canakkale were identified. It contains 34 taxa essential oil, 23 taxa tannins, 19 taxa fixed oil, 13 taxa glycosides, 7 taxa alkaloids, 7 taxa organic acids from plants used for therapeutic purposes. Medicinal plants found in Canakkale are diaphoretic, diuretic, gas-reducing, potent, antidiabetic, antipyretic, wound healing, pain reliever, bile enhancer, stone reducer, etc. are used for such purposes. It is use the taxa, 47 are used as infusions, 13 as decoctions, 12 as powders, 2 as pills, 6 as ointments and 5 as mouthwash.

(12) PLANTS CONSUMED AS FOOD IN ETHNOBOTANICAL PERSPECTIVE: THE CASE STUDY OF YENICE-CANAKKALE-TURKEY

Tulay TUTENOCAKLI[1]*
[1] Canakkale Onsekiz Mart University, Lapseki Vocational School, Canakkale, Turkiye
*Corresponding author: t_tutenocakli@hotmail.com

In this study, the plants consumed as human food in the Yenice district of Canakkale, located in the Troy region, were evaluated in terms of ethnobotany. The plants that the local people living in the region consume as food and their usage patterns have been determined on a district basis. These plants are mostly collected from nature by people living in rural areas or used by purchasing them from the market established in the district center. While 64 taxa out of 112 taxa used for food purposes in the study area are grown naturally, 48 taxa are produced and consumed. In addition, 5 types of mushrooms, which are edible and sold in local markets, are also used as food. The leaves of 49 taxa, fruits of 43 taxa, stems of 26 taxa, flowers of 24 taxa, seeds of 10 taxa and roots of 5 taxa are consumed from plants used as food. These plants are consumed raw, cooked, seasoned, frozen, dried, pickled and canned.

(13) EFFECTS OF RHİZOBACTERİA APPLICATION ON ENZYME ACTIVITY OF DIFFERENT APPLE SCION–ROOTSTOCK COMBINATIONS

Ercan YILDIZ [1], Mehmet YAMAN [1,*], Ahmet SAY [2]
[1]Erciyes University, Faculty of Agriculture, Department of Horticulture, Kayseri, Türkiye
[2]Erciyes University, Faculty of Agriculture, Department of Agricultural Biotechnology, Kayseri, Türkiye
* Corresponding author: mehmetyaman@erciyes.edu.tr

By using biofertilizers consisting of beneficial microorganisms instead of synthetic chemicals, plant growth is increased, damage to the environment is largely prevented and soil fertility is preserved. This planned study was carried out in 7 standard cultivars (Scarlet Spur, Red Chief, Fuji, Jeromine, Galaxy Gala, Granny Smith and Golden Reinders) budded on M9 and MM106 rootstocks commonly used in the region. In the experiment, trees were applied nitrogen + phosphorus solvent rhizobacteria 3 times in 15 days in the spring period. The rhizobacteria application had a positive effect on the catalase (CAT), superoxide dismutase (SOD) and peroxidase (POD) activities contained in the leaves in all scion-rootstock combinations. This effect ranged from 4.0% to 30.0% for CAT, from 5.2% to 21.7% for SOD, and from 13.7% to 29.1% for POD. In this study, very detailed results were obtained on the effects of rootstocks and rhizobacteria application. The results of the present study may provide significant leads for further studies on this subject.

(14) DETERMINATION OF LEAF AND FRUIT CHARACTERISTICS OF ALMOND VARIETIES OF FOREIGN ORIGIN CULTIVATED IN CAPPADOCIA REGION

Hasan Talha ÜNSAL[1], Borak ERKEK[1], Mehmet YAMAN[1*]
[1]Erciyes University, Faculty of Agriculture, Department of Horticulture, Kayseri, Türkiye
* Corresponding author: mehmetyaman@erciyes.edu.tr

Almond is a type of fruit that grows both economically and naturally in many regions of Turkey. In this study, leaf and fruit characteristics of 3 different almond varieties of foreign origin grown in Ürgüp district of Nevşehir province in the Cappadocia region in 2021 and 2022 were determined. Ferragnes variety with a value of 23.47 mm in terms of leaf width, Ferragnes variety with a value of 67.9 mm in leaf length, and Ferraduel variety with a value of 13.62 in terms of petiole length formed the highest values in the leaf characteristics examined. Considering the fruit data, it was determined that Ferragnes variety had the highest value in terms of fruit length with 40.62 mm, Ferragnes variety had the highest value in fruit width values with 23.99 mm, and Ferragnes variety had the highest value in terms of fruit weight with 6.24 g. When the kernel weight data were examined, the highest value was found in Ferragnes variety with 1.61 g, and when the kernel width and kernel length data were examined, the highest values were determined in Ferragnes variety with 14.55 mm and 27.70 mm, respectively. The results of the study are thought to be important in terms of shedding light on future studies, especially since limited studies have been carried out in this region.

(15) DETERMINATION OF THE YIELD AND QUALITY CHARACTERISTICS OF SOME STRAWBERRY VARIETIES GROWED IN THE OPEN FIELD OF YAHYALI (KAYSERİ) ECOLOGICAL CONDITIONS

Mehmet Burak CERAN[1], Ercan YILDIZ, Mehmet YAMAN[1*]
[1]Erciyes University, Faculty of Agriculture, Department of Horticulture, Kayseri, Türkiye
* Corresponding author: mehmetyaman@erciyes.edu.tr

This study was carried out to determine the performance of 6 different day-neutral varieties (Albion, Monterey, Portola, Sweet Ann, Kabarla and San Andreas) and 1 local genotype in open field in the ecological conditions of Yahyalı (Kayseri) in the 2021-2022 growing season. In the research, the first flowering date of the varieties was 19 March (Local genotype) and 27 March (Portola), the harvest start date was 19 May (Kabarla) and 25 May (Albion), the end of harvest date was August 17 (Local genotype) and 20 September (San Andreas). The harvest period was determined between 87 days (Local genotype) and 122 days (Kabarla). In the experiment, the highest yield was determined in Albion variety with 591.12 g/plant, the highest fruit weight and fruit firmness were determined in Sweet Ann variety with 11.74 g and 0.75 kg-force, respectively. It was determined that the total soluble solid (TSS) content amount in the cultivars varied between 6.16% (Sweet Ann) - 13.16 (Native genotype), titratable acid content ranged between 0.48% (Sweet Ann) - 0.77 (San Andreas), pH value varied between 3.23 (San Andreas) - 4.03 (Native genotype). While the highest lightness (L) fruits were obtained from Portola variety (31.09) in the experiment, the color intensity (chroma) varied between 31.22 (Albion) and 40.75 (Portola), the color angle value (h^o) ranged between 38.61 (Albion) and 50.34 (Monterey and Portola). As a result, in Yahyalı (Kayseri) ecological conditions, in terms of yield and fruit quality characteristics such as fruit weight, color, firmness and TSS amount, Albion variety was found to be suitable, and then Sweet Ann and Kabarla varieties were important.

(16) A NEW LICHENIZED FUNGI RECORD FROM ANTARCTIC PENINSULA, ANTARCTICA ACCORDING TO *ITS* PHYLOGENY: *Buellia badia* (FR.) A. MASSAL.

Merve KAHRAMAN YİĞİT [1,*], Mehmet Gökhan HALICI [1]
[1] Erciyes University, Fen Faculty, Department of Biology, Kayseri, Türkiye
* Corresponding author: amervekahramann@gmail.com

Vegatation in the Antarctic Peninsula is quite poor due to the generally harsh conditions of Antarctica. Lichenized fungi are the dominant elements of the vegetation. There are about 450 species of lichenized fungi in Antarctica. About 65% of these lichenized fungi are distributed in the Antarctic Peninsula. *Buellia* is one of the most common genera in the Antarctic Peninsula.
Buellia genus is characterized by black lecidein apothecium, oblong or ellipsoidal and rarely citriform-shaped brown ascospores with one or more septa and a reddish-brown and rarely hyaline hypothecium. It is classified in the Caliciaceae family. The phylogeny of *Buellia*, which is a very heterogeneous genus, is still not fully resolved today. There are 964 species in the genus *Buellia* in the world. Only 21 of these species are distributed in Antarctica. These species are *Buellia aethalea* (Ach.) Th. Fr., *Buellia bouvetii* Øvstedal, *Buellia cycloplaca* (I.M.Lamb) Elix, *Buellia epigea* (Pers.) Tuck., *Buellia evanescens* Darb., *Buellia frigida* Darb., *Buellia fulvonitescens* I.M. Lamb, *Buellia grisea*, *Buellia illeatabilis* I.M. Lamb, *Buellia lignoides* Filson, *Buellia melanostola* (Hue) Darb., *Buellia minispora* Elix, *Buellia pallida* C.W. Dodge & G.E. Baker, *Buellia perlata* Darb., *Buellia pycnogonoides* Darb., *Buellia rodseppeltii* Elix, *Buellia russa* (Hue) Darb, *Buellia soredians* Filson, *Buellia subfrigida*. Inoue, *Buellia subtegens* Js. Murray, *Buellia vilis* Th. fr.
In this study, we report *Buellia badia* as a new lichenized fungi record from Antarctic Peninsula, Antarctica according to its *ITS* phylogeny.

Acknowledgments
The second author thanks for Erciyes University for their financial support to make the field works in James Ross Island, Antarctica and TÜBİTAK (118Z587) coded project. The authors are thankful for the infrastructure and facilities of J.G. Mendel station (project CzechPolar2 - LM2015078) provided during the Czech Antarctic expedition, Jan-Feb 2017.

(17) PLANT PROTECTION METHODS IN ORGANIC FARMING

Sancar BULUT [1,*], Mehmet ARSLAN[2]
[1]Kayseri University Safiye Çıkrıkçıoğlu Vocational Collage, Department of Plant and Animal Production, 38280, Talas-Kayseri, Turkey
[2] Erciyes University Agricultural Faculty, Department of Agricultural Biotechnology, 38039-Kayseri, Turkey
* Corresponding author: sancarbulut@kayseri.edu.tr

Today, producers generally aim to increase product quality and diversify, but ultimately increase efficiency. On the other hand, when the negative effects of chemical pollution in nature is in consideration, the producer can't harvest all of the produced crops, but they harvest the crops that aren't consumed by diseases and pests. The increasing human movement and trade in the world in the last few hundred years has facilitated the transfer of harmful organisms from one geographical region to another. It is estimated that there are about 20 thousands potentially harmful organisms on the globe today. However, 5 thousands of these are known to be harmful to plants. In Turkey, 6 hundreds of these organisms cause economic damage. However, in 2011, according to the records of the Department of Phytosanitary and Quarantine in the General Directorate of Food and Control (GKGM), it was determined that there were around 470 harmful organisms in Turkey, and 350 of them had technical instructions and were combated. In other words, the number of harmful organisms that threat plant health is generally increasing. Even before there was no Ministry of Agriculture in Turkey, the fight against phylloxera started and the legislation and physical infrastructures were established due to the obligation to fight against pests. However, the last 100 years of pest control studies in plant production have revealed that the fight against harmful organisms is not sustainable when only chemical control measures are taken. Because faulty or excessive chemical applications sometimes cause irreversible damages to the ecosystems, cultivation areas, water sources, human health and food chains. For this reason, it is needed to include alternative control measures, such as biotechnical and biological controls, perhaps even more so, methods such as genetic control.

(18) CLIMATE RESISTANT AGRICULTURAL PRACTICES AND CONSERVATION OF NATURE

Sancar BULUT [1,*], Mehmet ARSLAN[2]
[1]Kayseri University Safiye Çıkrıkçıoğlu Vocational Collage, Department of Plant and Animal Production, 38280, Talas-Kayseri, Turkey
[2] Erciyes University Agricultural Faculty, Department of Agricultural Biotechnology, 38039-Kayseri, Turkey
* Corresponding author: sancarbulut@kayseri.edu.tr

The agricultural sector in Turkey is one of the most climatically affected sectors. The results showed that agricultural productivity was directly affected by changes in temperature and precipitation rate and duration. On the other hand, the agricultural sector is one of the primary and crucial sectors for Turkish economy, human nutrition and livestock feed. Therefore, the capacity and ability of the agricultural sector for climate-resistance is of great importance for sustainability of food production, natural resource usage and ecosystem maintains. Agricultural production is being decreasing in various rates due to extreme weather events such as drought, flood, hail, frost, etc. that have increased in number and severity in recent years. It is necessary to quickly determine the measures that can be taken against these adverse events that cause yield and productivity losses. In line with these purposes, this review will focus on agricultural practices that can alleviate adverse climate effects on crop plants and strategies that can protect the crops from adverse climatic conditions by emphasizing on the importance of these environmentally friendly practices.

(19) THE EFFECTS OF BACILLUS ssp. ON GERMINATION AND SEEDLING GROWTH OF COMMON BEAN (*Phaseolus valvaris*)

Mehmet ARSLAN [1,*], Sancar BULUT[2]
[1] Erciyes University Agricultural Faculty, Department of Agricultural Biotechnology, 38039-Kayseri, Turkey
[2]Kayseri University Safiye Çıkrıkçıoğlu Vocational Collage, Department of Plant and Animal Production, 38280, Talas-Kayseri, Turkey
* Corresponding author: mehmetarslan@erciyes.edu.tr

Plant growth-promoting rhizobacteria are capable of promoting seed germination, plant growth and development by synthesizing phytohormones and enhancing plant nutrient acquisition and utilization. This study was carried out to determine the effects of Bacillus simplex, Bacillus thuringiensis, Bacillus cereus and Bacillus subtilis and 6 unidentified Bacillus ssp. on seed germination and seedling growth of common bean (Phaseolus valvaris). Surface sterilized bean seeds were inoculated with bacteria in centrifuge tubes for 30 minutes. The inoculated seeds were placed in the plates and replaced in a germination chamber at 25 °C for 21 days. At the end of germination test, germination rate, shoot length, root length, dry shoot and root weights were determined. The results showed that Bacillus spp. SZF135 had the highest germination rate, shoot length, root length, dry shoot and root weight. It was concluded that Bacillus spp. had a great potential to enhance seed germination and seedling growth. Further studies are needed to determine the effects of Bacillus spp. on seed yield in bean plants growing under field condition.

(20) ASSESSMENT OF BACILLUS STRAINS ON CORN GROWTH AND YIELD UNDER FIELD CONDITION

Mehmet ARSLAN [1,*], Sancar BULUT[2]
[1] Erciyes University Agricultural Faculty, Department of Agricultural Biotechnology, 38039-Kayseri, Turkey
[2]Kayseri University Safiye Çıkrıkçıoğlu Vocational Collage, Department of Plant and Animal Production, 38280, Talas-Kayseri, Turkey
* Corresponding author: mehmetarslan@erciyes.edu.tr

Plant growth promoting rhizobacteria enhance crop growth and yield by plant nutrient solubilization and mineralization, symbiotic and associative nitrogen fixation, hormone and water soluble vitamin productions. Ten strains of the genus Bacillus, characterized by their properties related to the promotion of plant growth, were evaluated to determine their effects on corm growth, development and yield under field condition. The experimental design was completely randomized plot with four repetitions. Corn seeds were treated with 10 different Bacillus strains before planting. Compared with the control, Bacillus subtilis and two unidentified Bacillus strains SZF04 and SZF07 highly increased plant height, stem diameter, ear length, seed number/ear, 1000 seed weight and seed yield/plant. Seed treatment with Bacillus strains could be an alternative option to increase corn yield without extra chemical fertilizers inputs.

(21) PARTIAL PURIFICATION AND CHARACTERIZATION OF PROTEASE ENZYMES FROM NATIVE BACILLUS CEREUS STRAINS

Semih YILMAZ[2*], Saddam Abdalhamed BDEWE BDEWE[1], Büşra GÜN[3], Aysun ÇETİN[4]

[1] Erciyes University, Natural and Applied Sciences, Department of Agricultural Science and Technologies, Kayseri, Turkey

[2] Erciyes University, Faculty of Agriculture, Department of Agricultural Biotechnology, Kayseri, Turkey

[3] Erciyes University, Natural and Applied Sciences, Department of Agricultural Biotechnology, Kayseri, Turkey

[4] Erciyes University, Medical Faculty, Department of Biochemistry, Kayseri, Turkey

* Corresponding author: ylmazsemh@yahoo.com

Proteases have wide use in various fields of industry due to their importance for breaking down the proteins into amino acids. These enzymes can be extracted from a variety of sources such as plants, animals, and microorganisms. Among them microorganisms are the most efficient, easiest, cheapest, and fastest method for obtaining high amounts. The present study was carried out to investigate the specific conditions and some other parameters in protease production process of native Bacillus cereus B16, B17, B18, B19 and B20 strains, which were obtained from Baghdad University and characterized using biochemical methods. Different culture conditions were tested for production efficiency and specificity of protease activity. Taking the proteolytic activity results into account, Bacillus cereus B17 strain was selected for ongoing detailed studies. Proteases were purified through dialysis, ion exchange chromatography and gel filtration chromatography. The optimum conditions for Bacillus cereus B17 protease production was determined as 37°C, pH 8.5, and 24h incubation period. It was also clear that metal ions and inhibitors had determining effects on protease production and activity. Consequently, incubation period, pH of the medium, metal ions and inhibitors should be checked with care for efficient production and activity of Bacillus cereus B17 proteases.

(22) NATIVE BACILLUS NITRATIREDUCENS TREATMENT ON GROWTH AND PROTEIN EXPRESSION PROFILE IN *SPINACIA OLERACEA* L.

Fatoş Şevval YÜKSEL[1], Semih YILMAZ[2*], Büşra GÜN[1], Abdulaziz KARİM[3], Güler TOPRAK[4], Emel ÜNLÜ[5]

[1] Erciyes University, Natural and Applied Sciences, Department of Agricultural Biotechnology, Kayseri, Turkey

[2] Erciyes University, Faculty of Agriculture, Department of Agricultural Biotechnology, Kayseri, Turkey

[3] Erciyes University, Natural and Applied Sciences, Department of Agricultural Science and Technologies, , Kayseri, Turkey

[4] Erciyes University, Genome and Stem Cell Centre, Kayseri, Turkey

[5] Erciyes University, Natural and Applied Sciences, Department of Horticulture, Kayseri, Turkey

* Corresponding author: ylmazsemh@yahoo.com

The spinach, as with many other plants today, is the target of pest insects and damaged by diseases. In order to reduce or eliminate these negative effects and improve the yield, PGPR application has become a very common method. In the present study, it was aimed to find out the differences in physical properties and protein expression profile of “Reis F1 May” Spinacia oleracea L. cultivar upon seed, soil and root treatment with *Bacillus nitratireducens* strains, which contribute to growth with direct or indirect ways. Native *B. nitratireducens* strains were cultivated in TSB (Tryptic Soy Broth) medium and applied to plants in 1L pots with five replications in greenhouse conditions. For root treatment, the seedlings were removed from the viols and dipped into the water containing bacterial cells and metabolites from the root parts and planted in pots. Before harvest, the number of leaves, height (cm) and SPAD values of the plants were measured and compared to the control. During and after the harvest, the weight of the plant parts was evaluated by comparing with control group. Protein extraction was carried out by TCA/Acetone method after the fresh leaf samples taken before harvest were pulverized with liquid nitrogen. It was

revealed that 38 kDa protein was clearly upregulated in tissues after root treatment with *B. nitratireducens* SY2 and SY4 strains and seed coating with *B. nitratireducens* SY4 and SY8 strains. Also, while the 16 kDa and 75 kDa bands in *B. nitratireducens* SY4 root treated seedlings were expressed clearly, it was not observed in control seedlings. Native *B. nitratireducens* strains SY2, SY4 and SY8 can safely be used for improving the yield of plants.

Acknowledgement: The study was supported by the Erciyes University Scientific Projects Unit (BAP) under the code of FYL-2021-11368.

(23) CHARACTERISATION OF NATIVE BACILLUS THURINGIENSIS STRAINS CARRYING SIP GENES AND PROTEINS

Enise YAZICI[1], Semih YILMAZ[2*], Necip ERASLAN[1]
[1] Erciyes University, Natural and Applied Sciences, Department of Agricultural Biotechnology, Kayseri, Turkey
[2] Erciyes University, Faculty of Agriculture, Department of Agricultural Biotechnology, Kayseri, Turkey
* Corresponding author: ylmazsemh@yahoo.com

Bacillus thuringiensis (Bt) is the member of the Bacillus cereus (Bc) group of bacteria with spore-forming characteristics. They are well known agents for producing various specific insecticidal proteins for controlling hazardous agricultural pests. Crystal proteins (Cry), vegetative insecticidal proteins (Vip), secreted insecticidal proteins (Sip), and cytolytic proteins (Cyt) are the main ingredients of successful bioinsecticides currently used in agriculture. In biocontrol studies with formulations made using Bt proteins and spores, effective results can be obtained without using or limiting chemical pesticides. Due to this feature, it is the most effective and successful bio-insecticide source used worldwide. Commercial products formulated using more than 78 Cry proteins, 3 Cyt proteins, 4 Vip proteins and 2 Sip proteins with specific activity on many insect species in Lepidoptera, Coleoptera, Diptera, Nematoda, and Hymenoptera have been used with successful results. In the present study, coleopteran specific sip genes were searched in 150 local Bt strains. The presence of sip genes was determined in 33 of the Bt strains. SDS-PAGE analysis was performed on proteins in the strains carrying sip genes and 40-41 kDa bands were confirmed. Preliminary information was obtained about the possible usability of local Bt strains on Coleopteran pests.

Acknowledgement: The study was supported by the Erciyes University Scientific Projects Unit (BAP) under the code of FYL-2021-11360.

(24) ALBUMIN, GLOBULIN, AVENIN AND GLUTELIN FRACTIONS IN AVENA SATIVA L. ON BACILLUS CEREUS SENSU LATO TREATMENT

Büşra GÜN[1], Semih YILMAZ[2*], Fatoş Şevval YÜKSEL[1], Hamdi ÖZAKTAN[3], Ahmet SAY[2], Sümeyye TEMİZGÜL[1]

[1] Erciyes University, Natural and Applied Sciences, Department of Agricultural Biotechnology, Kayseri, Turkey

[2] Erciyes University, Faculty of Agriculture, Department of Agricultural Biotechnology, Kayseri, Turkey

[3] Erciyes University, Faculty of Agriculture, Department of Field Crops, Kayseri, Turkey

* Corresponding author: ylmazsemh@yahoo.com

Oat (*Avena sativa* L.) is an agricultural product with relatively higher protein content and qualified amino acid composition compared to other grain products. It differs from barley, wheat and rye with its rich content of globulin fractions as storage protein. Plant growth-promoting rhizobacteria (PGPR) are soil inhabiting bacteria that use plant roots or their surroundings as habitat. The study was carried out in pots under greenhouse conditions for two growing seasons during 2020 and 2021 with tree replications. After harvest, the grains were pulverized for protein extraction and further expressional variations in albumin, globulin, avenin and glutelin proteins in seeds with SDS-PAGE. Band densities and molecular weights of the proteins in the range of 1-47 kDa for albumin, 1-100 kDa for globulin, 18-34 kDa for avenin, and 5-50 kDa for glutelin extracts were determined and compared with control samples. Significant differences in protein expression levels were observed between the samples after native bacteria treated group and control. The most striking result was that Bacillus spp. SY1 treatment caused considerable decrease in glutelin amount in oat grains compared to the control. Bacillus spp. SY1 can be used in oat fields for supplying the glutelin sensitive people with safe product.

(25) PHYTODIVERSITY OF THE ESPARTO STEPPE (*Lygeum spartum*) IN THE STEPPE REGION OF NAÂMA (ALGERIA)

Abdelkrim BENARADJ [1,*], Hafidha BOUCHERIT[1], Djamel ANTEUR[2], Ali MIHI [3]
[1]Laboratory of Sustainable Management of Natural Resources in Arid and Semi-Arid Areas, Salhi Ahmed University Center of Naama, Algeria
[2] Research Laboratory of Water Resources and Environment, Tahar Moulay University of Saida, Algeria
[3] Mohamed Boudiaf University of M'sila, Algeria
* Corresponding author: kbenaradj@yahoo.fr

The steppe grouping of Sparta (*Lygeum spartum*) in the Naama region is also a representative example of arid zones threatened by the scourge of desertification, strong anthropogenic pressure and climatic constraints. Pastoral development consists of carrying out a set of essential analyzes to know the richness and potential of natural environments and to specify present and future socio-economic needs.

Faced with this alarming situation, the State has undertaken various restoration or rehabilitation measures which form part of a national strategy for the pastoral improvement of degraded steppe rangelands, the fight against sand encroachment with a view to combating desertification.

Among the solutions proposed for the rehabilitation of these degraded rangelands, the technique of protection has recorded ecological advantages. This technique promotes natural regeneration, the most appropriate way to induce the natural biological recovery of steppe species.

At the end of this evaluation, the rehabilitation by the technique of the defense of the steppe with Lygeum spartum has a positive impact in terms of biological recovery by a quantitative and qualitative increase in the rate of vegetation cover, the floristic richness and phytomass.

After a period of protection, the Sparta experiences a return with other vegetation through the process of biological ascent, so the Sparta regenerates and develops naturally. It also thrives on loamy-sandy soil. The floristic diversity of the *Lygeum spartum* steppe is very particular because of its biological, systematic and phytogeographical characterization. This review highlights the importance of Saharan-endemic species through more favorable adaptation and resistance in an arid bioclimate.

(26) BEHAVIOURAL ANALYSIS OF POTENTIAL NEW APPROACH IN MODELLING SCHIZOPHRENIA USING ZEBRAFISH

Alexandrina-Ștefania CURPĂN [1,*], Alexandra SĂVUCĂ [2], Alin Ciobîcă [3,4]

[1] Școala Doctorală de Biologie, Facultatea de Biologie, Universitatea "Alexandru Ioan Cuza", Bd. Carol I, nr. 11, 700506, Iași

[2] Școala Doctorală de Geoștiințe, Facultatea de Geografie și Geologie, Universitatea "Alexandru Ioan Cuza", Bd. Carol I, nr. 11, 700506, Iași

[3] Departamentul de Biologie, Facultatea de Biologie, Universitatea "Alexandru Ioan Cuza", Bd. Carol I, nr. 11, 700506, Iași

[4] Centrul de cercetări biomedicale al Academiei Române, Str. Lascar Catargi, nr. 47, 700107, Iași

* Corresponding author: andracurpan@yahoo.com

Schizophrenia spectrum disorders are one of the most debilitating disorders as it severely impacts the day-to-day life of the individual. Therefore, during recent years, using zebrafish to model schizophrenia has become a reliable and popular choice due to the similarities in terms of genetics and brain structure to that of the human brain. Often times, the approach is to use ketamine in order to induce the positive symptoms of this disorder in zebrafish. However, this method can be lacking since it only mimics the positive symptoms, represented by delusions, hallucinations, which are not always the standard in terms of symptoms. Therefore, in the present study we have decided to approach this animal model from a different perspective by administrating methionine to replicate the negative symptoms described through increased anxiety, decreased social life and skills and also the combination of the two substances with the purpose to get as close as possible to the way the disorder is manifested in humans. Our results support the idea that both ketamine and methionine are reliable options to induce their respective symptoms whereas the combination of the two substances does indeed lead to different behaviour compared to the individual groups.

(27) DETERMINATION OF THE NUTRITIONAL QUALITIES AND THE TRACE OF MAJOR MINERALS CONTAINED IN DIFFERENT VARIETIES OF OLD TRADITIONAL ROMANIAN APPLES

Anamaria Raluca DENES [1,*]
[1]Dried & Fresh Fruits S.R.L., sat Jac, numarul 209, camera 2, judetul Salaj, Romania
* Corresponding author: anamariaralucadenes@yahoo.com

The aim of this work was to quantify the content of nutritional elements and minerals in dried products from traditional Romanian old apple varieties from SALAJ county, with potential for production and introduction into population consumption, as well as determining the shelf life of dried apples without the addition of preservatives on the technological flow. The apple varieties evaluated were: "JONATHAN", "POINIC", "MUSTOS" - Sample 2021, "Summer" not nominally identified, "Winter" not nominally identified, "MUSTOS" - Sample 2018. The samples taken in the study contained the skin and pulp of the fruits approximately in proportions of 1:3. The micro and macro minerals iron, manganese, magnesium, potassium, calcium and sodium were evaluated. The evaluated nutritional indicators were the content of available carbohydrates, energy content (Kj/100g, kcal/100g), energy from fats, ash content, fat content, dietary fiber, protein, dry matter, moisture. The evaluated minerals showed significant differences depending on the variety. The variety 'JONATHAN' was noted for its high content of iron and manganese, 8.1 mg/kg and 2.11 mg/kg. The "nominally unidentified summer" variety was noted for its high content of sodium 14.4 mg/kg and calcium 276 mg/kg. The "POINIC" variety stood out for its high potassium content 6380 mg/kg. The "nominally unidentified winter" variety stood out for its high magnesium content of 377 mg/kg. The results indicated the high nutritional potential of apples from old traditional Romanian varieties identified in SALAJ county and cultivated in an ecological system. Small losses of nutritional qualities and the amount of minerals were observed in the time

interval 2018-2021, which indicates that dried apples have a long shelf life.

Acknowledgments: This study was carried out within the project entitled "TRADITIONAL ROMANIAN APPLE IN ECOLOGICAL SYSTEM: PRESERVATION OF GENETIC HERITAGE AND LONG-TERM ECONOMIC DEVELOPMENT, No. C161A0000011863300011 / 04.05.2021" - Main funding source: Romania - Rural Development Program (National)

(28) CAPITALIZATION OF WINE BY-PRODUCTS FOR THE DEVELOPMENT OF NANOMATERIALS WITH BIOACTIVE PROPERTIES

Anda Maria BAROI [1,2*], Alexandru Vlaicu [1], Cristina Emanuela ENASCUTA [1], Roxana Ioana MATEI (BRAZDIS) [1,3], Toma FISTOS [1,3], Irina FIERASCU [1,2], Radu Claudiu FIERASCU [1,3]

[1]National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM, 202 Spl. Independentei, 060021, Bucharest, Romania

[2]University of Agronomic Sciences and Veterinary Medicine of Bucharest, Bucharest, 59 Marasti Blvd., 011464, Romania

[3]University "Politehnica" of Bucharest, Bucharest, 1-7 Gh. Polizu Str., 011061, Romania

* Corresponding author: anda.baroi@icechim.ro

Grape crops are one of the main agricultural activities of the world. During the technological processing of vines/grapes, various by-products are generated as biomass: vine shoots, grape stems, wine yeasts, pomace, etc. Furthermore, these wastes can be used as a substantial source of bioactive compounds (phenolic compounds, proteins, lipids) with important bioactive properties (antioxidant, antimicrobial, etc.). The side streams of the wine industry together with the viticultural wastes have a wide range of by-products available that can be exploited and introduced as added value in different industries.

The research project aims the efficient valorisation of viticultural waste, using the bioactive compounds present in their natural extracts for the development of new nanomaterials with bioactive properties.

The first step in the metallic nanostructure's phytosynthesis process consists in the obtaining of different natural extracts by different extraction methods and the optimization of the operational extraction parameters in order to recover high yield of phytoconstituents from vegetal materials wastes of grapevine. Afterwards, the extracts will act as a reducing agent for the metallic solution to synthesize

metallic nanoparticles which will be characterized by modern analytical techniques and evaluated for their antioxidant and antimicrobial activity.

Acknowledgments

The authors gratefully acknowledge the support of the Ministry of Research, Innovation and Digitization through Program 1 - Development of the national research-development system, Subprogram 1.2-Institutional performance- Projects to finance excellence in RDI, Contract no. 15PFE/2021. The support provided by a grant of the Ministry of Research, Innovation and Digitization, CCCDI—UEFISCDI, project number PN-III-P2-2.1-PED-2021-0273, within PNCDI III, is also gratefully acknowledged.

(29) EFFECT OF DIFFERENT PHYTOTECHNOLOGICAL FACTORS ON THE QUALITATIVE AND QUANTITATIVE PARAMETERS OF THE ITALIAN RIESLING GRAPE VARIETY

Géza BALLA[1], Csaba MOLDOVÁN[1*], Tekla Amália LUNKA[1*], Zsolt SZEKELY-VARGA[1], Endre KENTELKY[1]
[1]Sapientia Hungarian University of Transylvania, Faculty of Technical and Human Sciences, Department of Horticulture, Calea Sighișoarei 2, 540485, Târgu Mureș/Corunca, Romania
* Corresponding authors: tekla.lunka@gmail.com, csaba.moldovan@ms.sapientia.ro

Grapes are one of the most widely cultivated plants in the world. Grapes and wine have great cultural importance in many religions. Our experiment was carried out at Sapientia Hungarian University. The aim of the experiment was to examine the content and quality values of the Italian Riesling variety, to determine the conditions necessary for the best yield, and to observe the development of shoot growth. Regarding the content values of Italian Riesling, although there were no big differences among the treatments, the highest sugar and acid content was achieved by the 25% bud load. The largest shoot lengths were also grown at the 25% bud load. However, most must be given by the 50% bud load, which is almost three times the control. Based on the data, it can be concluded that the Italian Riesling variety, increasing the bud load could have a positive effect on the quantity and quality of the must, furthermore the vegetative development was stimulated more in certain treatments.

(30) EXAMINATION OF THE QUALITATIVE AND QUANTITATIVE PARAMETERS OF THE WHITE WINE GRAPE VARIETY KIRÁLYLEÁNYKA (FETEASCĂ REGALĂ) IN THE CASE OF DIFFERENT BUD LOADS

Géza BALLA[1], Csaba MOLDOVÁN[1*], Tekla Amália LUNKA[1*], Zsolt SZEKELY-VARGA[1], Endre KENTELKY[1]
[1]Sapientia Hungarian University of Transylvania, Faculty of Technical and Human Sciences, Department of Horticulture, Calea Sighișoarei 2, 540485, Târgu Mureș/Corunca, Romania
* Corresponding authors: tekla.lunka@gmail.com, csaba.moldovan@ms.sapientia.ro

Grapes are grown on an area of 8.5 million hectares on Earth. Most of the world's grape production (60%) is located in the regions of Europe. The largest grape and wine-producing countries include France, Italy, and Spain. Viticulture in the Carpathian basin has a history of 2,000 years. The control of the Királyleánnyka (Feteasca regală) variety which is a traditional Hungarian variety, reached the highest sugar content, with an exceptionally high value, and all three loaded treatments were significantly below this. The evolution of the acid content was exactly the opposite, the control reached the lowest value. In terms of survival, all load levels outperformed the control. In conclusion, in the case of Királyleánnyka (Feteasca regală), the bud load had both positive and negative effects on the content values, but it had only a positive influence in terms of yield. On the other hand, based on our observation, a high shoot density developed on the high-stressed stems in the plantation, which prevented the phytotechnical operations from being carried out.

(31) LANDSCAPE ARCHITECTURE RENOVATION CONCEPT OF HOMORODLOK - THE SOUND OF NATURE AS VALUE OF THE LANDSCAPE

Réka BOTH[1], Ildikó LIHĂT[1*], Zsolt SZEKELY-VARGA[1], Géza BALLA[1], Endre VÁNYOLOS[1], Endre KENTELKY[1*]
[1]Sapientia Hungarian University of Transylvania, Faculty of Technical and Human Sciences, Department of Horticulture, Calea Sighișoarei 2, 540485, Târgu Mureș/Corunca, Romania
* Corresponding authors: ildiko.lihat@gmail.com, kentelky@ms.sapientia.ro

The relationship between humans and nature is in a constant state of transformation. Humans interpret nature differently, but the undeniable need for a connection with natural areas persists. The value of natural soundscapes in overcrowded and noise-polluted cities is often overlooked. The current survey and conceptual plan aim to develop proposals for the use of the Homorodlok area, taking into account its unique natural characteristics and sounds, as well as the needs of the local population. An important aspect is to showcase the mountainous landscape, highlighting its values while also presenting the impact of human activity on nature. Homorodlok is located in the northern part of Căpâlnița settlement, in Harghita county, Romania, and covers an area of 3.82 hectares. Locals use the area for various events. The diversity of land use in the outskirts of this settlement creates opportunities in some places and problems in others, making it essential to adapt the area for everyday life. The proposal aims to resolve the rural public space of Căpâlnița and strengthen the area's connection with the settlement by developing a plan that considers natural components, including changes in land use, alongside people-centered perspectives.

(32) PROPAGATION OF TRANSYLVANIAN ENDEMIC AND ENDANGERED PLANT SPECIES

Ildikó LIHĂT[1], Zsolt SZEKELY-VARGA[1*], Anna-Mária CSERGŐ[1], Géza BALLA[1], Endre KENTELKY[1*]
[1]Sapientia Hungarian University of Transylvania, Faculty of Technical and Human Sciences, Department of Horticulture, Calea Sighișoarei 2, 540485, Târgu Mureș/Corunca, Romania
* Corresponding authors: zsolt.szekely-varga@ms.sapientia.ro, kentelky@ms.sapientia.ro

Climate change has already caused irreversible stock changes in species distributions in many parts of the world. Species are lost and disrupted because they are highly dependent on changes in temperature. The aim of the experiment is to develop cultivation techniques for wild perennial plants of ornamental value that are rare, protected or highly endangered, thus helping to maintain these plant populations while increasing the number of ornamental plants grown. As plant material we have collected the seeds of *Achillea ptarmica*, *Achillea impatiens*, *Achillea* x *girgioensis*, *Allium obliquum*, *Silene zawadskii*, *Dianthus petraeus* ssp. orbelicus, and *Centaurea triumfettii* in two different years. The collected seeds were sown in spring and autumn, alongside these the germination was determined also in Petri dishes. From our results could be determined that at the *Caryophyllaceae* family both genus seeds germinated reasonably good, in the case of the plants belonging to the *Asteraceae* family the seeds obtained different results, furthermore at the *A. obliquum* the germination was low. The present experiment offers the possibilities to multiply these endangered plant species, and to improve the impoverished genetic stock.

(33) ORGANIC/INORGANIC BIOCOMPOSITES OF NATURAL AND/OR SYNTHETIC ORIGIN FOR THE CONSERVATION OF CULTURAL HERITAGE

Toma FISTOS [1,2*], Roxana Ioana MATEI (BRAZDIS) [1,2], Anda Maria BAROI [1,3], Irina FIERASCU[1,3], Radu Claudiu FIERASCU [1,2], Tanta-Verona IORDACHE [1], Sorin-Viorel DOLANA [1]

[1]National Institute for Research and Development in Chemistry and Petrochemistry – ICECHIM, 202 Splaiul Independentei, 060021, Bucharest, Romania

[2]University Politehnica of Bucharest, 313 Splaiul Independentei, 011061, Bucharest, Romania

[3]University of Agronomic Sciences and Veterinary Medicine of Bucharest; 59 Mărăști Blvd., 011464, Bucharest, Romania

* Corresponding author: tomafistos@yahoo.com

The preservation of cultural heritage is an extremely important issue, as environmental conditions are becoming more and more aggressive, leading to the rapid deterioration of historical monuments. The main objective of the project is to develop an innovative composite with a role in preserving and consolidating waterlogged wood with cultural value. Solving this problem is a real challenge due to the support material, namely wood, which is a natural material that presents a high degree of difficulty when it comes to applying treatments due to the physical, chemical and mechanical properties that differ from one wood mass to another; the particular case of waterlogged wood is even more demanding, as the immersion in aquatic environments for long periods of time can significantly and irreversibly alter the wood's characteristics. The reinforcing material to be obtained consists of a polymer component, selected in order to provide a good compatibility of the final composite with the wood mass and an antimicrobial component (phosphatic materials with enhanced antimicrobial properties), which will provide protective characteristics (against biodegradation) to the composite.

Acknowledgments

The authors gratefully acknowledge the support of the Ministry of Research, Innovation and Digitization through Program 1 - Development of the national research-development system, Subprogram 1.2-Institutional performance- Projects to finance excellence in RDI, Contract no. 15PFE/2021. The authors also gratefully acknowledge the financial support provided by a grant of the Ministry of Research, Innovation and Digitization, CCCDI—UEFISCDI, project number PN-III-P2-2.1-PED-2021-0627, within PNCDI III

(34) 'GREEN' SYNTHESIS OF METALLIC NANOPARTICLES: APPLICATIONS FOR BIOSENSOR PLATFORM

Camelia UNGUREANU [1,*], Anda Maria BAROI [2,3], Ioana Silvia HOSU[3], Irina FIERASCU[2,3], Zgârian Roxana[1], Tihan Grațiela[1], Radu Claudiu FIERASCU[1,2]
[1]University POLITEHNICA of Bucharest, Bucharest, 313 Spl. Independentei, 060042, Romania
[2]National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest, 202 Spl. Independentei, 060021, Romania
[3]University of Agronomic Sciences and Veterinary Medicine of Bucharest, 011464 Bucharest, Romania
*Corresponding author: ungureanucamelia@gmail.com

"Green" synthesis has gained a lot of attention as a sustainable, and eco-friendly techniques for synthesizing of metal nanomaterials. Biosynthesis protocol employing plant extracts is a simple, efficient, cost effective and feasible methods as well as an alternative to conventional preparation methods for metallic nanoparticle synthesis.
In this work, several cruciferous plants were evaluated for the phytosynthesis of gold nanoparticle.
The hydroalcoholic extracts were obtained through the two extraction methods (temperature (T) and microwave (MW)). For the phytosynthesis of the metallic nanoparticles, each extract was mixed with prepared 1 mM aqueous solutions of $HauCl_4$, in an Erlenmeyer flask and incubated at room temperature for 30 min.
The final goal is to develop efficient and ecological systems for the detection of various pathogens in food products.

Acknowledgments
„This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CCCDI – UEFISCDI, project number PN-III-P2-2.1-PED-2021-0042, within PNCDI III".

(35) ASPECTS REGARDING EFFICIENT PRACTICES IN MAINTAINING HEALTH STATUS

Andrei COMAN[1,*], Diana COMAN[2]
[1] Medical Practice Comosan SRL Sibiu, Romania
[2] "Lucian Blaga" University of Sibiu, 10 Victoriei Blvd, 550024 Sibiu, Romania
* Corresponding author: dr.comanandrei@gmail.com

The paper is focused on individual experiences regarding the realization of a strategy for monitoring medical assistance and preventing diseases, for the well-being of patients. Personal involvement in various procedures performed in a rural dental office led to the selection of the best options regarding the management of oral health problems and the follow-up of patients. The novelty of the material is found in the design of the research, which brings both theoretical and practical aspects by identifying the specific conditions to be addressed, individualizing the treatment and managing the patient in order to maintain the state of oral health and also a better quality of life. The purpose of the paper is to highlight the organization and quality of dental health services directly involved in improving the quality of life with reference to the ability of patients to perform their usual activities without physical and mental discomfort. An opinion questionnaire was used for a number of 226 patients who called for office consultations and who answered a predetermined set of questions. The results of the study lead to the idea that a beneficial balance of the state of healthcare and implicitly the quality of life mainly refers to the communication between the medical staff and the patient, the addressing pathology, the type of ailments and treatments, the satisfaction of the therapeutic act.

(36) MONITORING OF THE MAIN PATHOGENS FOUND IN APPLE PLANTATIONS AT SCDP IASI

Cristina Ionela TURCU[1] , Simona Mihaela CHELARU[1]*, Agurița Aftudor MANOLACHE[1], Ionel PERJU[1]
[1]Research Station for Fruit Growing Iasi, Romania
* Corresponding author: simona.chelaru17@gmail.com

The observations took place at RSFG Iasi, Development Center Falticeni in 2022, in apple plantations where a number of 9 phytosanitary treatments were applied to the warning, with the spray machine of the type Agroma. A total of 3 varieties (Jonathan, Golden delicious, Stakrimson) were studied compared to the untreated variant.
The phytosanitary treatment program covered a wide range of phytopharmaceuticals, using 8 contact and systemic fungicides to prevent and combat pathogens that produce Venturia inaequalis, Erwinia amylovora, Podosphaera leucotricha (Ell. et Ev) Salm and Monilinia laxa.
Thus, in the untreated variant, the degree of attack for rapeseed on the fruit was 82.8%, and for Podosphaera leucotricha on the shoots the attack was 35% in the Jonathan variety.
In the treated plot, the degree of Venturia inaequalis attack on fruit was reduced to 11.3% and 3.0% in the Starkrimson and Golden delicious varieties, and in the Jonathan variety up to 0.5%.

(37) MONITORING THE FLIGHT DYNAMICS OF THE MAIN LEPIDOPTERS IN APPLE PLANTATIONS WITH THE HELP OF TRAPS WITH SYNTHETIC SEXUAL PHEROMONES

Cristina Ionela TURCU[1], Simona Mihaela CHELARU[1]*, Agurița Aftudor MANOLACHE[1], Ionel PERJU[1]
[1]Research Station for Fruit Growing Iasi, Romania
* Corresponding author: simona.chelaru17@gmail.com

The observations were made at RSFG IASI, during 2021-2022, at the Fălticeni Development Center, in an intensive apple plantation in Jonathan, Golden delicious and Starkrimson varieties grafted on MM106, years 28-32 from planting, with distances of 4/2.5 meters. For the monitoring of harmful pests of the apple, traps with synthetic sexual pheromones of the type ATRAPOM, ATRARET, ATRABLANC, ATRAMAL and ATRASCIT were used for five lepidopters, namely: Cydia pomonella (fruit worm), Phylonorichter blancardella (marbled miner) Adoxophyes reticulana (fruit skin moth), Stigmella malella (linear miner) and Leucoptera scitella (circular miner). The installation of the traps was done in early May.
The conditions of the period considered in the study, 2021-2022, were favorable for the development of insect pests of the apple, these monitored species showed high peaks of flight curves between May and August.

(38) INNOVATIVE ANALYTICAL TECHNIQUES REGARDING THE DETERMINATION OF PESTICIDE RESIDUES IN AGRICULTURAL SOIL MATRICES

Diana Ionela POPESCU (STEGARUS)[1], Cristina MIHAESCU[2], Anca Nicoleta ŞUŢAN[2*]
[1] National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Ramnicu Valcea, 4th Uzinei Street, 240050 Ramnicu Valcea, Romania
[2] Department of Natural Sciences, University of Pitesti, Targul din Vale 1, 110040 Pitesti, Romania
* Corresponding author: anca.sutan@upit.ro

Widely used in crop production to prevent unwanted pests and increase agricultural productivity, pesticides, as well as their residues and metabolites, induce major environmental problems and raise questions about potential public health effects. As a result of high persistence and toxicity of pesticide residues, contamination of soils, air and water resources have become a problem of increasing concern. In order to protect human health, Codex Alimentarius, FAO and EU framework directives have regulated the maximum limits of pesticide residues. Thus, in order to ensure that there are only permitted levels of pesticides in food products, the monitoring of these compounds is extremely important. To date, several techniques have been developed for the detection of pesticide residues, from conventional analytical techniques to advanced detection techniques. Conventional analytical methods are gas chromatography (GC) and high performance liquid chromatography (HPLC), coupled with various detectors (MS, ECD, DAD) that provide sensitive, specific and reliable analysis results.

Acknowledgments
A.N.Ş. gratefully acknowledges the support obtained through project number PN-III-P4-ID-PCE-2020-0620, within PNCDI III, a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS– UEFISCDI.

(39) RESIDUES OF POLYCHLORINATED BIPHENYLS, ORGANOCHLORINE PESTICIDES AND HEAVY METALS IN ENVIRONMENTAL SAMPLES AND BOVINE MILK OF SEVERAL FARMS OF SOUTH ROMANIA

Diana Ionela POPESCU (STEGARUS)[1], Anca Nicoleta ŞUŢAN[2*]
[1] National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Ramnicu Valcea, 4th Uzinei Street, 240050 Ramnicu Valcea, Romania
[2] Department of Natural Sciences, University of Pitesti, Targul din Vale 1, 110040 Pitesti, Romania
* Corresponding author: anca.sutan@upit.ro

A wide variety of environmental chemical hazards may enter the food webs and generate negative effects in human body. Among them, residues of polychlorinated biphenyls, organochlorine pesticides and heavy metals pose serious problems because they are persistent chemicals. In the present study, very sensitive analytical methods – gas chromatography coupled with mass spectrometry (GC-MS) and ultraviolet digestion with inductively coupled plasma with mass spectrometry (UV-ICP-MS) were applied for evaluation of persistent chemicals residues in environmental samples (soil, grassland grass, water) and milk of livestock of local Romanian farms from different rural/urban/industrial areas from three Romanian counties. PCBs were detected in almost all environmental and milk samples. The PCBs levels in soil were higher than normal values set by national legislation, but below the alert thresholds and intervention levels. The highest level of PCBs was detected in samples from industrial area. Among individual pesticides, DDT and/or its metabolites were found in consistently higher amounts in environmental samples and bovine milk at all sites. Increased values of alpha, beta and gamma-HCH were also found in milk samples but without exceeding the maximum admissible levels set by Romanian legislation. Endrin was absent in most samples, with some exception. The highest total concentration of investigated pesticides was found in samples from industrial area. Soil, grass and water samples from

industrial area showed high concentration of cadmium, copper and zinc. The lead concentration exceeded the maximum admissible level in samples from urban area.

Acknowledgments

A.N.Ș. gratefully acknowledges the support obtained through project number PN-III-P4-ID-PCE-2020-0620, within PNCDI III, a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS– UEFISCDI.

(40) S.O.S. MICROPLASTIC EVERYWHERE!

Oana Alexandra DRĂGHICEANU[1], Ionuț Alin BUNGĂU[1]*, Codruța Mihaela DOBRESCU[1], Anca Nicoleta ȘUȚAN[1], Liliana Cristina SOARE[1]
[1]Department of Natural Sciences, University of Pitești, Târgul din Vale 1, 110040 Pitești, Romania
* Corresponding author: bungau_alinush@yahoo.com

Microplastic is an important source of pollution that requires our attention daily because the human kind is the main factor in its production, use, and dispersion. With over 50 different basic types of polymers included in 60,000 plastic formulations, microplastic has a permanent presence in our lives. In 2018, the theme of the 45th celebration of World Environment Day was #BEATPLASTICPOLLUTION. Now, after five years, the planet is choking on plastic, so the 2023 World Environment Day campaign #BeatPlasticPollution calls for global solutions to combat plastic pollution. The plastic fragments with dimensions under 5 mm represent microplasctic, which is ”the long legacy left behind by plastic pollution”. The sources of microplastics can be primary (microbeads in personal care products, fragmentation of fabric materials during laundry etc.) or secondary (tire dusts from roads, fragmentation of larger plastic materials such as plastic bottles etc. by wind, sun etc). Microplastics have different morphology: fibers, pellets, microbeads, nurdles, and lines. The toxicity of microplastics affects all the living organisms and represent also an important problem for human health.

Acknowledgments
This activity was carried out with the support obtained through project number PN-III-P4-ID-PCE-2020-0620, within PNCDI III, a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS– UEFISCDI.

(41) RESULTS ON GENETIC VARIABILITY IMPROVEMENT BY SEXUAL HYBRIDISATION IN SWEET CHERRY TO OBTAIN NEW VALUABLE GENOTYPES

Elena IUREA[1], Sorina SÎRBU [1*], Iulia MINEAȚĂ[1], Iuliana GOLACHE[1], Ionel PERJU[1], Ionuț UNGUREANU[1]
[1]Research Station for Fruit Growing Iași, Ion Vodă cel Viteaz, 3, 707305, Miroslava, Iasi, Romania
* Corresponding author: sorinas66@yahoo.com

Expanding the genetic variability is an essential condition for achieving the goals in the sweet cherry breeding programme. Sexed hybridization is known to be the only conventional method that can generate many descendants with a continuous spectrum of genetic variation. The study of the genetic nature of parental cultivars and the transmission of traits followed by the breeder to their descendants is highly important for improving the selection efficiency. The studies took place between 2018-2021, using fourteen cherry cultivars as research material: seven new cultivars ('Cătălina', 'Maria', 'Croma', 'George' obtained through controlled sexed hybridization and 'Margonia', 'Andante', 'Croma' obtained through free pollination) and seven cultivars being their genitors ('Van', 'Stella' 'Boambe de Cotnari', 'Ciliegia di Ottobre', 'Fromm', 'Lijana' and 'Bigarreau Drogan'). Each cultivar was compared against their genitors (♀ x ♂). The values of the fruit's size in the new sweet cherry cultivars were between 7.2 g (weight) and 23.2 mm (equatorial diameter) ('George') and 7.7 g and 24.2 mm ('Cătălina', 'Muşatini', 'Croma') and the content of soluble dry substance was between 16.4 ('Margonia') and 19.9 ('Cătălina'). In terms of fruits' resistance to cracking it was statistically determined that the seven studied cultivars have a superior resistance in comparison with their genitors with percentage of cracking as follows: 'Cătălina' (6.6%), 'Muşatini' (3.9%), 'Maria' (9.3%), 'Croma' (19.3%), 'Andante' (11.0%), 'Margonia' (1.5%) and 'George' (5.8%).

Acknowledgments
This work was financially supported by the Romanian Academy of Agricultural and Forestry Sciences, Grant no. PT 1.3.4., with the title `Creation of new cultivars with quality fruits and genetic resistance of tolerance to biotic and abiotic factors`.

(42) SPATIAL DISTRIBUTION OF THE OTTER POPULATION IN ROSCI 0065 PROTECTED AREA

Daniela Cristina IBĂNESCU [1],*, Mihaela CRISTESCU[2], Adina POPESCU[1] Aurelia NICA[1]
[1]"Dunarea de Jos" University of Galati, 111 Domneasca Street, 800201 Galati, Romania
[2] Răsvan Angheluță"Natural Sciences Museum Complex Regimentul 11 Siret 6A Street, 800340, Galati, Romania
* Corresponding author: dgheorghe@ugal.ro

In this paper were examined the distribution of the otter population on the right bank of the Danube River, between the settlements of Grindu (Cotu Pisicii) and Tulcea. The present work aims to present a case study, carried out between October 2019 and March 2022 in the floodplain (dyke - bank) of the Danube River (between the village of Grindu or Cotu Pisicii and the city of Tulcea) and the aquatic complex Somova - Parcheș. The investigated area presents two distinct types of habitat: the maritime Danube and the dike - bank flood zone and the Somova - Parcheș aquatic complex. Otter signs of presence (footprints, spraints anal jellies, prey) were recorded on 281 transects of 1200 m length using standard otter survey method. The study presents the distribution and density of signs of presence compared to the two types of habitats, but also aspects regarding the preference for the type of substrate used for defecation.

Acknowledgments
The authors are grateful for the support granted through the POIM 123322/2019 project ” Revision of the management plan and the RBDD regulation”

(43) SCREENING AND DESIGNING BIOSTIMULANTS USING ELECTROCHEMICAL SENSORS

Ioana Silvia HOSU[1*], Valentin RĂDIȚOIU[1], Monica Florentina RADULY[1], Anda-Maria BAROI[1,2], Irina FIERĂSCU[1,2], Radu-Claudiu FIERĂSCU[1,3]
[1] National Institute for Research & Development in Chemistry and Petrochemistry-ICECHIM Bucharest, 202 Spl. Independentei, 6th district, Romania
[2] Faculty of Horticulture, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 011464 Bucharest, Romania
[3] Faculty of Chemical Engineering and Biotechnologies, University "Politehnica" of Bucharest, 313 Splaiul Independentei Str., 060042 Bucharest, Romania
* Corresponding author: ioana.shosu@yahoo.com

Plant Biostimulants (PBs) are products applied to cultivated plants that modulate the life processes with the "sole aim of improving one or more of the following characteristics of the plant or the plant rhizosphere: (a) nutrient use efficiency; (b) tolerance to abiotic stress; (c) quality traits; (d) availability of confined nutrients in soil or rhizosphere" [1]. Designing PBs is one of newest method to control and improve a crop production, but this design isn't usually performed/adapted to industrial purposes. Usually, PBs are prepared by empirical methods, missing out the opportunity to reach their full potential, thus their best implementation in plants. One of the proposed mechanisms of action is increased tolerance to reactive oxygen species (ROS) and in correlation with this, the screening of scavenging effect of ROS of the biostimulants could be an effective way to select between PBs, contributing to a better PBs design.
This work focuses on presenting a new electrochemical method based on different metal phthalocyanines, a known catalyst for reactive oxygen species decomposition. The sensors were characterized with SEM, FTIR, UV-Vis and through electrochemical methods (especially Cyclic Voltammetry (CV) and Chronoamperometry (CA).

[1] EU Regulation 2019/1009.
[2] Nephali, L. et al., *Metabolites* 2020, 10(12): 505.

Acknowledgments
This work was also supported by grants of the Ministry of Research, Innovation and Digitization, CNCS - UEFISCDI (Romania), project number PN–III–P1-1.1-PD-2021-0798, within PNCDI III.

(44) PRELIMINARY STUDY ON THE BEHAVIORAL RESPONSE OF ZEBRAFISH TO THE PRESENCE OF IBUPROFEN AND ANTIEPILEPTICS RESIDUES IN WATER

Ionut-Alexandru CHELARU[1,2], Alexandra SAVUCA[1,2], Roxana JIJIE[6,*], Alin Stelian CIOBICA[3,4,5], Mircea Nicusor NICOARA[1,3]

[1] Doctoral School of Geosciences, Faculty of Geography and Geology, "Alexandru Ioan Cuza" University of Iași, Carol I Avenue, 20A, Iași, Romania

[2] Doctoral School of Biology, Faculty of Biology, "Alexandru Ioan Cuza" University of Iași, Carol I Avenue, 20A, Iași, Romania

[3] Department of Biology, Faculty of Biology, "Alexandru Ioan Cuza" University of Iași, Carol I Avenue, 20A, Iași, Romania

[4] Academy of Romanian Scientists, Splaiul Independentei nr. 54, sector 5, 050094 Bucuresti, Romania

[5] Center of Biomedical Research, Romanian Academy, Iași, Bd. Carol I, no 8, Romania

[6] Department of Exact and Natural Sciences, Institute of Interdisciplinary Research, "Alexandru Ioan Cuza" University of Iasi, Bd. Carol I, 700505 Iasi, Romania

* Corresponding author: roxana.jijie@uaic.ro

Pharmaceutical pollutants are being studied because their presence is increasingly common in surface waters, groundwater and even drinking water, and this can lead to negative effects on ecosystems and people. The aim of the study is to observe the toxic effects of two types of substances, quite often used nowadays: Valproic acid (antiepileptic) and ibuprofen (anti-inflammatory). Currently, a big problem is the use that leads to abuse, which leads to the further elimination of substances from the environment. Considering the results obtained, we can think of a preliminary conclusion, that both individual substances and in the mixture generate behavioral changes, inducing toxicity in this regard. All three types of exposure have effects from the first administered dose, effects that are maintained in the case of ibuprofen but not in the case of

administration of valproic acid or the mixture. Apparently, ibuprofen has an anxiogenic effect and valproic acid an anxiolytic one, but there could also be toxic effects, as shown by the differences between the evaluated parameters, compared to pretreatment. However, in nature, a strong anxiolytic effect combined with a decrease in normal aggression can lead to problems in the perpetuation of the species. In the mixture, the valproic acid appears to combat the effects of ibuprofen, but still generates behavioral differences that may indicate toxicity. Given the data obtained from the experiment, our future studies will try to identify more details about the toxicological effects of these substances.

(45) FISH RESOURCE OF THE RIVER PRUT

Luiza FLOREA [1]*
[1]Dunărea de Jos University of Galați, Cross-Border Faculty, Department of Applicant Sciences, Galați, Romania
* Corresponding author: luizafloreagl@yahoo.com

Among the first information about the Prut river and its wealth in fish are the notes of the Moldavian chronicler Miron Costin (1633-1691), one of the first writers and historiographers in Romanian literature, who wrote that "in the lower country, in the vicinity of the Danube, abounds in fish and herds". Then follows the writings from the "Codex Bandinus" of the Roman Catholic archbishop Marco Bandini (1595-1650) and those of the prince and writer Dimitrie Cantemir (1673 -1723) in the book "Descriptio Moldave" which makes the first characterization of the Prut river that he describes like a restless river "a little cloudy because of the sand that the water carries with it", but clean and "rich in all kinds of life". Current information about the Prut River and its richness in fish was provided within the project "Joint Management Romania - Republic of Moldova for the conservation of biodiversity in the border area", carried out by the PHARE CBC RO - MD 2004-2006 program, in the book "Tradition, promoters of Galați fishing", written by Tudose Tatu within a project financed by the 2007-2013 Fisheries Operational Program, but within the articles published by researchers from both banks of the Prut River. Thus, a lot of data can be found from the Institute of Zoology of the Academy of Sciences of the Republic of Moldova and from the “Dunărea de Jos” University of Galati.

(46) FARM TO FORK STRATEGY AND AQUACULTURE

Luiza FLOREA [1]*
[1]Dunărea de Jos University of Galați, Cross-Border Faculty, Department of Applicant Sciences, Galați, Romania
* Corresponding author: luizafloreagl@yahoo.com

To meet the challenges ahead and to protect the livelihoods of people on the European continent now and for generations to come, the European Commission launched the European Green Deal in 2019, which is a set of policy initiatives with the overall aim of making a climate-neutral European Union in 2050. The Farm to Fork strategy is at the heart of the European Green Deal and aims to make food systems fair, healthy and environmentally friendly. Food systems, which currently account for almost a third of global GHG emissions, consume large amounts of natural resources, lead to biodiversity loss and negative health impacts, and do not enable economic returns and equitable livelihoods for all actors, especially for primary producers. The Farm to Fork strategy aims for the production, transport, distribution, marketing and consumption of food products to have a neutral or positive impact on the environment. This strategy aims to reward those farmers, fishermen and other operators in the food chain who have already transitioned to sustainable practices, enable the transition of others and create additional opportunities for their businesses. In addition to significant support for sustainable aquaculture through the future European Maritime and Fisheries Fund, the Commission is considering adopting EU guidelines for Member States' sustainable aquaculture development plans and promoting appropriate spending under the fund.

(47) MULTIFUNCTIONAL GARDEN PLANNING

Daniela-Sabina POȘTA[1], Roberto BERNARDIS[2*], Sándor RÓZSA[3], Tincuța-Marta GOCAN[3], Adriana Magdalena LUNCAN (BREAZ) [1]
[1] University of Life Sciences "King Mihai I" from Timișoara, 119 Aradului Street, 300645 Timișoara, Romania
[2] University of Life Sciences, "Ion Ionescu de la Brad" Iași, Romania, 3 Aleea Mihail Sadoveanu Street, Iaşi, 700490, România.
[3]University of Agricultural Sciences and Veterinary Medicine, Faculty of Horticulture, , 3-5 Mănăştur Street, 400372, Mănăştur Street, Cluj-Napoca, Romania
* Corresponding author: roberto041069@yahoo.com

The land whose development proposal is the subject of this paper is part of the village of Călacea, whose geographical coordinates are 45.9516° N, 21.1482° E. The landscaping of the area and the paths included in this project aims to create a multifunctional space where, taking advantage of the generous surface and the quality of the soil, trees and ornamental perennials, fruit trees and shrubs, areas for growing vegetables and aromatic plants, and relaxation areas in the form of pergolas will find their place, a glass-walled hut, storage areas for tools and plant waste, a solarium, a pond built to create a biotope to encourage specific biocenosis, a decorative fountain, paths and walkways to facilitate access between the elements of the landscape and a lighting system that wants both practical and decorative.

(48) BEING IN CONTACT WITH NATURE, BELONGINGNESS AND AWE

Nicoleta RĂBAN-MOTOUNU[1,*]
[1] University of Pitesti, Pitesti, Romania
* Corresponding author: nicoleta.motounu@upit.ro

Spending time in nature or simply watching a video or photos from nature seems to improve self-centeredness, becoming aware of personal needs and means to satisfy them. It also has a restoring effect on cognitive functions and human brain. Fewer studies were conducted on how spending time in nature affects the sense of belonging and the appreciation of other people. In present paper we present the results of an experiment involving first year Clinical Psychology students participating in a Health Psychology and Psychosomatics course. The participants in the experimental group watch a film presenting the life of several families of animals and birds in wilderness. Afterwards, they completed two measures: one for the sense of belongingness and the other with awe for the significant people in their life. The control group only completed the questionnaires as part of regular activities. The results show that after watching the film from wilderness the feelings of timelessness, the physiological aspects and greatness of awe towards a significant other were significantly affected, while feelings of Self, connectedness, feeling accepted/included or rejected/excluded showed no significant differences for the two groups.

(49) EXPERIENTIAL APPRECIATION AS A HEALTH AND LIFE PROTECTIVE RESOURCE

Ileana-Loredana VITALIA[1]*
[1]University of Pitesti, Department of Psychology, Communication Sciences and Social Assistance, Pitesti, Romania
* Corresponding author: ileanavitalia@yahoo.com

Considering the multidimensional structure of the Meaning in Life (MIL) concept, the present paper highlights the importance of experiential appreciation (EA) as one of the key health protective or restorative inner resources sustaining the process of recovery or healing from traumatic/adverse experiences as well the adaptive/proactive coping in various life situations. The ability to connect things (in the form of comprehension, purpose and mattering) is tied to the appreciation of the lived experience to develop a more nuanced yet dynamic understanding of the meaning in life variable. The main purposes of this research were to design and to implement a humanistic-experiential scenario based on the experiential expressive-creative techniques (creative meditation, guided imagery, drawing, and music) to increase the level of experiential appreciation as well as the general meaning in life state. Statistical analyses (Paired Samples T Test) confirmed the efficiency of the experiential scenario. Consistent with other recent studies, our findings suggest that simply appreciating one`s experiences can facilitate the conscious access to the resource of confidence that life is worth living, a resource that emphasizes growth and personal development and not a simple reducing symptoms approach.

(50) PHOSPHATIC NANOBIOMATERIALS WITH METAL-OXIDE HETEROJUNCTIONS - PHOTOCATALYSTS FOR WASTEWATER TREATMENT

Roxana Ioana MATEI (BRAZDIS)[1,2,*], Maria GRAPIN[1,2], Valentin RADITOIU[1], Anda Maria BAROI[1,3], Toma FISTOS[1,2], Ioana Silvia HOSU[1], Irina FIERASCU[1,3], Radu Claudiu FIERASCU[1,2]

[1]National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM, 202 Spl. Independentei, 060021, Bucharest, Romania

[2]University "Politehnica" of Bucharest, Bucharest, 1-7 Gh. Polizu Str., 011061, Romania

[3]University of Agronomic Sciences and Veterinary Medicine of Bucharest, Bucharest, 59 Marasti Blvd., 011464, Romania

* Corresponding author: roxana.brazdis@icechim.ro

A common challenge for the scientific community is the uncontrollable pollution of water resources as a result of the development of industries, agriculture and other human activities. Most of the contaminants detected in wastewaters are ecologically persistent and resistant to conventional water treatment processes and can cause problems for the ecosystems and finally to the human health. The project aims to develop an innovative technology for the elimination of organic pollutants, particularly dyes, originating from various effluent-generating industries, using a phosphatic nanobiomaterial, obtained from natural resources, such as eggshells, animal/fish bones, with photocatalytic properties enhanced through modification of its surface with different metal oxides. The project aims at: 1) Synthesis and characterization of phosphate nanobiomaterials for using them as photocatalysts with metal-oxide heterojunctions; 2) optimization of the synthesis parameters and the photocatalytic process; 3) demonstration of the nanobiomaterials efficiency obtained in the treatment of waters contaminated with organic pollutants (particularly dyes); 4) choosing the nanobiomaterial with the highest efficiency in the depollution

process. The targeted main characteristics of the developed materials are: a) high photocatalytic activity for dyes' photodegradation from model samples of contaminated water; b) high stability for their reuse; c) easy integration into a water treatment technology; d) low costs involved. The developed materials will provide a viable alternative to the current depollution strategies.

Acknowledgments
The authors gratefully acknowledge the support of the Ministry of Research, Innovation and Digitization through Program 1 - Development of the national research-development system, Subprogram 1.2-Institutional performance- Projects to finance excellence in RDI, Contract no. 15PFE/2021 and INCDCP-ICECHIM Core program PN 23.06.01.01 (AQUAMAT). The support provided by a grant of the Ministry of Research, Innovation and Digitization, CCCDI—UEFISCDI, project number PN-III-PN-III-P2-2.1-PTE-2021-0309, within PNCDI III, is also gratefully acknowledged.

(51) DOSE DEPENDENT EFFECTS OF TWO POLYMERIC MATERIALS AND SOME SIMILARITIES WITH DIFFERENT TYPES OF DRUGS

Alexandra SAVUCA[1,2], Ionut-Alexandru CHELARU[1,2], Alexandrina-Stefania CURPAN[2*], Alin Stelian CIOBICA[3,4,5], Mircea Nicusor NICOARA[1,3]

[1] Doctoral School of Geosciences, Faculty of Geography and Geology, "Alexandru Ioan Cuza" University of Iași, Carol I Avenue, 20A, Iași, Romania

[2] Doctoral School of Biology, Faculty of Biology, "Alexandru Ioan Cuza" University of Iași, Carol I Avenue, 20A, Iași, Romania

[3] Department of Biology, Faculty of Biology, "Alexandru Ioan Cuza" University of Iași, Carol I Avenue, 20A, Iași, Romania

[4] Academy of Romanian Scientists, Splaiul Independentei nr. 54, sector 5, 050094 Bucuresti, Romania

[5] Center of Biomedical Research, Romanian Academy, Iași, B dul Carol I, no 8, Romania

* Corresponding author: andracurpan@yahoo.com

Polymeric materials become of a crucial interest in the research area during the recent years with the increase of production of these materials at the worldwide level not always followed by their possible detrimental effects. Therefore, in the present study we analyzed the different effects of polymeric materials with various exposure times. Our results focused on some general effects in terms of anxiety and swimming performance during 120h of exposure and repeated multiple doses of both Polyethylene and Polypropylene microplastics. Polyethylene showed an anxiogenic potential, while Polypropylene showed an anxiolytic potential at the first two doses. In terms of swimming performance, an increase of specific parameters was observed throughout the repeated doses in the case of Polyethylene and on the opposite pole, in the case of Polypropylene they decrease. These results were compared with those from the specialized existing literature on the effects of some of the most common hallucinogenic and psychoactive substances. Our results

highlight that the mechanism of action of the aforementioned materials is different and show toxic effects from the first dose. Polyethylene has a similar outcome to the one in the case of some substances, especially hallucinogenic, such as LSD, mescaline, MDMA, phencyclidine, and nicotine. Whereas Polypropylene has a similar effect as in the case of psychoactive drugs, cannabidiol, tetrahydrocannabinol but also MDMA at certain doses. Bases on these observation, further studies should be conducted on the similarities in detrimental effects.

(52) *RANUNCULUS REPENS* L. - A SPECIES WITH THERAPEUTIC POTENTIAL

Liliana Cristina SOARE[1], Oana Alexandra DRĂGHICEANU[1,*], Codruța Mihaela DOBRESCU[1], Anca Nicoleta ȘUȚAN [1],
[1]Department of Natural Sciences, University of Pitești, Târgul din Vale 1, 110040 Pitești, Romania
* Corresponding author: oana.draghiceanu@upit.ro

Ranunculus repens (creeping butter cup) is a species less known for its therapeutic potential and little investigated in terms of bioactive compounds. In the *Ranunculus* species, compounds from the category of flavonoids, phenolics, alkaloids, triterpenoids and saponins, lipids, volatile compounds, and other metabolites were identified. Pale yellow essential oils were hydrodistilled from the aerial part of the *R. repens* species, the extraction yield obtained being superior, compared to that reported for other *Ranunculus* species. The essential oil contains significant amounts of hexadecanoic acid, phytol, octadecadienoic and octadecatrienoic acids. Hydrocarbons, carbonyl compounds, fatty acids, esters, monoterpenoids, sesquiterpenoids, diterpenoids, and other compounds were also identified. Other research carried out on *R. repens* indicates the isolation of three phenolic compounds, urease inhibitors, methyl 3,4,5-trihydroxybenzoate, R(+)-4-methoxydalbergione, R(+)-dalbergiphenol, with an important role for treating some conditions of the urinary and digestive system. Antidiabetogenic and cytoprotective potential has been reported for flavonoids and quercetin obtained from young leaves, and antibacterial activity for a series of compounds isolated from *R. repens* roots.

Acknowledgments
This activity was carried out with the support obtained through project number PN-III-P4-ID-PCE-2020-0620, within PNCDI III, a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS– UEFISCDI.

(53) THE IMPACT OF THE COVID 19 PANDEMIC ON THE HEALTH STATE OF THE ARGESIAN POPULATION

Monica Marinela TÂNȚU[1], Consuela DICU[1], Manuela CIUCUREL[1], Constantin CIUCUREL[1], Elena Ioana ICONARU[1], Sorina HONTARU[1], Cristina PONEPAL[1], Ana Cătălina TÂNȚU[2], Alina PAUNESCU[1*]
[1]University of Pitești, Faculty of Science, Physical Education and Informatics
[2]University of Medicine and Pharmacy Carol Davila, Bucharest
* Corresponding author: alina_paunescu@yahoo.com

The COVID-19 pandemic has generated a human and economic-financial crisis with a large global impact. Its consequences are multiple, on yet unknown terms and of different intensities. The greatest pressure was exerted on the health system, which had to cope with the large number of patients, the increased mortality, the lack of predictability regarding the duration, effects and the best way to manage the pandemic, the need to find effective and available therapeutic regimens , to implement coherent and concrete measures, with increased efficiency, to prevent the spread of SARS-COV-2. The impact of the pandemic was highlighted first of all at the level of the population's health, with the social and economic-financial sectors being subsequently affected.
Purpose: to identify the intensity of the pandemic at the level of Argeș county, expressed by the prevalence of cases of illness and deaths.
Material and methods: retrospective study on the cases of Covid-19 registered at the level of Argeș county and the cases of death generated by this pathology, using distribution criteria by categories of age, sex, environment of origin, comorbidities.
Results: 46776 Covid-19 cases were registered in 22 months of the pandemic, with a preponderance of female patients (53.67%), from the urban environment (60.37%), most cases being in the range aged 40-49 years. In the case of the 1987 deaths, men were predominant (57.78%), and the most affected age range was 70-79. Deaths were

favored by the presence of comorbidities, such as hypertension, diabetes, obesity, renal failure, neoplastic disease, their frequency being higher after the age of 60.

Conclusions: The Covid-19 pandemic had a major impact on the state of health of the Argeş population.

Acknowledgments

The study was carried out with the support of the project CIPCS 2022: Campaign efficiency of antiCovid vaccination at the level Argeș county.