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(B-01) BIOLOGIAL ACTIVITY OF ALKALOIDS DERIVED FROM RANUNCULACEAE PLANTS

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Many species of the Ranunculaceae family are known as ornamental, medicinal and poisonous plants. The biological activity and therapeutic implications of the secondary metabolites contained in these plants are of real interest for obtaining natural products that can be further developed to improve the quality of life and for the economic benefit of wide society. Among the secondary metabolites of Ranunculaceae, alkaloids have been shown to be excellent antimicrobial, antiparasitic, anticancer, anticonvulsant, cardioactive, antioxidant, analgesic and anti-inflammatory agents. Due to their toxicity, alkaloids are an important part of the plant's defense system against pathogens and predators. In vivo, in vitro and in silico studies on the optimal dose, exposure time, metabolism, accumulation, biotransformation, monitoring of enzymatic activity and gene expression, and the pharmacological properties of alkaloids have been particularly widespread in recent decades. A comprehensive review of the most relevant research on the bioactivity of alkaloids derived from various species of the Ranunculaceae family is presented here.

Acknowledgments

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(B-02) *PSEUDORCHIS ALBIDA* (L.) Á.LÖVE & D.LÖVE - A NEW ORCHID SPECIES TO ROMANIAN FLORA

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In this study we present the first confirmed record of *Pseudorchis* albida, in Romania. The population was found and digitally photographed for the first time in June, 2020, within Terra Siculorum, one of the Natura 2000 protected areas, known as Harghita Mădăras, ROSCI00090. The area is very famous for its rich orchid flora. Pseudorchis is a monospecific genus that has only one representative, Pseudorchis albida. This is a palearctic species, covering boreal alpine, subalpine and temperate zones, from Europe to the Russian Far East, to the Northern Urals and Kamchatka and from Eastern Canada to Greenland, but not in Siberia. In Romania, the genus is represented by *Pseudorchis albida* and by one of its two subspecies, Pseudorchis albida subsp. tricuspis. The other representative/subspecies, Pseudorchis albida subsp. straminea is mostly restricted to cold-temperate and palearctic areas of Eurasia. Based on the small distribution area and the small number of individuals, Pseudorchis albida subsp albida should be classified as Critically Endangered (CR), in Romania. Considering its various potential threats such as destruction or degradation of habitat, the anthropic factor - tourism and uncontrolled grazing, conservation measures should be taken in consideration, which may ensure the long-term persistence of this orchid.

(B-03) HEAT STRESS-INDUCED ALTERATIONS IN ANTIOXIDATIVE ENZYMES OF SOME PLANTS OF CUCURBITACEA FAMILY

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The effects of high temperatures on melon cvs. Miranda and Poli, watermelon cv. Crimson Tide and zucchini cv. Asma leaves. The leaves obtained from plants were subjected to 35, 40, 45, 50, 55 and 60°C temperatures with gradual increments every 30-minutes. Samples, obtained at each treatment, were analyzed for ascorbic acid content. NADP(H) oxidase. catalase. gluthatione reductase. peroxidases activities and isoperoxidase patterns. The ascorbic acid content slightly increased parallel to temperature increment in zucchini but did not change in watermelon and in both melon cultivars. Melon cv. Poli exhibited comparatively less oxidative damage than cv. Miranda with a lower NAD(P)H oxidase activity. Heat stress induced NAD(P)H activity in watermelon and zucchini comparing to control plants. Results revealed that antioxidative enzyme activities were increased generally up to 50°C then decreased gradually in melon cultivars. Besides cv. Poli generally had higher enzyme activities than cv. Miranda. The activity of catalaes become prominent in watermelon while the activity of ascorbate peroxidase become prominent in zucchini. Acidic isoperoxidase bands with different relative mobility values were found in all species. Besides, basic isoperoxidase band could not be determined in both melon cultivars and watermelon while a basic isoperoxidase band was found in zucchini.

(B-04) RESEARCH ON THE ENTOMOFAUNA OF ORTHOPTERA IN SOME VEGETABLE CROPS IN SOUTHERN OLTENIA

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Orthoptera comprise an order of common insects, most of which are phytophagous, but there are also predatory orthoptera.

They are found all over the world and adapt to the environmental conditions in which they are found.

Orthoptera insects are pests of vegetable plants, destroying large areas, so vegetable growers are familiar with them.

The research was carried out in the Amărăștii de Jos stationary in 2020 in vegetable crops.

The aim of the research was to identify orthoptera species in vegetable crops and two methods were used to collect them: the beer trap method and the Barber soil trap method).

Orthopteran insects were identified with the help of specialized determiners, then classified by family down to species level.

Orthoptera currently identified in the stationary studied included six species, namely: Gryllotalpa gryllotalpa, Gryllus campestris, Gryllus desertus, Acrida hungarica, Dociostaurus maroccanus and Calliptamus italicus.

The species with the most specimens is *Gryllotalpa gryllotalpa* (42 specimens) and the species with the fewest specimens is *Dociostaurus maroccanus* (3 specimens).

(B-05) DISTRIBUTION OF CESTODES IN FARMED COMMON CARP (*CYPRINUS CARPIO* L., 1758) FROM CYPRINID AQUACULTURE IN MACEDONIA

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The aim of this study was to determine the distribution of parasites of the class Cestoda in farmed common carp from the cyprinid aquaculture facilities in Macedonia. The representatives of the class Cestoda occur most often during the winter (in 3.47% of examined fish), followed by spring (1.80%) and autumn (1.73%). They haven't been identified during the summer. 20 fish out of 958 totally examined were infected with cestodes, with a mean intensity of 6.40. and a prevalence of 1.76%. In this study, the following parasite species established: Carvophyllaeus fimbriceps, were opsariichthydis *Bothriocephalus* and Ligula intestinalis (plerocercoid). Based on the total number of fish examined from cyprinid aquaculture facilities in Macedonia, the highest prevalence from the class Cestoda is determined by Bothriocephalus opsariichthydis (1.04%), followed by Caryophyllaeus fimbriceps and *Ligula intestinalis* with 0.55% each. The highest mean intensity with parasites of the class Cestoda is determined by Caryophyllaeus fimbriceps (9.40), followed by Bothriocephalus opsariichthydis (6.30) and Ligula intestinalis (3.60). The records of Carvophyllaeus fimbriceps in farmed common carp in the present study are considered as the first records for Macedonian aquaculture.

(B-06) ANATOMICAL ASPECTS OF THE STEM AND LEAF OF MENTHA x PIPERITA (LAMIACEAE)

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Mentha x piperita (Lamiaceae) has been known since ancient times due to its aromatic and therapeutic properties. The species was analyzed morphologically and anatomically. As biologic material, stems and leaves have been sampled from crops, during the vegetation period, before blooming. From an anatomical point of view, transverse sections were made through stems and leaves. At the level of the epidermis, both in the stem and in the leaf, the secretory and the tector trichomes were highlighted. The foliar limb is hypostomatic, with stomata in the inferior epidermis, the stomata being of the diacitic type. The mesophilus of the foliar is bifacial, having palisadic tissue whit a single layer of cells, located under the superior epidermis and lacunar tissue, located under the inferior epidermis.

(B-07) CHARACTERIZATION IN TERMS OF COMPOSITION AND PHYTOTOXICITY OF AQUEOUS SPORES EXTRACTS

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In this study, we used aqueous extracts of fern spores (*Asplenium scolopendrium* and *Dryopteris filix-mas*) and solutions of AgNO₃ and HAuCl₄ for the synthesis of bimetallic nanoparticles Au:Ag in different proportions (1:1 and 1:10). For the characterization of the extracts with or without bimetallic nanoparticles we applied Fourier transform infrared spectroscopy (FTIR). The spectral measurements were made using a FTIR Jasco 6300 spectrometer with an ATR accessory equipped with a diamond crystal (Pike Technologies). Phytotoxicity was tested using *Pisum sativum* seeds. Each extract was tested in 2 dilutions: 1:10 and 1:100, and for Control we used distilled water. The parameters that we determinate were the growth of root and stem and fresh biomass.

In extracts with nanoparticles, the carbonyl group at 1635 cm⁻¹ shows an increased intensity as a result of the capture/reduction of the metals. It was also confirmed that the carbonyl group from the protein and amino acid had stronger ability to bind with metal nanoparticles or act as stabilizing agents. In the phytotoxicity test better results were recorded for variants with *A. scolopendrium* extracts 1:10 dilution, where was observed a root and stem growth stimulation. The influence of extracts on fresh biomass was smaller than on root and stem growth.

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(B-08) EFFECT OF KINETIN AND WATER QUALITY ON GROWTH AND ACTIVITY OF POX & CAT IN SPINACH (SPINACIA OLERACEA L.) UNDER SALT STRESS

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Soil salinity reduces water availability of plant roots via negative (low) osmosis potential, as well as decrease of germination dynamics of plant seeds by ionic toxicity of Na and Cl, Significant differences in fruit-set, vield, photo synthetic rates, stomata conductance, total chlorophyll content, proline, In general, salinity affects almost every aspect of the physiology and biochemistry of plants. This experiment was conducted on a private farm in Babylon Governorate at the period from 1/10/2013 to 15/5/2014, to study effect of Kinetin treatment with three concentrations (0, 20 & 40 mg /liter) and the quality of irrigation water in three levels (1.3, 5 & 10) dS.m⁻¹, the water salinity increased electrical conductivity of the soil ,POX and CAT activity, sodium and proline contents in leaves, resulting in decreased growth and leaf contents of NPK, The poultry and Kinetin applications alleviated negative effects of saline water by increasing dry weights of shoots and NPK contents in leaves with a reduction of POX and CAT, reduction of sodium and proline contents in leaves.

(B-09) PHYSIOLOGICAL EFFECTS OF HIGH TEMPERATURE STRESS IN SOME CUCURBIT PLANTS

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Some cucurbit seedlings (Cucumis sativus L., Cucurbita pepo L., Cucumis melo L. and Citrillus lanatus L.) were used for investigating some physiological changes and protein patterns under heat stress in plants. Leaf samples were exposed to high temperatures as follows 35, 40, 45, 50, 55 and 60°C. Percentage of ion leakage, chlorophyll content, leaf relative water content (RWC) and loss of turgidity, total soluble protein (TSP) content and protein profiles were determined in leaf samples kept at each temperature stage for 30 minutes. Ion leakage was increased especially 55 and 60°C in all cucurbits parallel to the temperature increasement. Total chlorophyll content was decreased slightly in both cucumber cultivars, zucchini, in both melon cultivars and watermelon due to high temperatures. The RWC of cucurbits was decreased on the contrary of the loss of turgidity which was parallel to the increment of temperatures. While the TSP content in cucumber was decreased with temperature increasement, it was not changed in zucchini and watermelon. In melon cultivars TSP was not noticeably changed until 55°C, but significantly decreased at 60°C. When the SDS-PAGE profiles of cucurbits were examined, many protein bands were observed with sizes ranging from 6.5 kDa to 211 kDa.

(B-10) OBSERVATIONS REGARDING THE BIOLOGY AND THE ECOLOGY OF THE SPECIES *TURDUS PILARIS* LINNAEUS 1758 IN THE WESTERN HALF OF ROMANIA

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The paper presents the results of the researches performed by the authors between 2000-2019 regarding the biology and the ecology of the species Turdus pilaris L. in the western half of Romania. The extension of the territory, breeding, clutch size, behaviour, number of generations, the phenology and food were studied. The height of nests above the ground varied till to 20 meters in a different trees. The nest is cup - shaped and the material of construction is extremely different : moss, roots, dry twigs, ground mixed with grass, herbs. It presents 2 -3 yearly generations, a complete clutch consists of 5-6 eggs. The post – embrionic development lasts 12 -16 days. The phenology is different : in high hilly and the mountainous areas the species is sedentary, in low hilly and plain areas the species is partial – migratory or passage or in many times winter visitor. The food is extremely different: insects, fruits, worms, spiders, molusca, little mammals.

(B-11) VARIABILITY OF SUNFLOWER HEAD/CAPITULUM BY NEW MORPHOLOGICAL CHARACTERS

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New studies on the morphological characteristics of sunflower plants could provide new systems and directions in the complex progress of the future improvement of hybrids. Through the complex (Encheva & Shindrova, 2014) and wide genetic dowry together with the concrete cultivation conditions of the sunflower, the characteristic expression of the plant morphology takes place. In the recent improved Hysun 162 IT hybrid, some new characters were found, specific to the semi-early maturity group. Thus, the diameter of the sunflower head/capitulum had an average of 17 cm. The weight of the sunflower head was 105 g together with the achenes produced and only 39 g empty head, without achenes. The average of number of achenes/ head was 1470, and their weight was 65 g. The percentage of empty achenes was 2-3%, and the mass of one thousand seeds was on average 44 g. The seeds had a length of 10 mm and width of 5 mm. Positive correlations were generally obtained between the morphological characters of the sunflower head. Though this study carried out on the components of the heads of this new sunflower hybrid, a good adaptability to the current zonal agriculture was found.

(B-12) ISOLATION OF ANTIBIOTIC PRODUCING BACTERIA FROM SOIL

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Antibiotics are a major secondary metabolite produced by a wide range of bacteria. The microbes developed various antibiotics that could be used to treat various infectious diseases. Are useful In vitro isolation, the culture and care of bacteria is quite simple and we can easily improve their stress. The main soil pathogens of the Bacillus species are caused by important antibiotics such as bactericidal Endospores produced by the Bacillus species are very resistant. They are always found to inhibit the growth of other microbes. In the present research study, soil bacteria with antimicrobial activity have been screened and isolated. Subsequently, various pathogenic bacterial lawns was prepared to check the antimicrobial activity against various pathogens. Different zones are observed against different pathogenic bacteria. Comparison of antimicrobial activity of soil isolation with different antibiotic discs as well as various pathogenic bacteria. A clear zone of soil isolates of 5 mm, 15 mm, 21 mm, 12 mm, 30 mm, 32 mm and 40 mm against germs or pathogenic bacteria. The zones produced by antibiotic discs against pathogenic bacteria were zones of 5 mm, 10 mm, 12 mm, 15 mm, 20 mm and 21 mm observed

(B-13) IDENTIFICATION OF CAUSAL AGENT(S) OF CHERRY BACTERIAL CANKER IN MARMARA REGION OF TURKEY

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Bacterial cancer diseases of cherry (*Prunus avium* L) caused by *Pseudomonas syringae* (*P. syringae*) is one of significant diseases in fruit producing areas of the World and can cause major economics losses.

So, the survey study was conducted to obtain the *P. syringae* pathovar(s) in Marmara Region of Turkey. Tress with symptoms of bacterial canker were found in six cities of nine cities visited and ninety-five of hundred-seven orchards between 2016 to 2018 years in Marmara Region. Gram negative bacterial isolates were isolated from margin of necrotic tissue. All isolates were based on pathogenicity, LOPAT, and GATTa tests, 63 isolates were identified as *P. s.* pv. *syringae*. For molecular study, showed that all isolates produced on approximately 752 bp DNA fragment in PCR performed with primer set *syrB1-syrB2*. However, the results of MALDI-TOF MS analysis, the isolates were identified as *P. s.* pv. *syringae*.

According to the obtained results, it was concluded that *P. s.* pv *syringae* cause necrosis of cherry trees and its prevalence rate was determined as 67% in Marmara Region of Turkey.

(B-14) EXTRACTION PROCESS OPTIMIZATION FOR VEGETABLE OILS RICH IN BIOACTIVE COMPOUNDS

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Vegetable oils such rapeseed and soybean oils are characterized by high levels of monounsaturated (MUFA) and polyunsaturated (PUFA) fatty acids, tocopherols and minor compounds such as sterols and carotenoids. The total antioxidant capacity of these oils is higher than other vegetable oils.

Extraction of bioactive compounds can be done using classical or non-conventional methods. The latter, known as green extraction methods, are based on alternative solvents and/or more efficient ways of introducing energy into the system (ultrasounds, microwaves, high gravitational fields) and used to obtain high quality products with lesser energy consumption (Selvamuthukumaran and Shi, 2017).

Several differences in the compositions of the fatty acids, the bioactive compounds and the antioxidant capacities were observed when these oils were assessed.

In this context, ultrasound extraction of the vegetable oils rich in bioactive compounds has been studied. Both Box-Behnken design of experiment technique and the Response Surface Method were used first, to investigate the influence of the reaction parameters upon the yield of the process and, second, to optimize the operating conditions such as to maximize the yield. The operating parameters of choice, subject to investigation, were the solvent concentration, ratio of solvent to solid, time.

Regarding the composition of the oils studied, the rapeseed oil contains the highest amount of MUFA and tocopherols, while soybean oil contains the highest amount of PUFA and carotenoids. These compositions were obtained using hexane and ethanol as the extraction solvents in the ultrasonic field.

The analysis of the vegetable oils and bioactive compounds was performed using LC-MS/TOF (Agilent 6224) GC–MS/MS TRIPLE QUAD (Agilent 7890 A).

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(B-15) TOXIC SIGNATURES OF THE MOST PREVALENT MICROPLASTICS ON MAIZE

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Synthetic microplastics (MPs) which are today's pollution icons found even in the natural Arctic/Antarctic realms reflects the gradually growing environmental challenge in this area. Despite their cellular effects have widely been reported in several aquatic organisms, plants have not received widespread attention. Thus, here we report the potential toxic signatures of the most common polymer types (polyethylene (PE), polypropylene (PP), polyvinylchloride (PVC), polyethylene tetraphthalate (PET) and polystyrene (PS)) at biochemical and transcriptomic levels. The effects of two different particle size (75-150 µm and 150-212 µm) were analysed. The membrane stability index, photosynthetic capacity and H2O2 production showed that smaller particle size (75-150 µm) particularly mixed MPs resulted in physiological imbalance in maize seedlings while bigger particles showed almost no injurious effects. Peroxidase1 and one of the molecular chaperon genes (Heat Shock Protein1) which was selected as MP sensory cues was found to be co-ordinately turned-on and activated against MPs caused putative xenobiotic stress in the seedlings exposed to 75-150 um-sized various MPs.

(B-16) ANTHROPOLOGICAL ANALYSIS OF SKELETAL REMAINS DISCOVERED IN MOȘNIȚA VECHE (TIMIȘ COUNTY, ROMANIA)

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Well preserved skeletal material from the archaeological site "Objectivul 16 – Dealul Sălaș" is anthropological analysed. The site is located in Mosnita Veche, Timis County (Western Romania) and the studied remains were excavated in 2020. According to the archaeological findings, the skeletal material is Eneolithic in age, which in our geographical area of interest it spanned around 4500 BC to 2800 BC. Macroscopic analyses were used to evaluate the specific morphological traits of the bones to determine sex, age at death, pathologies and traumas. The length of the long bones was used to estimate the heights of each individual. The studied material comprises six individuals as follows: three males, two possibly females and one whose sex could not be identified. Their age at death is estimated to be between 20 and 50 years old, and their average hight is estimated at 162 ± 4.7 cm. The most common identified pathologies are cavities, dental calculus and cribra cranii. Skeletal trauma was identified on the skull of two individuals, one of which could be either of medical origin or related to a magic ritual, being a possible new case of symbolic trepanation. This research aims to bring new data to a chrono-cultural framework that lacks in physical anthropology analysis.

(B-17) PHOTOSYNTHETIC INOCULANTS TO PROMOTE SEED GERMINATION AND PLANTULE DEVELOPMENT

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Microalgae and cyanobacteria are a potentially sustainable alternative for the improvement and protection of agricultural crops. Mineral fertilizers raise environmental and health issues, and current agricultural practices depend to a large extent on the application of fertilizers and pesticides.

In this study, we examined the effect of cyanobacteria and microalgae on tomato seed germination, seedling growth, green and dry biomass, gas exchange from leaves (plant photosynthesis and transpiration), and the chlorophyll content of leaves (chlorophyll a, b and carotene), as well as on the soil respiration process.

The obtained results highlight higher values of green and dry biomass in the variants inoculated with cyanobacteria and microalgae compared to the control variant and comparable to the values obtained in the technologically fertilized variants. Tomato seedlings showed higher photosynthesis values compared to the control and compared to the technologically fertilized variant in the soil of the pea plot (7.06 μ mol CO₂ / m² / s, compared to 6.33 μ mol CO₂ / m² / s in the control variant and 7.06 μ mol CO₂ / m² / s in the technologically fertilized version). And in the case of the soil in the museum plot, the values of photosynthesis in the version with the inoculum of cyanobacteria and microalgae were statistically assured compared to the control.

(B-18) BIOLOGICAL CRUST FORMATION AT LABORATORY LEVEL WITH CHLORELLA SOROKINIANA UTEX 1230

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Biological soil crusts (biocrusts) are surface community of nonvascular photoautotrophs living on soils worldwide (Belnap and Budel, 2016) covering aprox. 12% of the Earth's terrestrial surface (Rodriguez-Caballero et al., 2018). Biocrusts fix significant amounts of carbon and nitrogen, are involved in stabilizing soils (Belnap & Budel, 2016), affect plant growth and soil fertility and provide habitat for below ground communities (for more details see Sasha et al, 2019). The aim of this paper is to describe a protocol to develop a rather continuous biocrust at laboratory level using the green microalga Chlorella sorokiniana UTEX 1230, in order to further test the potential of this biocrust to sustain seed germination, plant growth and soil fertility. The biocrusts were formed on sandy soils of the southwest of Oltenia which are poorly supplied with organic matter, nitrogen, phosphorus, potassium and have very high permeability, even excessive for water and air and a reduced water retention capacity. The experiments shown that soil humidity is a key factor involved in the formation of biocrust at laboratory - level, using distilled water.

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(B19) PHYTOTOXICITY OF EXTRACTS WITH AND WITHOUT SILVER NANOPARTICLES ON SPORE GERMINATION IN ASPLENIUM SCOLOPENDRIUM AND DRYOPTERIS FILIX MAS

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Spores represent the starting point of the gametophytic generation in the life cycle of ferns. The spores and gametophyte formed from their germination are easy and extremely useful experimental materials in research. In this study, we established the influence of extracts obtained from leaves of 2 species of fens on Asplenium scolopendrium spores gemination. For the culture media, we used Knop solution and reduced extracts, with and without Ag nanoparticles (NP). obtained from leaves of Asplenium scolopendrium (As) and Dryopteris filix-mas (Dfm). At the fist monitoring the percentage of germinated spores at the Control was 55%, and at the variants As 1:100 (Fig.5) and Dfm 1:100 didn't exceed 5%. Germination was not observed in the other variants. In the second week, in addition to the germinated spores, filaments of 2-3 cells were observed at Control, Dfm 1:100 and As 1:100. In the variants with extract and nanoparticles (As NP, Dfm NP) regardless dilution - the spores didn't germinate.

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(B-20) PHYSIOLOGICAL EFFECTS OF HIGH TEMPERATURE TREATMENTS ON TOMATO LEAVES AT TWO DEVELOPMENTAL PHASES

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The study was conducted to investigate the effects of high temperatures on three tomato cultivars at first bloom and yield stages. The leaves were subjected to high temperature stress at 35. 40, 45, 50, 55 and 60°C with gradual increments every 30-minutes in both stages. Samples were analyzed for total chlorophyll (Chl), carotenoid, ascorbic acid (AsA), glutathione (GSH), total soluble protein (TSP) contents. Besides, protein profiles were determined with SDS-PAGE. Heat stress decreased Chl content in both stages, while it was higher in first bloom stage than in yield stage. Whereas carotenoid content increased in both stages. The AsA and GSH contents were higher in yield stage than in first bloom stage. Heat stress, generally reduced AsA content, while increased GSH content. It was observed that the effect of cultivars and temperature treatments on the TSP content was different in both periods. In addition, TSP content had decreased with increasing temperatures, while many protein bands had been observed in SDS-PAGE with sizes ranging from 13 kDa to 89 kDa according to treatments.

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(B-21) DETERMINATION OF TOTAL PHENOLIC CONTENTS IN *VIBIRNUM OPULUS* L. GENOTYPES SELECTED FROM KAYSERI-DEVELI*

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Viburnum opulus L. belongs to the Caprifoliaceae family, and Europe, North West Africa, Turkistan and Canada are reported as its homeland. It is especially valuable for the vitamins, minerals, antioxidants and other bioactive substances contained in its fruits. This fruit species is among the naturally grown fruits in Anatolia. Due to the minerals, vitamins and bioactive substances it contains. cultivation studies are carried out in some countries. It is reported that this fruit improves blood pressure and is beneficial against ailments such as cramps and migraine. It is also stated that the fruit juice is used in the treatment of kidney, liver, bile and ulcer diseases and can be used as a diuretic. In addition, gilaburu fruit has been reported to be used in asthma, epilepsy, high blood pressure, heart ailments, rheumatism, nervous disorders and some skin problems. This species is one of the fruits that grow naturally in Anatolia, is consumed widely in Kayseri, not known more in other parts of Turkey. This species has mostly adapted to the continental climate with hot and dry summers and cold winters. As a plant, it is mostly in the form of a bush, sometimes gaining the appearance of a small tree. The leaves are opposite, cross with the next, notched edges, 3-5 lobes. In this study, total phenolic substance contents of gilaboru genotypes selected from Develi region of Kayseri were determined and differences between genotypes were investigated in terms of this feature. The determination of total phenolic content was carried out the method proposed by Singleton and Rossi (1965) with some modifications. According to the results obtained, the total phenolic content of genotypes was determined as 4500-6000 mgGAE / L. This situation reveals that the genotypes are rich in terms of the substance studied and the importance of evaluating these characteristics.

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(B-22) THE INFLUENCE OF VEGETAL EXTRACTS AND NANOSTRUCTURED MIXTURES ON GRAPEVINE POLLEN GRAINS

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There is a growing interest in the selection of microalgae cells rich in oil inclusions, which could be further used as sources of lipids for biodiesel production or for nutritional purposes. One way to select this type of cells is to select low-starch colonies, the presence of starch (polysaccharides, in general) inclusions being often correlated with the presence of a large number of oil inclusions. The results obtained in our previous experiments in which we used iodine as a specific label for the starch content, allowed us to attempt the developing of a new selection protocol, without having to use replica plate method, which is time and material consuming. Our approach is based on the use of different dyes, more or less specific for polysaccharides, as markers for colonies with lower and higher starch content. Several dyes were used, as well as several ways to enrich the contact between the specific dye (at different concentrations) and the cells in the test colonies. This selection could also be useful for the selection of different microalgae suitable for wastewater treatment.

(B-22) COVID 19 - THE CHALLENGE OF CORONAVIRUSES

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About corona viruses many discusses were occur in the last two years because of Covid 19, the pandemic disease of our days. The Family of coronaviruses includes the positive sense single-stranded RNA viruses with helical symmetry of enveloped nucleocapsid, which determine respiratory or intestinal infection in humans and animals and causing disorders of different organs. The name of viral genus derives from their surface with club-shaped spikes like solar corona.

SARS-CoV-2 causes the COVID-19 disease and spread all over the world. The scientific communities analyse this virus and investigate the effects about the human organisms. Till May 2021, 1055265 cases of infection were registered in Romania. In Arges County the number of infections was 26476 in the same period.

(E-1) INVERTEBRATES OF CONSERVATIVE INTEREST FROM PLATFORMA COTMEANA, A ROMANIAN NATURAL PROTECTED AREA

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Observations carried out in the protected area Platforma Cotmeana located in the south central region of Romania highlights three species of protected saproxylic beetles: Lucanus cervus, Cerambyx cerdo, and Morimus asper funereus. The good conservation status of the forest habitats leads to the presence of these species in most of the investigated areas. The predominant arrangement of forests on the slopes influences the density and size of the populations of these species. At the edges with secular trees it is found the association between L. cervus and C. cerdo species in which the European stag beetle dominates in proportion of 90 - 97.7%. The L. cervus -M. asper funereus association is also present but in a more balanced relationship. Our observations revealed the preference of *M. asper* funereus females for Fagus sylvatica in a percentage of 68.3% compared to other forestry species, given that beech forests have a share of 30% in the area. Although there is a good management of the forests by the forestry administration, the abusive deforestation at national level registered in the last years constitutes a serious threat for the conservation of the habitat of these species, even in the area that was the object of this study.

(E-2) PASTORAL DEVELOPMENT FOR THE FIGHT AGAINST DESERTIFICATION IN THE SOUTH ORAN STEPPE OF NAÂMA (ALGERIA)

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In the South Oran steppe of Naâma (Algeria), clearing, overgrazing and overexploitation of pastoral vegetation expose the steppe ranges to intense, harmful and continuous degradation through the accentuation of different processes of desertification, silting up and l 'erosion. To mitigate the degradation, actions and measures of rehabilitation and restoration will be considered using the most appropriate pastoral development techniques to stop and limit the progression of these ecological damage. The application of a strategy for the development of the steppe zone makes it possible to develop development programs taking into account the solution of all known problems by implementing an appropriate strategy within the framework of sustainable development. Regeneration is a means of preservation to safeguard biodiversity against the factors of destruction of the steppe ecosystem. Regeneration of rangelands by shrub planting, reseeding and / or defending usually requires sufficient time to rest in an arid environment. In order to preserve and develop routes that directly contribute to the improvement of pastoral activity, the following actions should be considered. maintenance and protection of existing vegetation and restoration of the plant cover in bare or degraded areas by integrated development

and restoration techniques; - monitoring of the climatic, hydrological or pedological and ecological situation of plants; - improvement and control of the use of fuel of vegetable origin (wood, charcoal) and search for alternative energy sources. - rehabilitation and restoration of steppe routes by implantation; areas of defenses to promote natural regeneration, the most suitable for inducing the natural biological rise of steppe rangelands and the organization of their exploitation by introducing an adequate system of rotation. Pastoral planting taking into account the judicious choice of plant species with an identified adaptation to environmental conditions such as resistance to drought. The creation of pastoral nurseries in order to have the plant material in sufficient quantities. The analysis of ecological data is certainly a prerequisite of the first order for understanding the functioning of ecosystems and for the development of the environment. Therefore, sustainable management of renewable natural resources is needed in areas severely degraded by desertification in order to save rangelands

(E-3) THE COMPOST, A SOURCE OF PLANT BENEFICIAL BACTERIA WITH BIOCONTROL POTENTIAL

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Recycling the agricultural organic wastes is a common activity. The resulting compost is usually rich in plant nutrients and beneficial microorganisms. However, compost properties greatly differ depending on the nature of the fermented biomass and fermentation processes. The aim of this study was to analyse the microbial load of three different composts of agricultural origin, in order to detect new bacterial strains with plant protection properties. Isolated bacteria were microbiologically characterized and evaluated for their potential to reduce soil-borne phytopathogenic fungi. Results showed a microbial load of approximately 10^6 CFU/g of compost. In the analysed samples it was revealed that as bacterial load increases, the fungal amount decreases. Analysing some newly isolated bacteria obtained from these composts, a good biocontrol potential against soil-borne pathogenic fungi was revealed. Some of the isolated bacterial strains revealed antifungal activity against Rhizoctonia solani and Sclerotinia sclerotiorum. These bacteria showed good colonisation capacity and lytic enzymes production, correlated to antimicrobial activity. These compost-originated bacteria reveal high potential in pathogens inhibition. Therefore, the analysed composts are recommended not only as soil fertility improvers, but also as potential suppressors of soil-borne pathogens. Results revealed these composts as source of plant beneficial bacteria with biological control potential.

(E-4) PRELIMINARY RESULTS ON THE ECOTOXIC EFFECTS OF SODIUM ALGINATE TO DUCKWEED (LEMNA MINOR L.)

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Sodium alginate is a sodium salt of alginic acid, a natural anionic linear polysaccharide. It is a cell wall component of marine brown algae, containing 30-60% of alginic acid. Thus, the main biological source of sodium alginate is represented by brown algae species such as Macrocystis pyrifera, Ascophyllum nodosum and Laminaria sp., but bacterial species, such as Pseudomonas sp. and Azotobacter sp., can also produce alginates. Alginate is composed of two repeating units, D-mannuronate and Lguluronate, which form homopolymeric blocks of either D-mannuronate, either L-guluronate, interspersed with alternating monomers, making alginate a linear binary copolymer. Alginate is extensively used for many biomedical applications, due to its biodegradability, low toxicity, biocompatibility, and mild gelation at addition of cations. This also might lead to the generation of possible alginate-based pollutants, making the assessment of its potential ecotoxic effects essential. The potential ecotoxicological effects of sodium alginate were assessed using a growth inhibition assay on common duckweed (Lemna minor L.) conducted in standard conditions. Ten concentrations of sodium alginate were tested: 10 mg/mL, 5 mg/mL, 1 mg/mL, 0.5 mg/mL, 0.1 mg/mL, 0.05 mg/mL, 0.01 mg/mL, 0.005 mg/mL, 0.001 mg/mL and 0.0005 mg/mL. The test was conducted using 35 duckweed fronds per replicate and it was conducted for 7 days. The results showed that the highest two concentrations inhibited the growth of duckweed mainly, the other concentration inhibiting the growth of duckweed less than approximately 20% compared to the control. The number of green fronds was plotted to obtain a dose-response curve and to calculate the EC₅₀ value of sodium alginate towards duckweed.

(E-5) DO POTENTIALLY POLLUTED WATER, SEDIMENT AND SOIL SAMPLES BY FORMER MINING ACTIVITIES FROM MOLDOVA NOUA AREA EXPRESS ECOTOXICOLOGICAL EFFECTS TOWARDS THE COMMON DUCKWEED? PRELIMINARY RESULTS

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The rivers and soils from the Moldova Noua area are potentially polluted by the former mining activities which created mining dumps that were abandoned after the closure of the mine, generating potential pollutants for the surrounding area. A preliminary duckweed growth inhibition test was conducted for the assessment of the ecotoxicological effects of the potentially polluted rivers and soils, by testing water, sediment, and soil samples that were collected in October 2020 from several sampling points, all in the area of Moldova Noua. The preliminary assay involved the exposure for 7 days of a total number of 10 duckweed fronds for each sample in order to determined which samples have toxic effects and for which it is necessary to perform further tests. The sediment and soil samples were diluted with culture media reaching a concentration of 1%, while the water samples were tested without diluting the samples. None of the tested samples showed ecotoxic effects to duckweed, some of the samples showing a slight reduction of green frond number, but no sample showed a significant ecotoxic effect. The information contained in this poster is / will be available in the funding project's Knowledge Base, along with many other important data that are specific to this project, the Knowledge Base being
accessible through the following link: <u>http://www.elearning-chemistry.ro/rosnet2/knowledge-base/</u>.

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(E-6) APPLICATION OF METAGENOMICS IN ECOLOGY: A BRIEF OVERVIEW

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Starting from the fact that in a microbial community even the concept of species is poorly defined and often debated, but closely related organisms tend to share a substantial amount of genomic sequences, together with a large number of physiological and biochemical properties, it was developed metagenomics. The discipline of metagenomics, defined as the genomic analysis of all microorganisms in a given niche environment, has evolved as an effort to find out more about the microbial diversity of natural environments, such as soil, seawater and the gastrointestinal tract of vertebrates and invertebrates. The purpose of this paper was to bring in front the discipline of metagenomics which will be used in many scientific areas in the future. Our paper represent a brief review of the literature available on the internet regarding the definition, description of metagenomics but also its possibilities of its application in ecology. Moreover, this paper contains the description of MG-RAST software as bioinformatics method that is suitable for usage of metagenomics in ecological studies.

(E-7) CHARACTERISTICS OF PLANT COMMUNITIES OF CRAMBE TATARIA SEBEÓK IN ROMANIA

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Crambe tataria is a protected species, considered thermophilic relict in Europe and steppe postglacial relict in Romania. In the past three decades, the size of C. tataria populations has been decreased significantly, and the geographical distribution of populations are fragmented. At present, not there are insufficient data on the ecocoenotic conditions of this priority species. The study aimed to identify the main plant communities with C. tataria and the relationships between its floristic composition and environmental The floristic composition was realized based on factors. phytocenological relevés from the field, according to the method of the school in Central Europe. The relationship between floristic composition and environmental factors was evaluated by detrended correspondence analysis (DCA) and canonical correlation analysis (CCA). The results showed that the phytocenoses of the associations in which C. tataria was identified are part of the Festuco-Brometea class and Molinio-Arrhenatheretea class. The floristic composition is influenced by bioclimatic, topographic and chemical factors of the soil.

(E-8) ZEBRAFISH EMBRYONIC DEVELOPMENT UNDER THE NICOTINE EFFECT

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Nicotine is an alkaloid that has influenced human activity since ancient times through its stimulating properties for the body and by inducing an addiction to it. In the twentieth century, studies have reported various adverse effects, harmful to the human body if used long-term. Today, nicotine is used more and more often in various industries, from pharmaceuticals to phytosanitary products. In the present study, the zebrafish (Danio rerio) was used as a test model, which is a perfect model due to its morphological properties such as rapid ontogenetic development, offers the possibility of easily observing all morphological elements, has a fast recovery capacity, no requires high maintenance costs. The presence of nicotine in the living environment of zebrafish, in different concentrations, showed both morphostructural changes such as spinal deviation, skin depigmentation, and behavioral changes such as inability to move in the water, gaining and maintaining weight in the aquatic environment.

(E-9) SESSILE OAK FOREST ECOSYSTEMS FROM TRANSYLVANIA IN THE CONTEXT OF CLIMATIC CHANGES

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Climatic modelling software was used in order to measure future changes in climatic conditions. The software HYPE can realize prognosis for certain climatic factors responsible for causing extreme climatic phenomena in forest ecosystems. It was applied to study sessile oak forest ecosystems from Transylvania. Sample surfaces were installed, inventoried and followed by simulations of two future climatic scenarios. Two such scenarios were chosen, namely the climatic scenario in which the gas effect concentration will increase moderately (rcp-4.5) and the climatic scenario in which the gas effect concentration will be accentuated (rcp-8.5). The data was then processed and which led to an analysis of the way in which future climatic changes will affect forest ecosystems located in the studied area.

After analyzing all three sessile oak stands, we can conclude that the Mediaş stand is the most vulnerable one to both climatic parameters.

Future climatic scenarios are necessary for other surfaces located in our country for the same species, as well as for others in order to have a bigger picture of future implications. The best management measures and decisions regarding the installment of future stands can consequently be taken based on these results.

(E-10) AILANTHUS ALTISSIMA (MILLER) SWINGLE– INVASIVE SPECIES IN THE FOREST HABITATS IN THE UPPER BASIN OF THE MOTRU RIVER

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Ailanthus altissima (Miller) Swingle is an invasive species found in forest habitats in Oltenia and beyond. The aggression and power of dissemination and development of this species is increasing. The thematic area provided in this paper is situated in the upper basin of the Motru river. Within this study had been aimed the identification and level of pressures and threats of the invasive species Ailanthus altissima in the forest habitats in the researched territory. These studies also noted the conservation status of the forest habitats in which this invasive species was encountered. In this area we identified this invasive species in the following forest habitats: 91E0* Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae), 91V0 Dacian Beech forests (SymphytoFagion), 9130 Asperulo-Fagetum beech forests, 9110 Luzulo-Fagetum beech forests, 91K0 Illyrian Fagus sylvatica forests (Aremonio-Fagion), 91M0 Pannonian-Balkanic turkey oak sessile oak forests. This species influence the successional dynamics and the floristic composition of the forest habitats, occupying increasingly more and more space.

(E-11) ARCHAEOLOGICAL AND GEOLOGICAL APPROACHES IN THE WORK ON THE PROJECT "MATERIALITY AND ANCIENT ENVIRONMENTAL KNOWLEDGE RECONSTRUCTION TROUGH ARCHAEOLOGICAL CHEMISTRY ANALYTICAL TECHNIQUES (RE:MATRIARCHES)

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The project objective is to obtain new data on material culture (archaeological synthetic materials – ceramic building materials, pottery, cement composites, and slags) and people's knowledge for the ancient environment (geological local raw materials used for building, production of materials, household items, technology development, etc.) in the area of the Sarnena Sredna Gora Mountain and southern foothills (Bulgaria). The accomplishment of the research goals would be made using three approaches, given by the project interdisciplinary. Archaeological and geological approaches will be applied to sample collection. The investigation of the composition and structure of archaeological and geological samples through the archaeological chemistry approach will be applied to achieve the final project aim.

Regarding the archaeological and geological approaches, there are no specific literature sources to use, which require to be created. Such approaches are essential as they carry out the activities for sample collecting, necessary to achieve the project objectives. These activities include fieldwork planning, fieldwork, and post-fieldwork. The created archaeological and geological approaches determine efficient and targeted work. A purposeful selection of archaeological and geological sites and collection of samples was made: (i) Archaeological samples from 23 sites and five archaeological periods. The samples are of all planned types – building ceramic (bricks and tiles), building materials (mortar and clay plaster), pottery (different vessel fragments), iron slags. (ii) Geological samples of all found localities of rocks and minerals predefined as possible raw material for archaeological samples production.

Such methodical work allowed us to create representative sample sets for investigations with archaeological chemistry analytical techniques. This basis provides an opportunity for adequate interpretation of analytical data to achieve the project objectives fundamental knowledge of material culture in different archaeological periods and people's knowledge of the ancient environment.

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(E-12) ASPECTS REGARDING THE EVOLUTION OF THE AQUATIC COMPLEX SOMOVA – PARCHEŞ

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The Somova-Parches aquatic complex is part of the floodplain of the Danube River, which in the past had an area of approx. 900,000 ha, of which the river meadow represents 480,000 ha and the delta approx. 420,000. These flooded regions were subjected, especially during the years 1965-1978, to a massive dam campaign that affected approx. 85% of the river meadow and almost 25% of the delta. Located between the localities of Isaccea and Tulcea, the aquatic complex Somova - Parches, is one of the few areas that have not been dammed, so that even today these shallow lakes are subject to annual floods of the Danube River. Today, out of a total of approx. 9170 ha of floodplain areas, between Isaccea and Tulcea, 2020 ha (22.00%) is represented by the water surface. The Somova - Parches aquatic complex consists of the following types of aquatic ecosystems: lakes, ponds, swamps, natural and anthropic canals for water supply and evacuation in the Danube River, as well as for achieving the internal connection between ponds. The comparative analysis of the current situation with the historical data provided by the maps and longitudinal and transversal profiles through the Somova - Parches aquatic complex (Gr. Antipa, 1910) shows a moderate fragmentation of aquatic habitats but an intense alluvial of them, compared to other complexes from the Danube Delta.

(E-13) THE EVOLUTION OF THE WATER TEMPERATURE IN THE PRUT RIVER IN THE LAST TEN YEARS

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Of the total length of 953 km, the Prut River has a length of 742 km on the Romanian territory, of which 60.7 km form the natural border with Ukraine, and the last 681.3 km form the natural border with the Republic of Moldova. Moving from a north-westerly to a southeasterly direction, the Prut River passes through a north-south difference in latitude of 2°47'35", from a latitude of 48°15'35" N to a latitude of 45°28 '00" N. The difference in altitude at extreme points of the Prut River is from 529 m in the north, in the Rădăuți-Prut hydrometric station and 279 m in the south, in the Oancea hydrometric station, so the difference in altitude is 250 m. This difference in latitude and altitude influences one of the important ecological parameters for an aquatic ecosystem, namely water temperature. Of the seven hydrometric stations on the Prut River (Rădăuți-Prut, Stânca downstream, Ungheni, Prisăcani, Drânceni, Fălciu, Oancea), three of them (Rădăuți-Prut, Prisăcani, Oancea) record daily air and water temperature. The records made during 2009-2018 show significant differences of this parameter that influence both abiotic and biotic processes. In the most northern hydrometric station, Rădăuți-Prut, located at km 652 from the confluence of the river Prut and the Danube river, the average of water temperature in the summer months (June, July, August) is between 200C and 250C, a maximum of 27.70C being reached on 14.VIII.2015. Instead, in the Oancea hydrometric station, located much further south, at km 79.2 from the confluence of the Prut River with the Danube river, the average of water temperature in the summer months (June, July, August) is between 50C and 200C, a maximum of 29.50C being reached on 10.VIII.2012. The multiannual average of June is 20.30C in the Rădăuti-Prut hydrometric station compared to only 16.70C in the Oancea hydrometric station. The multiannual average of July is 22.50C in the Rădăuți-Prut hydrometric station compared to only 18.90C in the Oancea hydrometric station. The multiannual average of August is 23.10C in the Rădăuți-Prut hydrometric station compared to only 19.10C in the Oancea hydrometric station. Thus, in the summer months the average of water temperatures are higher in the northern station, compared to the southern one. This situation is due to the fact that in the period 2016-2018, in the Oancea hydrometric station, average of water temperatures in the summer months is below 100C, a completely unusual situation in the history of recordings.

(E-14) THE CARRY OUT OF COMMERCIAL FISHING IN THE AQUATIC COMPLEX SOMOVA – PARCHEŞ

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The management of the fishery resource in the Somova - Parches aquatic complex is done by the Danube Delta Biosphere Reserve Administration (DDBRA). According to article 4 of Law no. 82/1993, management of the Danube Delta Biosphere Reserve is achieved through the Reservation Management Plan and the Reservation Regulation. In the Somova - Parches aquatic complex, which is an integral part of the Danube Delta Biosphere Reserve (RBDD), the fishing activity has three components: commercial fishing, sport fishing and family fishing, to which is added the scientific fishing. In order to have access to the fish resource for commercial fishing, commercial fishermen must meet the following conditions: use licensed fishing vessels: hold a commercial fishing permit: hold a commercial fishing authorization. The commercial fishing activity will be carried out by authorized persons or by associations, whose permanent domicile or headquarters is located on the territory of RBDD or in the neighboring localities. The commercial fishing authorization shall be obtained annually from the DDBRA and shall contain data on the identification of fishing vessels, the period of validity, the fishing area, the quota allocated by species, the landing points and centers of first sale, the identification data of the commercial fishermen and their fishing vessels. In the period 2016-2020, on the Danube sector between Cotul Pisicii (mile 75) and Ceatalul Izmail (mile 43), which totals about 60 km of river, activated a minimum of 128 commercial fishermen in 2019 and a maximum of 178 commercial fishermen in 2017. In the same period, in the aquatic complex Somova -Parches totaling about 2020 ha of water surface activated a minimum of 46 commercial fishermen in 2019 and a maximum of 55 commercial fishermen in 2016. Number of boats licensed for commercial fishing was slightly higher than the number of fishermen holding a fishing permit. The commercialization of the fish from the commercial activity in these fishing areas is made in three landing points, respectively first sale centers, located in the localities of Mineri, Somova, Isaccea.

(E-15) THE INFLUENCE OF METEOROLOGICAL AND TOPOGRAPHICAL PARAMETERS ON THE DISPERSION OF PM 10 AND CO POLLUTANTS

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At present, climate change is a global reality. One of its causes is the presence of pollutants in the atmosphere. Therefore, the purpose of this paper is to observe how the dispersion of pollutants is influenced by meteorological and topographic parameters. In order to carry out the study on the influence of synoptic conditions on the dispersion of air pollutants PM₁₀ and CO, a continuous monitoring of the two pollutants was needed for one year (from March 2020 to February 2021) at all six air quality monitoring stations located in Arges County. These data will be correlated with the climatological parameters Meteorological obtained from the National Administration. Using a numerical modeling program (SCREEN), it was performed a simulation of the dispersion of pollutants, determining the maximum concentration of the pollutant and the distance it reaches the ground, for several wind speeds, in all five classes of atmospheric stability.

(E-16) AIR POLLUTION METEOROLOGY. CASE STUDY: SO₂ AND NO₂ MONITORING IN ARGEŞ COUNTY

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Air pollution is one of the most dangerous forms of pollution, which can have disastrous effects on the environment. For example, pollution with sulfur oxides contributes to the formation of acid rain and nitrogen oxides promote the accumulation of nitrates in the soil. Meteorological factors, such as temperature, significantly influence the levels of pollution and the spread of pollutants in the lower atmosphere. Air pollution meteorology helps to understand how pollutants are emitted and dispersed in the ambient air. Therefore, the purpose of the paper was to monitor for one year the concentrations of NO₂ and SO₂ in Argeş County and to correlate these data with climatic and urban parameters.

The study concludes with a simulation of the dispersion of pollutants emitted by a source, having dimensions and location similar to those of the evacuation tower from CET Bradu, in conditions of a stable atmosphere at various temperatures.

(E17) THE DANUBE DELTA – A SPECIAL AND UNIQUE EXPERIENCE

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The Danube Delta is one of the most beautiful regions of Romania and even of Europe. The Danube Delta is on the UNESCO World Heritage List, thus being an objective of great importance. It is the wildest wetland on the European continent and the only delta in the world declared a biosphere reserve. It can be considered a real natural biodiversity museum.

The Danube Delta is a unique place in the world that hosts 20 natural ecosystems and represents a labyrinth of canals, lakes, reeds, sand dunes, Mediterranean vegetation and oak forests.

In 1993, a special law on the establishment of the Danube Delta Biosphere Reserve was elaborated and adopted by the Romanian Parliament, which gives it a special biogeographical, ecological and aesthetic importance, with national and universal heritage value.

The Danube Delta is wonderful and fascinating for the visitor, it offers abundant space, rich in landscape, with balanced elements in which the organic entity is in interrelation with the other elements. Delta attracted by its originality, flora and fauna belonging to rare species.

During a visit to the Danube Delta by French researcher Jaques Yves Cousteau in 1991, he said: "The Danube Delta is a strategic reserve for European science and tourism and each of us has a moral obligation to defend and protect this richness of nature offered to man. ".

(E-18) THE GEOMORPHOLOGY OF THE CURVATURE SUB-CARPATHIANS BASED ON DATA FROM FOREST MANAGEMENT PLANS

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The geomorphology of a vast territory can be analyzed based on data from forest management plans as these characterize the part of a territory occupied by forests. In addition, these plans are extremely detailed for small surfaces, on only a few hectares. Based on these aspects, the present article studies the geomorphology of the Curvature Sub-Carpathians by considering a large number of data from forest management plans realized for state forests located in this area. The data includes relief, field configuration, field aspect, slope and altitude. Field configuration is 90% undulated, while the average altitude is of 600 m. The slopes range between 200 and 300, amounting to 70%, while the ones larger than 400 represent 6% of the studied territory in Pascov (604 ha), Vintilă Vodă (422 ha), and Cislău Forest Districts (400 ha).

(E-19) ROADSIDE VERGES AS IMPORTANT BUFFERS AGAINST HEAVY METALS DISTRIBUTION

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Roadside verges represent strip of green space along the roadside, formed by grasses, shrubs and even trees. In time, this green space became smaller or sometimes disappeared especially in the crowded cites where every small piece of land was occupied by constructions. Our studies were focused on three urban parks with different vegetation complexity from Bucharest. On transects perpendicular on the major roads, we recorded the vegetation and soil invertebrates and we performed chemical analysis of the soil and different plant species, investigating heavy metals (Zn, Pb, Cu, Cd) concentration. The results highlighted that the heavy metal concentration in the soil and plant species is influenced by the proximity of intense traffic roads, decreasing proportional with the distance from the road. The soil invertebrates' diversity increases proportional with the distance from the road. Both heavy metals concentration from plants and soil and soil invertebrates' diversity depends greatly on the roadside verges species composition and size. It is also documented that the roadside verges represent important ecological corridors that connect isolated habitat patches. The necessity of re-creating or maintaining the existing roadside verges should be understood in the light of conservation biodiversity but mainly of human and other species heath. The roadside verges are very good buffers against heavy metals distribution and concentration.

(E-20) THE SEASONAL VARIATION OF PHYSICAL-CHEMICAL PARAMETERS IN POLLUTED RIVERS FOLLOWING ANTHROPOGENIC INPUT: A STUDY CASE PASAREA RIVER

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Water has an essential role for all live forms on Earth, its quality having a major impact on humanity future. Historically, the main human cities and villages were located in the proximity of rivers as water source for daily life and other activities like industry or agriculture leading to increased anthropogenic input in rivers with industrial development and the increase in the life standards of human population. The aim of this study is to determine the influence of physical-chemical parameters on the quality of Pasarea River water following some high pollution periods determining an increased fish mortality rate in the river. Water samples were collected during September of 2020 and in February of 2021 from two locations in the proximity of industrial companies and residential complexes. The recorded environmental parameters showed temperature variations within the 3° C - 11° C interval during autumn and 3^{0} C - 6^{0} C during winter period. The high conductivity values of 1000 μ S/cm in autumn and 900 μ S/cm in winter and of the TDS with an average of 400 ppm, indicated a high nutrient content of Pasarea River. The conductivity values due to the presence of ions in the water able to transfer electricity are correlated with the resistivity of the polluted water with values close to 0 M Ω /cm for all investigated samples. The slightly negative values of the ORP could be explained by the presence of microaerophilic microbial population. The chemical composition of the water samples revealed the presence of relatively high amounts (over 6% mass percent) of SiO₂, BaO, Sm₂O₃, Gd₂O₃, Tb₄O₇, CaO and Nd₂O₃. The highest concentrations of chemical elements were recorded during the autumn period of 2020 for the sampling point nearby Dimieni bridge.

This first overview of the physical-chemical characteristics of Pasarea River in the proximity of Bucharest related to the urban polution constitute a starting point for evaluating the impact of water polutants on the microbial communities from this habitat.

(E-21) BIODIVERSITY OF EDAPHIC FAUNA IN GRAY FOREST SOILS OF THE REPUBLIC OF MOLDOVA

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Gray forest soils of the natural ecosystems in the central and northern zones of the Republic of Moldova are the habitat and the source of conservation and reproduction of the edaphic fauna. They represent themselves the standards of the biodiversity for soil invertebrates. Invertebrates sampling was carried out from test cuts by manual sampling of soil layers to the depth of soil fauna occurrence. The main content of invertebrates in gray soils under the forest was in the layer of 0-20 cm. In addition to the Lumbricidae family there were found the families of *Clubionidae*, *Hydromiidae*, *Scarabaeidae*, Oniscidae. Tortricidae. Julidae. Curculionidae. Carabidae. Geophilidae, Tenebrionidae, Melandryidae și Formicidae. Species of Eisenia rosea, Euomphalia strigella, Formica rufa, Tortrix viridana, Curculio glandium, Melolontha melolontha and others have been identified in three subtypes of gray forest soils of natural ecosystems. The long use of these soils in agricultural production led to the considerable decrease in the number and biomass of invertebrates and degradation of the faunal complex in general. The number of families decreased from 6-12 to 1-3. Species of Lumbricidae, Elateridae, Tortricidae and Coccinellidae families have been found in arable gray forest soils. The trophic pyramids are stable in the typical virgin gray soil. The relation between trophic levels of the edaphic fauna in the typical gray forest soil is stronger in comparison with albic and molic gray forest soils.

(E-22) POSSIBILITIES OF OBTAINING CADASTRAL PLANS ON LARGE SURFACES USING AERIAL PHOTOGRAMMETRY

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The importance of research in the field of topo-cadastral or photogrammetry has been revealed by many studies but strictly with reference to the general cadastre without considering the relevance for agriculture: arable land, pastoral space, forests or other uses. In this context, the purpose of the research was to bring "automated" alternatives, remotely, to the preparation, updating or completion of cadastral plans available in the past in analog format, at the level of each ATU. The working methodology consisted of: flying over the territory with WingtraOne photogrammetric equipment, at an altitude of 300 m, generating the orthophotoplan with very high spatial resolution (below 0.5 m), vectoring the lands according to the category of use, both in the urban area and outside the commune and the creation of geospatial databases. The obtained results materialized through the topo-cadastral inventory of all the buildings in the analyzed territory (arable land, pastures, hayfields, forests, built spaces, etc.), both as a spatial location (vector format) and as a descriptive database. The application of high precision photogrammetric techniques has a practical application in real estate inventory, especially in the case of large areas, but also a complement to theoretical research in various fields.

(E-23) INDOOR AND OUTDOOR EFFECTS OF AMMONIA IN POULTRY HOUSES

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Ammonia gas is one of the main problems in poultry houses and directly affects indoor and outdoor environments. Poultry litterinduced ammonia is a lighter gas than air and can easily spread into the poultry house. Ammonia gas emissions can change depending on the number of animals, breed, growing systems, humidity, indoor temperature, and insufficient ventilation conditions. In case of high ammonia emissions, animal welfare, and health, thus performance is negatively influenced. In addition, depending on the amount of emission, ammonia can cause health problems on workers employed in poultry houses including nose, mouth and eye problems. At high concentrations, it can also cause respiratory problems. The toxic effect of ammonia, which has a stench and strong odor, is discharged into the outside environment through ventilation, then negatively influences the living conditions of the residential areas outside the poultry houses. In agricultural enterprises where there is insufficient waste management, ammonia, which can easily dissolve in water, can contaminate (with transforming ammonia to nitrite and nitrate) water resources as a result of nitrification.

(E-24) EFFECTS OF DIETARY MEALWORM LARVAE MEAL FERMENTED WITH TWO DIFFERENT PROBIOTIC BACTERIA ON LITTER QUALITY IN BROILER HOUSE

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This study was conducted to investigate the effects of the supplementation of mealworm larva meal fermented with two different probiotic bacteria (Lactobacillus plantarum or Lactobacillus brevis) to diets of broilers reared normal or high stocking density on litter quality. Wood shavings, commonly used in broiler houses, are used as litter material. High stocking density significantly increased litter moisture content compared to that of normal stocking density (P<0.0001). Dietary broiler reared supplementing of mealworm larvae meal fermented with Lactobacillus plantarum or Lactobacillus brevis significantly decreased litter mositure content compared to that of control diet (P<0.0001). High stocking density significantly increased litter pH levels compared to normal stocking density (P<0.0001). On the other hand, dietary treatments had no significant effect on litter pH. High stocking density significantly increased ammonia gas emissions in the 5th day (P<0.05) and 7th day (P<0.0001) compared to normal stocking density. Furthermore, feeding on diets supplemented with mealworm larvae meal fermented with Lactobacillus plantarum or Lactobacillus brevis numerically decreased ammonia gas emissions in the 5th and 7th days although their effects on ammonia gas emissions are not significant. It was concluded based on present findings that mealworm larvae meal fermented with probiotics can be used as a natural feed additive to prevent the problems resulted from wet litter and high indoor ammonia levels in broiler houses.

(E-25) SUSTAINABLE FUELS OBTAINED FROM THE PYROLYSIS PROCESS OF SEWAGE SLUDGE

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Combustion of fossil fuels, greenhouse gas emissions, large amounts of sewage sludge, lead to environmental pollution and global warming. For this reason we must think of feasible solutions to disposal the sewage sludge by capitalization it and energy recovery. One of the most interesting technologies for disposal the sewage sludge is the pyrolysis process. After the pyrolysis process of sewage sludge are otained three types of products: bio-oil, syngas and biochar. Bio-oil can be used as an alternative fuel for fossil fuels after refining. Bio-char can be used as an adsorbent after an activation process for the capture and storage CO₂. Pyrolysis is considered an environmentally friendly process because it reduces the emission of greenhouse gases, while heavy metals are concentrated in the final residue. In this paper are also presented the advantages of sewage sludge pyrolysis.

(E-26) PHYTOSOCIOLOGICAL STUDIES ON CALCAREOUS SCREES FROM MERIDIONAL CARPATHIANS (ROMANIA)

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The calcareous screes are very well represented in Meridional Carpathians, especially in Piatra Craiului Mountains. The paper vegetation of these natural analyzes the habitats from phytosociological point of view. Typical plant associations were characterized and the Relative Euclidean distance was calculated on the basis of the Ward method. There are 11 plant associations characteristic for calcareous screes in this region, as follows: Cerastio lerchenfeldiani-Papaveretum Boscaiu, Täuber et Coldea 1977, Cardaminopsio neglectae-Papaveretum Coldea et Pânzaru 1986, Acino-Galietum anisophylli Beldie 1967, Doronico columnae-Rumicetum scutati Boşcaiu et al. 1977, Saxifragetum moschataeaizoidis Boşcaiu 1971, Cerastio transsilvanici-Galietum lucidi M. Boscaiu et al. 1998, Achnatheretum calamagrostis Br.- Bl. 1918, Gymnocarpietum robertianae (Kaiser 1926) Tx. 1937, Sedo fabariae-Geranietum macrorrhizi Boscaiu et Täuber 1977. Thymetum comosi Pop et Hodişan 1963, Parietarietum officinalis Csűrös 1958.

The hierarchical analysis revealed the distribution of the plant associations in two clusters corresponding to the two alliances *Papavero-Thymion pulcherrimi* I. Pop 1968 and *Stipion calamagrostis* Jenny-Lips ex Br.-Bl. 1950.

(P-01) DETERMINATION OF HERBAGE YIELD AND QUALITY OF DIFFERENT SOYBEAN VARIETIES

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Objectives of the present study are to determine the variations in forage yield and quality of soybean cultivars. Experiments were carried out in randomized complete block design with 3 replications during the growing seasons of 2016. A total of 10 cultivars were used as the plant material of the experiments (Bravo, A3127, Traksoy, İlksoy, Mersoy, Nova, SA-88, Arısoy, Safir, Atakişi). Cultivars had a significant effect on yield and chemical composition. Results revealed that herbage yields varied between 826.39-1199.17 kg/da, hay yields between 247.71-357.90 kg/da, crude protein yields between 16.91-39.86 kg/da, acid detergent fiber (ADF) between 26.56-34.61%, neutral detergent fiber (NDF) between 38.43-44.85%, crude ash ratios between 7.20-11.22%, crude protein content between 6.66-13.53%, dry matter digestibility (DDM) between 61.94-68.21%, dry matter intake (DMI) between %2.68-3.12 and relative feed value (RFV) between 2.68-3.12. The results of the study showed that the A3127 cultivar was found to be prominent with herbage yield (1199.17 kg/da) and hay yield (357.90 kg/da) and the Safir cultivar was found to be prominent with crude protein yield (39.86 kg/da). It was concluded that the soybean cultivars A3127 and Safir could be recommended for hay production in Kayseri and similar ecologies.

(P-02) CHARACTERIZATION OF LEAF FEATURES IN SOME BLACKBERRY GENOTYPES COLLECTED FROM THE BLACK SEA REGION

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Blackberry is a perennial fruit species are grown in many parts of the world and Turkey. It grows naturally in the temperate regions of the northwest of Asia, in the mountains of North Africa, Europe, North America and South America. In this study, a total of 12 blackberry genotypes collected from the Black Sea Region were used. Morphological characterization processes of leaf characteristics (leaf height, leaf width, leaf sliciness, leaf shape, green color density on the upper part etc.) of these materials were made according to the definition lists of UPOV (International Union for the Protection of New Plant Varieties). The measurements and observations taken were converted into scores and by using these scores, dendrogram and principal component analysis (PCA) related to morphological characters was obtained. The similarity level between the materials in the pedigree obtained according to the morphological characterization data was determined between 0.50-1.00. Average similarity coefficient was determined as 0.75 and the materials were placed in 2 main clusters (A and B). According to the dendrogram obtained, genotypes obtained from Samsun (Çarşamba 1), Samsun (Çarşamba 2) and Ordu (Gülyalı), Bartın (Center) and Rize (Küçükçayır) regions were found to be the closest genotypes with 1.00 similarity level. In addition, principal component analysis (PCA) was performed with the data obtained. With this analysis, the similarities and differences in blackberry genotypes were clearly revealed, and three main groups and two outer groups were determined in the two-dimensional graph. It is important to preserve the morphological diversity obtained from this study and to evaluate it with different studies. The variation revealed is a valuable asset for breeding studies and other research. In order for these not to be lost in nature and to carry future generations, they should be evaluated with studies.

*We would like to thank the Erciyes University BAP Unit for their support to the project coded FDK-2016-6731, which is the subject of this study.

(P-03) MONITORING OF *RHAGOLETIS CERASI* L. THROUGH THE DECIS TRAP AT IAȘI-ROMANIA

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The observations were made during the vegetation period of the cherry plantation within the Research and Development Station for Fruit Growing Iași in 2020.

Rhagoletis cerasi (L.) is the main agent of damage to sweet cherry plantations. Found in all sweet cherry plantations, it is important for an integrated phytosanitary protection of the crop. The population dynamics in the Iasi area was monitored at different time intervals. The climatic conditions of the year and the biological reserve favored the appearance and development of the pest studied. The first catches were recorded on 12 May and the highest number of catches was recorded on 17 June 2020. Adult monitoring *Rhagoletis cerasi* (L.) was performed using "Decis Trap", an attractive trap containing ammonium carbonate, which attracts by its orange color and fights with the active substance deltamethrin providing a duration of protection of 5 months. The appearance and dynamics of pests have directly influenced the phytosanitary protection program.

(P-04) COMPARISON OF GRAIN FEED QUALITY OF DIFFERENT BROAD BEAN GENETYPES

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The objective of the present study was to determine grain feed quality of different broad bean cultivars and lines. For this purpose, Eleven different cultivars and five lines (Emiralem, Histal, Sorgun, Kitik 2003, Sakiz, Eresen 87, Sevil, Reina Mora, Filiz 99, Salkim, Luz De, Otonoto, Seher, EU 4446, Canakkale, Antalya) were used as the plant material. Experiments were conducted in randomized blocks design with three replications. Effects of genotypes on grain feed quality were found to be highly significant ($P \le 0.01$)

Current findings revealed that crude oil content between 0.62 - 1.58%, crude ash content between 1.89 - 3.30%, crude protein content varied between 22.30 - 32.14%, acid detergent fiber (ADF) content between 7.45 - 14.94% and neutral detergent fiber (NDF) content between 16.08 - 28.05%. Seher, EU 4446, Canakkale, Antalya, Filiz 99 and Histal were found to be prominent for hight crude protein and crude oil, thus these genotypes were recommended for animal feeding.

(P-05) EFFECT OF MATURITY STAGES ON POTENTIAL NUTRITIVE VALUE OF VICIA CRACCA HAY

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The aim of the current experiment was to determine the effect of the harvesting stage on the potential nutritive value of *Vicia cracca*. Plants were harvested at three maturity stages (before flowering, flowering, and seeding). *Vicia cracca* plants were dried at 70°C and grinded in a hand-mill with 1 mm sieve for chemical analysis. Crude protein, crude oil, crude ash, condensed tannin, Acid Detergent Fiber (ADF) and Neutral Detergent Fiber (NDF) parameters were investigated as the chemical composition. The harvesting stage had a significant ($p \le 0.01$) effect on chemical composition.

Dry matter, NDF and ADF contents were increased with advancing maturity, whereas crude protein, crude oil, condensed tannin, and crude ash contents were decreased. As a conclusion, the nutritive value of *Vicia cracca* plant decreased with increasing maturity. Therefore, the *Vicia cracca* plant can be harvested or grazed before flowering and flowering stages due to high crude protein, crude oil and low ADF and NDF.

(P-06) SENTINEL IMAGES IN LAND MODELING AND AGRICULTURAL AREA EVALUATION

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In recent decades, through technical and scientific progress, satellite images have proven their usefulness in the analysis, evaluation or monitoring of agricultural space. The possibility of "remote" investigation facilitates and sometimes replaces the movement in the field, especially in the case of grassland areas that undergo changes by advancing forest vegetation on the edge of water bodies, specific to plain areas. In this context, the paper aims is to model and evaluate the agricultural space, by means of remote sensing. In the case of the present study, the inventory and evaluation of agricultural lands was done through assisted spectral classification procedures on Sentinel 2A satellite images. The satellite data were registered on 24.04.2021, from the low plain area of Banat (ATU Cena). On the surface of 1649 ha, two ways of using/covering the agricultural lands (grasslands and crops in arable land) but also built areas related to the built-up areas of the localities were identified. The area is crossed by former irrigation canals, which delimit the plots of agricultural land but also by permanent watercourses. The research methods used are applicative and accurately reflect the situation in the field.

(P-07) ASSESSMENT OF SWEET CHERRY (*PRUNUS AVIUM* L.) GENOTYPES GROWN IN ROMANIAN NORTHEASTERN AREA

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The soil and climate conditions in Romanian Northeastern area are favorable for cherry cultivation, but some times can occurred some calamities. The paper presents a study which during 2020 at the Research Station for Fruit Growing (N-E of Romania), using five sweet cherry genotypes as research material: 'Van', 'Croma', 'HC920402'. 'HC930208'. 'Elaiasi'. Observations and determinations were performed in regards to the frostdamages, the main growing and phenological stages and the physical and chemical traits of the fruit. The phenological stages were evaluated for beginning of flowering and fruit ripening (expressed in growing degree-days, GDD). For these sweet cherry cultivars, the highest values concerning the fruit's weight have been recorded for 'Elaiasi' (9.15 g) and 'HC920402' (7.7 g), while fruit's equatorial diameter have ranged between 23.21 mm and 25.16 mm. The content of soluble dry solids (SDS) was between 14.6 and 20.2 °Brix. The proposed objective aims at introducing in the assortment the new varieties with quality fruits and their resistance to cracking, with ripening time at the extremities of the sweet cherry season.

(P-08) PHENOLOGICAL STAGES AND FRUIT QUALITY PARAMETERS OF SOUR CHERRY GENOTYPES IN ROMANIAN CONDITIONS

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The paper presents some aspects regarding the influence of environmental factors in 2020 on the development and fruiting of local and foreign sour cherry cultivars. Phenological stages, fruit quality traits and other chemical parameters were studied. The swelling of the buds started with March 7th (`Tarina`), while the beginning of flowering varied during 11 days, taking place between April 8-19th to April 26th. Fruit's weight have varied between 3.34 g (`Erdi Ipari`) and 6.28 g (`Erdi Bibor`), but of the stone between 0.20 g ('Erdi Ipari') and 0.32 g ('Erdi Bibor'). Regarding the equatorial diameter, it varied between 16.98 mm and 22.37 mm for the varieties `Erdi Ipari` and respectively `Erdi Bibor`. The fruit ripening took place between June 3rd and 20th. The values of the soluble dry solids recorded data ranging from 13.84% ('Erdi Korai') to 17.10% ('Erdi Bibor'). The studied sour cherry cultivars showed variability, but some were remarked through by the size of the fruit and the high level of soluble dry substances, or by the degree of adaptability to the soil and climate conditions in Northeastern Romania.

(P-09) RESEARCH ON DETERMINING THE NUTRITIONAL REQUIREMENTS OF VARIOUS POTATO VARIETIES AT SOLFARM SRL, COVASNA COUNTY

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Potato cultivation is mainly influenced by the type of fertilisers used, the dosage of mineral or organic fertilisers applied based on the soil nutrient supply and texture of the soil. The potato's particularities in growing stolons and tubers in the soil, the superficial root system, reltively smaller when compared to the above-ground part, make the plant's soil condition requirements different from other crops. The purpose of these experiments was to determine the nutrient content in the soil, in order to accurately determine the macro- and microelement requirements, decided before starting the cultivation, as they are highly important in order to obtain a good yield. In order to monitor the soil nutrient supply, soil samples were taken at a depth of 0-20 and 20-40 cm for ten different varieties, i.e. Arizona, Esmee, Riviera, Red Lady, Carrera, Jelly, Red Fantasy, Levantina, Bellarosa and Luna Rosa, and based on them the ph values, the humus, nitrogen, phosphorus, potassium and mobile form (Cu, Fe, Mn, Zn) content were established. Soil analysis is extremely important before starting the cultivation, because it helps farmers determine whether the type of soil is suitable for the plants to be grown and to determine an adequate fertilisation plan.

(P-10) INFLUENCE OF CULTIVAR AND FERTILIZATION WITH VERMICOMPOST ON FRUIT QUALITY AND YIELD IN *LONICERA SPP*

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This paper aims to study the influence of cultivar and vermicompost (organic fertilizer) treatments on fruit quality traits (fruit weight, flesh firmness, juice pH, chromatic coordinates in CIELab system, chlorophyll fluorescence) and plant productivity on Lonicera caerulea L. The experiment was carried out between 2019 and 2020, at the Research Institute for Fruit Growing Pitesti, Romania. To achieve these, three honeysuckle cultivars ('Cera', 'Loni', and 'Kami') were treated with four fertilizer doses: 0.2, 0.3, 0.75, and 1.0 L plant ¹. We found that 'Cera' cultivar was characterized by fruits with the highest weight (0.67 g) and firmness (13.71 units Bareiss HPE-II-FFF), 'Kami' cultivar, had the highest total soluble solids content (17.09 °Brix), and 'Loni' was the most productive (33.33 g plant ⁻¹). Compared to untreated plants, fertilization with vermicompost in a dose of 0.2 L plant ⁻¹ increased fruit weight (by 14.81%), pH (by 9.79%), and fruit production per plant (by 36.65%), indicating that organic fertilization with vermicompost could be used in ecological honeysuckle culture technology.

(P-11) BIOMETRIC CHARACTERISTICS OF 'CATHERINE SEL 1' PEACH CULTIVAR IN SEMIARID ENVIRONMENT

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In arid and semi-arid regions, irrigation application is mandatory for modern fruit growing, but the optimal irrigation application requires large amounts of water. In the context of global warming, water saving is a major objective. Therefore, deficit irrigation (DI) is an attractive alternative. The plant studied was thirteen years old 'Catherine Sel.1' peach trees. The trees were grafted on franc rootstock and planted in a 4 m x 3 m layout. Soil management was represented by clean cultivation both between tree rows and in the row. Fruit size and weight are important qualities and yield traits in peach (Prunus persica (L) Batsch), but the factors that influence fruit size and weight remain to be explored. The fruit biometrical characteristics was influenced by the irrigation regime, with the irrigated treatment with 100% AHI (T1) showing significantly (P <5%) higher differences versus T2 and T3. As with fruit biometrical characteristics, the fruit weight determined on the fruits of the studied treatments had the same trend. In this study, we investigated the impact of stress hydric on fruit size and weight at 'Catherine sel 1' peach cultivar in 2019-2020 period.
(P-12) BIOMETRIC CHARACTERISTICS OF 'ORIZONT' APRICOT CULTIVAR UNDER STRESS HYDRIC CONDITIONS

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Irrigation is a major activity in arid and semi-arid regions for many crops, including orchards. The deficit irrigation is an alternative in the context of global warming. The crop studied was apricot, 'Orizont' cultivar, 16 years old, grafted on the 'Constanta 14' rootstock. The planting distance was 4 m between the rows and 5 m between trees in the row. Fruit size and weight are important qualities and yield traits in apricot (*Prunus armeniaca* L.), but the factors that influence fruit size and weight remain to be explored. The fruit biometrical characteristics was influenced by the irrigation regime, with the irrigated treatment with 100% AHI (T1) showing significantly (P <5%) higher differences versus T2 and T3. As with fruit biometrical characteristics, the fruit weight determined on the fruits of the studied treatments had the same trend. In this study, we investigated the impact of stress hydric on fruit size and weight at 'Orizont' apricot cultivar in 2019-2020 period.

(P-13) POMOLOGICAL CHARACTERISTICS OF SOME APRICOT VARIETIES GROWN IN THE NORTHEAST AREA OF ROMANIA

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The aim of this paper was to evaluated of some apricot genotypes grown in the Romanian North Eastern area conditions. During 2016-2018 studies were done at seven apricot cultivars ('Mamaia', 'Ovidiu', 'Fortuna', 'Amiral', 'Goldrich', 'Traian' and 'Dacia') which were in the experimental plot at RSFG Iași, Romania. Number of days and sum of the active temperature from swelling buds (51 BBCH stage) to the beginning of blooming (61 BBCH stage), trunk section area of the tree and also fruit's weight were evaluated. Fruit weight of 'Dacia' registered 89.3 g but at 'Amiral' were 75.3 g as average for three years, but statistically there were no significant differences from the average. Regarding the period from the swelling of buds to blooming, the shortest period was of 10 days for the 'Dacia' and 'Traian' and the longest period was 14 days for the 'Ovidiu'. The sum of the active temperatures above the biological limit has varied according to the climatic conditions of the studied years from 103°C to the 'Dacia' and 'Traian' to 136°C for the 'Ovidiu'.

(P-14) PHYSIOLOGICAL EFFECTS OF HIGH TEMPERATURE TREATMENTS ON TOMATO LEAVES AT TWO DEVELOPMENTAL PHASES

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The study was conducted to investigate the effects of high temperatures on three tomato cultivars at first bloom and yield stages. The leaves were subjected to high temperature stress at 35, 40, 45, 50, 55 and 60°C with gradual increments every 30-minutes in both stages. Samples were analyzed for total chlorophyll (Chl), carotenoid, ascorbic acid (AsA), glutathione (GSH), total soluble protein (TSP) contents. Besides, protein profiles were determined with SDS-PAGE. Heat stress decreased Chl content in both stages, while it was higher in first bloom stage than in yield stage. Whereas carotenoid content increased in both stages. The AsA and GSH contents were higher in yield stage than in first bloom stage. Heat stress, generally reduced AsA content, while increased GSH content. It was observed that the effect of cultivars and temperature treatments on the TSP content was different in both periods. In addition, TSP content had decreased with increasing temperatures, while many protein bands had been observed in SDS-PAGE with sizes ranging from 13 kDa to 89 kDa according to treatments.

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(P-15) EUROPEAN GREEN DEAL: IMPLICATIONS FOR AGRICULTURAL SYSTEMS

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The European Green Deal was presented at the end of 2019, as a new strategy for a greener European Union (EU) and a better quality of life. This agreement has implications for all socio-economic sectors of the European Union and aims ambitious targets for climate and environment. Agriculture is responsible for almost half of EU land. The most important documents proposed for the implementation of the European Ecological Pact related to agricultural policies:

- Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system;
- EU Biodiversity Strategy for 2030;
- Agriculture Organic Action Plan;
- Circular Economy Action Plan;
- European Climate Law.

The main implications for agricultural systems will come from the climate and environmental goals set by Europe's new strategy: reducing the use of pesticides and antimicrobials in agriculture by 50% by 2030, 20% less fertilizers, organic agriculture for minimum 25% of agricultural land by 2030. There will be significant implication for farmers, rural areas, new technologies for agriculture and healthy products, environment, education and research systems, increase funding for environmentally friendly agricultural technologies.

(P-16) SEDUM CUTTINGS ROOT GROWTH ANALYSIS USING DIFFERENT TYPES OF CULTURE SUBSTRATES

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Globally, succulent plants are known for their resilience, vigor and plasticity as they easily adapt to the pedo-climatic conditions an urban or natural environment can provide. Thanks to their specific metabolism, succulents are drought resistant and therefore widely used in both vertical garden and green roofs systems. For the most part, they grow in any type of culture substrate, moreover, they are species that prefer soils with very little nutrients and grow very well in light and well-drained soils. The current paper presents a case study analysis of the behavior of 3 Sedum cultivars (Sedum spathulifolium 'Purpureum'; Sedum spurium 'Purpur Winter' and Sedum spathulifolium 'Cape Blanco'). For this, three culture substrate variants were used: (1) slag, typical for green roofs, (2) sand and (3) a commercial garden soil with traces of dolomite and perlite. The different types of substrate were divided equally in 2046 pots in which 12.276 cuttings were planted, respectively 6/pot. Observations and determinations were made concerning their root mass development. Without adding fertilizers or irrigation water, the cuttings have been watered only through precipitations. After a 2 month period, the results highlight that for propagation purposes, cuttings planted in substrates (2) and (3) responded quickly to rooting whereas substrate (1) yielded almost no results whatsoever.

(P-17) IDENTIFICATION OF SOME ROOTSTOCKS FOR WATERMELON CULTURES FROM ROMANIA

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The research was conducted at the Horting Institute - Bucharest, on a grafted and non-grafted watermelon collection cultivated in a greenhouse. Among the grafting aims, (1) to enhance plant growth, fruit yield and quality (2) to control wilt caused by pathogens; (3) to reduce viral, fungal and bacterial infection; (4) to strengthen tolerance to thermal or saline stress; (5) to increase nutrient and mineral uptake to the shoot. The cultivars used to obtain of grafted seedlings were from the Baronesa F1 (Citrullus lanatus) hybrid scion and the Pelops F1 (Lagenaria siceraria), Kiwano (Cucumis metuliferus) and Zefir (Benicasa hispida) rootstocks. The biometric measurements on the watermelon fruit yield were made in 2020 year. The experience were aimed the identification of some rootstocks for the watermelon cultures from Romania. The research show that the rootstocks has influenced the fruit yield and some grafting combinations researched may be recommended for the cropping in Romania.

(P-18) THE EFFECT OF BLANCHING TEMPERATURE ON THE TEXTURE OF LACTIC FERMENTED CUCUMBERS

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In the history of mankind, the use of canned vegetables has been a source of ensuring a diverse range of vegetables in winter and has led to the development of cropping systems with technological features specific to industrialization. The effects of blanching temperature on the texture and quality of cucumber fruits under the conditions of lactic fermentation have been important topics of study over time. In comparison, in this paper we studied the complex influence of fermentation time (25 days) and temperature level (22 °C) on qualitative aspects such as pH level, total acidity and salt concentration change. Two different temperatures were also used for blanching with the salt solutions, 96 °C and 67 °C. The results of this study show that iodized sea salt was useful for whole pickles because they showed a better taste and texture. Pickled cucumbers blanched at 96 °C showed a better texture and lower acidity than those at 67 °C.

(P-19) THE EFFECT OF CHEMICAL TREATMENTS ON THE QUALITY AND VASES LIFE OF CARNATION CUT FLOWERS (*DIANTHUS CARYOPYLLUS* L.)

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Cut flowers are living organs, with intense metabolic activity, subject to a rapid aging process compared to flowers not detached from the mother plant. Improving the life of cut flowers is one of the most important factors for customer satisfaction. The effect of silver thiosulfate (STS) and commercial mixtures was studied in carnation cut flowers and kept in randomized vases according to experimental factors. Three commercial mixtures were used (Chrysal, Flower Food, Fleur Rose) and thiosulfate in four levels (0 or control, 0.03, 0.06 and 0.9 mM). The interaction of the two factors studied was insignificant for most traits, including wilting percentage and vase lifespan, which may involve the application of both substances alone is sufficient to improve post-harvest quality and is not necessary to use simultaneously in the preservative solution. The results also showed that following the interaction of the two factors, treatment with 0.06 mM silver thiosulphate can be applied to improve the postharvest quality of blossom cut flowers and commercial chemical mixtures can be successfully replaced.

(P-20) MONITORING AND CONTROL OF THE PEST TUTA ABSOLUTA (MEYRICK) IN TOMATO CROPS UNDER HIGH PLASTIC TUNNELS

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Tuta absoluta – tomato leafminer (Meyrick) (Lepidoptera: Gelechiidae) is a major pest of tomato crops in protected areas, which attacks both foliage and fruit, in all phases of plant growth. Its invasion has led to yield and quality decrease, increased costs to control and high dependence on chemical insecticides. With pheromone traps it is possible to monitor and reduce the density of the pest population. The experience was established in 2020, at a farmer in Dobreni village (Giurgiu county). In the first and second crop cycle, the population of the pest *Tuta absoluta* was monitored, by placing Delta pheromone traps in tomato crops. The Prekos F1 tomato hybrid was planted in both crop cycles. Pest monitoring was performed weekly, by changing the adhesive plates with pheromones from Delta traps, on the dates: 03.06, 10.06, 17.06, 24.06, 01.07, 08.07, 15.07, 22.07 in the first cycle of crop and on the dates: 29.07, 05.08, 12.08, 19.08, 02.09, 09.09, 16.09, 23.09 in the second cycle. The appearance and evolution of the attack were recorded in the both crop cycles and its influence on production was established.

(P-21) EFFECT OF DIFFERENT DRYING METHODS ON SEED GERMINATION OF TWO PEPPER VARIETIES

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High seed germination is an important criteria in the seed industry, so the discovery of new processing processing methods that can improve percentage germination will be of great benefit for seed producers as well as for farmers. Seed germination tests of two pepper varieties (Bozok and Pinar) that were dried using common (sun, shade, greenhouse) and novel (oven, microwave, liyofilization) drying methods were experimented. Two types of solid medium were used, one which was a mixture of peat and perlite (M1) and the other that contained only vermiculite (M2), a paper wet test in petridish (M3) was also performed, but was not replicated. There were no difference between both medium but a difference in viability in both varieties, bozok was found to be more viable. Sun drying gave the highest emmergence rate 80% and 60% respectively in M2 and M1 for bozok. Novel drying methods had no positive effect on seed germination.

(P-22) DETERMINATION OF THE PHENOLOGICAL CHARACTERISTICS OF SOME MALUS KIRGHISORUM GENOTYPES SELECTED FROM KYRGYZSTAN IN THE ECOLOGICAL CONDITIONS OF CENTRAL ANATOLIA

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It has been reported that the apple populations in Central Asia have an important gene pool that will contribute to the resistance to biotic and abiotic stress conditions, fruit quality characteristics, tree growth form and some other unresolved problems. In this study, in order to reveal the diversity of Malus kirghisorum which one of the species in Central Asia, known as the origin of the cultivated apples, a total of 20 genotypes belonging to this species have bud swelling, bud burst, mouse ear, pink bud, beginning of flowering, full bloom in Central Anatolia ecological conditions. End of flowering date and defoliation dates were determined. According to the results of the research, bud swelling took place between 17 March-8 April, bud bursting between 20 March-12 April, and mice ear between 26 March-15 April among genotypes. Flowering did not occur in 4 genotypes due to the young age of the trees. In blooming, the beginning of flowering ranged from 15 to 26 April, the end of flowering from 28 April to 30 May in genotypes. Defoliation of trees occurred between the first and last weeks of November. The obtained findings can be used in early flowering apple breeding programs.

(P-23) WASTE WATER AS A SOURCE OF IRRIGATION WATER

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Water is the main medium through which we will feel the effects of climate change. Climate change is disrupting weather patterns, leading to extreme weather events, unpredictable water supplies, exacerbating water shortages, and polluting water supplies. In many places, the availability of water has become increasingly unpredictable, and the incidence of flooding threatens to damage water supply points and sanitation facilities and contaminate water sources. In some areas, drought has exacerbated water shortages, which has a negative impact on people's health and productivity.

In addition, it is very important to ensure the sustainable continuity of agricultural production. The most effective factor in achieving this in the future is the supply of irrigation water required for production. Now, described as low quality or contaminated wastewaters, the vessel serves as a source of irrigation water. Increasing scientific knowledge and technological developments in recent years allow these waters to be used as irrigation water, taking into account the pollution loads in them. In this study, the utilization of wastewater as a resource for irrigation water, which is the most important component of sustainable agricultural production, will be emphasized and the factors to be considered in its use will be explained.

(P-24) PRODUCTION COST AND WATER SAVINGS OF PADDY PRODUCED BY DRIP IRRIGATION

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Although there are different opinions on climate variability and global warming, it is a common idea in all hypotheses that water will become even more scarce. The water used in the production of paddy, which is one of the most important food sources for the majority of the population in the world, is too much due to the irrigation method. The average global water footprint of paddy production is reported as 1.391 billion m3/year. Considering this amount, it can be seen that paddy has an enormous environmental footprint. Excessive water use causes both waste of scarce resource water and numerous environmental problems during production. The most important reason for flooded production is the ability of paddy to grow/develop in water and to have a less competitive capacity with weeds. However, when rice is grown with drip irrigation, which is one of the irrigation methods that save water with high efficiency, significant increases in both yield and quality occur. Studies are showing that 50-97% water saving is achieved in paddy production with drip irrigation depending on the region, climate, soil, variety, producer habits, and similar situations. In addition, the cost of one kilogram of paddy produced in the drip irrigation system in the conditions of Canakkale province of Turkey has been calculated as 0.35 \$. This value has been calculated as 0.44 \$ in the flooded method. In addition, methane, carbon dioxide, and Nitrous oxide emissions are significantly reduced due to the transition from anaerobic to aerobic conditions. In this way, greenhouse gas emissions, other environmental negative effects, and especially groundwater pollution caused by paddy production can be reduced.

(P-25) PHOSPHORUS REMOVAL PERFORMANCE OF SAND-ZEOLITE MIXTURES FROM WASTEWATERS

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When the wastewaters are discharged into receiving bodies without any treatments result in eutrophication in receiving bodies and exert significant treats on aquatic ecosystems because of high phosphorus concentrations. Thus, wastewaters should pass through a treatment system before to discharge them into receiving water bodies to reduce the phosphorus concentration below the allowed limits. In this study, phosphorus removal performance of different substrate materials (alone and in mixtures) was analyzed with filter column tests under laboratory conditions. Sand and zeolite substrate materials were used alone and in different mixture ratios (75%-255, 50%-50%, 25%-75%). Different phosphorus concentrations (8.5, 16.0 ve 32.7 ppm) were applied to filter columns and saturated columns were subjected to different hydraulic retention times (1, 2, 3 and 4 day). Following the relevant hydraulic retention times, samples were taken from column outlets and samples were then analyzed for pH, electrical conductivity (EC) and total phosphorus (TP). Present findings revealed that pure sand exhibited the greatest phosphorus adsorption, P adsorption of mixtures increased with increasing sand ratio and zeolite exhibited lower P adsorption. It was proved that sand played a significant role in P adsorption and zeolite was far away meeting expected performance in P adsorption.

(P-26) PHOSPHORUS REMOVAL PERFORMANCE OF SAND-PUMICE MIXTURES FROM WASTEWATER

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Operation, maintenance, monitoring and assessment works are not routinely performed in natural treatment systems (constructed wetlands) constructed in rural sections of Turkey for domestic wastewater treatment. Therefore, substrate material failures are experienced in many cases. In this study, phosphorus removal performance of different substrate materials (alone and in mixtures) was analyzed with filter column tests under laboratory conditions. Sand and zeolite substrate materials were used alone and in different ratios (75%-255, 50%-50%, 25%-75%). mixture Different phosphorus concentrations (8.5, 16.0 and 32.7 ppm) were applied to filter columns and saturated columns were subjected to different hydraulic retention times (1, 2, 3 and 4 day). Following the relevant hydraulic retention times, samples were taken from column outlets and samples were then analyzed for pH, electrical conductivity (EC) and total phosphorus (TP). While pH and EC values were within the discharge limits set in Water Pollution Control Regulation, total phosphorus concentrations at 40 ppm doses were above the limit values. Sand was found to be more effective in P adsorption from the wastewaters than pumice. Increasing P adsorption were observed with increasing sand ratios of the mixtures. It was proved that sand played a significant role in P adsorption and pumice was far away meeting expected performance in P adsorption.

(P-27) INFLUENCE OF TWO DIFFERENT ORIGIN COMPOSTS ON ARONIA MELANOCARPA AND RIBES RUBRUM CROP PERFORMANCE

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The present paper studies the effect of two types of compost on fruit quality indicators, growth and fruiting processes of Aronia melanocarpa ('Nero' cultivar) and Ribes rubrum ('Junker van Teets' cultivar). The study was carried out at the Research Institute for Fruit Growing Pitesti, Romania. Two compost types were used as fertilizer: vegetal origin compost (fertilizer VG) and sludge from municipal wastewater treatment station (fertilizer MS). Fruit weight, flesh firmness, total soluble solids, juice pH, yield per plant and plant annual growth were recorded in the first experimental year, 2020. The application of composts increased fruit weight by 9.92%, flesh firmness by 6.18%, plant annual growth by 120.32%, fruit production per plant by 42.86% and reduced by 3.20% the pH of the juice on Aronia melanocarpa. Also, the fruit weight increased by 31.37%, flesh firmness by 9.63%, plant annual growth by 300%, fruit production per plant by 19.69%, but reduced TSS by 9.06%. Therefore, the improvement of fruit quality indicators and the stimulation of growth and fruiting processes, recommends the use of the two types of compost as fertilizer.

(P-28) DETERMINATION OF POLLEN VIABILITY AND GERMINATION RATIOS IN MERSIN ECOLOGY OF SOME EARLY APRICOT VARIETIES

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Turkey is the leading country in the production of world apricots (Prunus armeniaca). In the country, apricots are usually grown for drying and fresh consumption, and apricots are also used for different purposes. This study was carried out to determine pollen viability and germination status in some foreign apricot varieties grown in Mut district of Mersin province, which has an important place in early apricot production in Turkey. Pollen viability and germination ratios were determined by TTC and 1% agar 10% method in Mogador, Mikado, Pricia, Flopria apricot varieties. In terms of pollen values, the best result in terms of viable pollen is from The Mikado with 77.02% and Mogador varieties with 78.61%, while the Pricia variety with 44.09% in semi-viable pollen provides the most result, while Flopria and Pricia varieties produce the highest values in dead pollen results. In the germination tests, pollen germination rates were medium level in Flopria, Mogador and Mikado varieties the pollen germination rate of the Pricia variety is only 8.96%.

(P-29) THE EFFECT OF DIFFERENT POLLINATORS ON FRUIT SET RATIOS AND SOME FRUIT CHARACTERISTICS IN APPLE

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Apple is one of the fruit types in which self-incompatibility is seen. For economical apple production, pollination and fertilization are required. In this study, it was aimed to determine the fruit set ratios and some fruit characteristics of some apple varieties and apple genotypes originating from Kyrgyzstan by hybridization breeding method in 2020. According to the results, the highest fruit set ratio was obtained with the combination number 54×36 with 7.37%, while the lowest value was determined with the combination number 54×56 with 1.88%. Especially the precipitation that occurred during the fruit set time negatively affected the results. In the fruit characteristics results, the combination number 54×36 gave better results than the other combinations in fruit length and fruit width values. On the other hand, $21 \times \text{Elstar}$ combination produced the best result in terms of SSC value and significant differences occurred between combinations in terms of seed number. Evaluating the obtained findings as a guide especially in the breeding studies to be made on apples and in the new orchards to be established may be beneficial for the producers.

(P-30) FORAGE YIELD AND SOME QUALITY TRAITS OF PERSIAN CLOVER (*Trifolium resupinatum* L. var. *majus* Boiss.) AT WINTER AND SPRING SOWING UNDER THE EDIRNE ECOLOGICAL CONDITIONS, TURKEY

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The research was carried out to determine the forage yield and some quality properties of Persian clover (Trifolium resupinatum L. var. majus Boiss.) in different sowing times (winter and spring) under the Edirne ecological conditions, Turkey. The study was conducted during 2015-2016 at Degirmenyeni village of the Edirne province in Thrace, Turkey. Experiments were planted in Randomized Block Design with three replications. At sowing time, a basal fertilizer containing 50 kg ha⁻¹ nitrogen was incorporated into the soil at the time of land preparation. At each sowing times, seed was sown in plots of 10 rows, with a spacing of 25 cm and 5 m in length. Seeds were sown at a rate of 20 kg ha⁻¹ on October 7th, 2015 and Mach 12th, 2016. The number of branches, number of leaves, leaf length, leaflet length, stem diameter, plant height, total green herbage yield, total dry matter yield, crude protein, crude cellulose, calcium, phosphorus, potassium, magnesium, ADF and NDF ratios were determined. According to the results, Persian clover was showed equal superiority of some quality properties at winter or spring sowing under the Edirne ecological conditions, but in terms of green and dry fodder yields, spring sowing is better.

(P-31) STUDIES ON THE VARIABILITY OF THE PRODUCTIVITY COMPONENTS IN A COLLECTION OF HOT PEPPER LANDRACES (CAPSICUM ANUUM VAR. MICROCARPUM)

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The aim of the research was to evaluate the variability value of the main characters that contribute to the achievement of plant production to a collection of hot pepper genotypes. The biological material was composed of 17 landraces of hot peppers collected from western Romania. The study was conducted for two years, with biometric measurements on the morphological characteristics of fruit production on the plant. Intra-population variability was assessed (mean, standard deviation of mean and coefficient of variability) and differences between populations for these characters. The results show that the variability within the collection is high. Within populations, fruit sizes (length, diameter) are uniform, but the number of fruits and their weight per plant show greater variability. Within the collection, variations in morphological characteristics are large, especially for fruit length, fruit weight, number and weight of fruit per plant. Among the landraces studied, some may be recommended for breeding programs, as parents or as material for the application of selection: for long fruits (Julita, Aldesti I and Satchinez I), for short fruits (Satchinez III), but also the landraces Rieni III (17.07 g average weight of the fruit), Temeresti II (89.82 fruits per plant), Aldesti I (931.17 g fruits per plant)

(P-32) STUDIES ON THE VARIABILITY OF MORPHOLOGIVAL AND QUALITY CHARACTERS IN SAFFRON (*CROCUS SATIVUS*)

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Saffron is an aromatic herb appreciated for its olfactory qualities, but also for its medicinal contributions, having multiple pharmaceutical properties. The cultivation of saffron in Romania is rather little known, the scientific data obtained being of interest for farmers who want to start such a culture. In this paper two populations of saffron were studied, the bulbs being of the same origin and age, grown in two different localities in western Romania: Izvin and Cicir. Regarding the quality characteristics, the two cultures belong to quality categories 1 and 2, and analyses were determined on moisture, colouring power (crocin), aromatic power (safranal) and bitterness power (picrocrocin). From a quantitative point of view, the variability of morphological characters, the manifestation of morphological characters, the coefficients of corallance on characters such as: number of bulbs, total diameter of bulbs, diameter of dominant bulb, length of leaflet, leaf length, leaf width, number of leaves dominant bulb, petal length, petal width, petal number, stamen length, stigma length were determined.

(P-33) RESEARCH ON THE VARIABILITY OF YIELD COMPONENTS IN SOME GRAPEVINE VARIETIES FOR RED WINES

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Research was conducted during two growing seasons (2017-2018) in Minis-Măderat vineyard. The study aimed to evaluate the variability of several red wine grape varieties in order to highlight their main qualitative and quantitative parameters. In the research were involved the morphological parameters: the number of bunches on the vine, the bunch weight, the number of berries in the bunch and the grape yield on the vine. The highest bunches number /vine registered Merlot variety (30.24), while Burgund variety recorded the lowest values (17.76). Burgund variety recorded the highest bunch average weight (119.57 g) while Pinot Noir recorded the lowest value (87.18 g). Merlot variety recorded the highest number of berries/bunch.(111.36) and the lower value was recorded by the Pinot Noir (82.36). The Merlot variety achieved a significantly higher production than the other varieties during both growing seasons (3600.87g). The conditions of 2018 growing season had a very significant positive influence on the grape yield/ vine.

(P-34) APPLICATION OF REMOTE SENSING METHODS TO IMPROVE THE EFFICIENCY OF AGRICULTURAL LAND USE

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The scientific article is devoted to the study of the qualitative state of the fertile layer of arable land and the main factors affecting its condition. Remote sensing materials were analyzed on the example of one of the administrative regions of Kazakhstan. Based on the remote sensing materials, special attention was paid to identifying the most suitable territories for growing crops. The possibilities of practical application of materials for monitoring agricultural crops were studied also. In the research process were used methods of system analysis, modeling, comparison, statistical information processing and others. The scientific approach used made it possible to formulate sound conclusions and proposals to improve the efficiency of agricultural land use. In general, the scientific work allowed the authors to identify problems and propose ways to solve them in order to more actively use remote sensing methods in agriculture, including using drones and other modern geo information technologies.

(P-35) DETERMINATION OF FEED QUALITY PARAMETERS OF LEAVES AND STEMS OF DIFFERENT ALFALFA GENOTYPES

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This research was carried out to determine feed quality parameters of leaves and stems of different alfalfa genotypes. A total of 12 alfalfa genotypes was used as the plant material for the study. Alfalfa plants were harvested at the flowering stage. The plants were dried at 70°C and grinded in a hand-mill with 1 mm sieve for chemical analysis.

In leaf, the ADF content of genotypes varied between 21.62 - 27.40%, NDF content between 33.98 - 39.95%, crude protein content between 24.68 - 28.45%, Ca content between 1.23 - 1.62%, K content between 3.88 - 4.61%, Mg content between 0.28 - 0.45% and P content between 0.40 - 0.52%. In stem ADF content of genotypes varied between 50.99 - 57.72%, NDF content between 66.96 - 76.79%, crude protein content between 2.19 - 3.08%, Mg content between 0.05 - 0.16% and P content between 0.24 - 0.30%. The leaf/stem ratio of genotypes ranged from 0.72 to 1.60. Considering current results from different genotypes, genotype has a high effect on feed quality. In addition, the rate of leaf/stems is also very effective on feed quality. So, in the selection of alfalfa genotypes, attention should be paid to the leaf/stem ratio as well as the yield.

(E-36) MORPHOLOGICAL AND CHEMICAL ANALYSIS OF ZIZYPHUS JUJUBA MILL. FRUITS FROM TIMIŞOARA BOTANICAL PARK

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Zizyphus jujuba Mill. belongs to the Rhamnáles order, Rhamnáceae family, *Rhamnus* genus. The genus includes about 40 species native to tropical and subtropical regions of both hemispheres, as well as the Mediterranean region. Species Zizyphus jujuba Mill. it is native to SW Asia, has ornamental features and is found spontaneously on the Danube coast. The first cultivated varieties were introduced at the Faculty of Horticulture in Bucharest in Shanxi Province, China in a joint research project in 1997. In our study, the fruits were harvested from two genotypes in the Botanical Park of Timisoara. For the harvested fruits were analysed: fruit weight (g), seed weight (g), fruit length (mm), fruit width (mm) and chemical analyses were performed: soluble dry matter (%), C vitamin (mg 100 g⁻¹), total potassium content (mg 100 g⁻¹) and protein (%). In the analysed fruits, the soluble dry matter varied between 28.3-29.81%, C vitamin between 247.97-288.17 mg 100g⁻¹, proteins between 4.84-5.63% and potassium between 79.53 -79.63 mg 100 g⁻¹.

(P-37) STUDIES ON THE STIMULATION OF CATALPA BIGNONIOIDES WALT. SEED GERMINATION

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Catalpa is a tree with an attractive ornamental value and compact shape. *Catalpa bignonioides* Walt. is a tree with heights of up to 35 meters and a large trunk. It is an exotic species in North America areal. It grows well in a warm and humid climate, on alluvial, fertile, deep, temperate soils. It has a light temperament, withstands winter frosts well, but is sensitive to late frosts. The degree of germination varies both between species and within them. Within batches of seeds of the same species varies depending on the origin, year of harvest and individual trees. There are different methods and techniques for overcoming drowsiness depending on the seeds. Various pre-treatments are used such as scarification and hot and cold aeration to stimulate the embryo. The paper presents the stimulation of seed germination at catalpa, using different concentrations of Nitragin: 0.1%, 0.3%, 0.5%, 0.7%, 0.9% and following the seed germination interval.

(P-38) NEW ROSES VARIETIES OBTAINED AT HORTICULTURAL RESEARCH STATION CLUJ, ROMANIA

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Rosa L is an excellent landscaping plant, famous for its diversity of colors, perfumes and shapes. At the University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca- Horticultural Research Station Cluj, Romania (USAMV -HRS Cj), in 2018- 2020, two new landscaping rose cultivars, Puritate and Bogdana were evaluated for their decorative value, resistance to frost and to diseases. Ornamental traits considered: the flower's colour, the plants' habitus, flowering waves and the ways of using the cultivars in various landscaping situations. The decorative value was determined over a three years evaluation. Fourteen characteristics were analyzed according to the group to which each cultivar belongs. cultivar. Puritate and Bogdana. presented valuable Both characteristics, for both decorative traits and in response to presented environmental conditions A11 cultivars valuable characteristics, for both decorative traits and response to environmental conditions. These cultivars can be used in various landscaping situations such as: borders, massifs, hedges, small covered groups and also as cut flowers

(P-39) INFLUENCE OF MAGNESIUM (MG) SOURCE ON THE CORDYCEPS MILITARIS (L.) MUSHROOM MYCELIUM GROWTH

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Magnesium (Mg) is an element with a role in oxidation processes. The optimal concentration of magnesium for the development of fungi is associated with an optimal concentration of phosphorus (P), which through its essential constituents, is an important element for the existence of biological systems in nature through nucleic acids, phosphoglycerides, phospholipids. phytin phosphates. and Magnesium has a role in the activity of certain enzymes and in respiration, being a component of protein substances with a special importance for microorganisms being included in reducing and phosphorylating enzymes and for protein synthesis. In this study, magnesium sulphate (MgSO₄), which is an accessible source of both magnesium and sulphur, as well as magnesium carbonate (MgCO₃) were used as sources of magnesium, both being used in different concentrations in the growth medium. The culture medium or substrate influences the growth of the fungal mycelium, through the mineral, nutritive and stimulating substances in their composition. Using experimental culture media, an isolated tissue culture was performed from 2 strains of Cordyceps militaris (L.) fungus. The culture was performed in Petri dishes, incubated at a temperature of 24 ° C, aiming to increase the mycelium for 15 days. The highest increase was recorded by strain CI 32 with the addition of magnesium sulphate.

(P-40) INFLUENCE OF THE CULTURE SUBSTRATE DISINFECTION METHOD ON THE DEVELOPMENT OF *CORDYCEPS MILITARIS* (L.) MUSHROOM MYCELIUM.

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Cordyceps mushroom has been used for hundreds of years in traditional Chinese medicine to treat various ailments. Naturally, this fungus lives at high altitudes between 3500 and 4000m in the Himalayan mountains in Nepal, Bhutan, India and Tibet from where it is harvested and prepared for mixing in various pharmaceutical preparations. Unlike this method of obtaining this valuable mushroom, over time different methods of cultivation of this species have been experimented, which in principle consist in multiplying the spores of the fungus on a special germinal substrate that eliminates from the breeding process the incubation period in an insect. This study was aimed the influence of disinfection method of the culture substrate on the development of A 1121 and A 1212 mycelium strains of the Cordyceps militaris (L.) mushroom. Pasteurization of the culture substrate was applied at 80 °C and 95 °C for 30 and 45 minutes, respectively, and sterilization at 105 °C and 121 °C, respectively, for 15 and 30 minutes, respectively. Strain A 1121 showed more intense development on the pasteurized substrate at 95 °C for 30 minutes, and strain A1212 performed better on the sterilized substrate at 105 °C for 15 minutes.

(P-41) DYNAMICS OF CERTAIN CHEMICAL COMPONENTS IN TOMATO FRUIT (*LYCOPERSICON ECULENTUM* MILL.) MAINTAINED AT DIFFERENT TEMPERATURES AFTER HARVEST

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Traditional tomato varieties are of particular importance for vegetable cultivation, by capitalizing on the diversity of local populations and increasing the number of crops. The study of local populations of cultivated tomatoes determines the accumulation of additional knowledge on how the shape, size and taste of fruits evolve, helping to identify new varieties with a role in improving the productivity, quality and nutritional value of tomatoes. In this paper, 2 local varieties from the Cluj county area were studied, from the point of view of the dynamics of certain chemical components when, after harvest, the tomatoes are stored at different stages of maturity. The lowest water loss, of 7.5%, was presented by the pink variety, stored for 7 days at a temperature of 8 °C. Vitamin C was better preserved in the case of the red variety, presenting after 7 days of storage at 8 °C, values of 27.23% at green maturity and 46.58% at consumption maturity. The pectic substances, in the case of the studied varieties, do not show significant variations depending on the maturity phase or the storage method, these registering values between 0.11 and 0.27%.

(P-42) THE INFLUENCE OF BLANCHING TREATMENT ON THE QUALITY OF DEHYDRATED PLUMS

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Dehydrated plums are distinguished by a pleasant taste, but at the same time they are also distinguished by a special nutritional value, which brings many benefits to human health. After apples, plums are the most cultivated fruits in Romania. Quality as a notion is a general and specific characteristic being represented by certain features that condition both the marketing and the use of the finished product. The physical condition of dehydrated plums is determined by the anatomical structure, structural firmness, water content and appearance. The composition of the soluble dry matter is influenced by the variety, the degree of maturation, at which the raw material has been processed and by the qualitative changes undergone by each component, during dehydration. In this paper, we followed the influence of blanching treatment on 4 varieties of plums, dehydrated in a stream of warm air, at a temperature of 70 °C. The fruits taken into analysis were characterized by a water content of 75-84%, soluble dry matter 9-24%, total sugar 7-13%, acidity 0.45-0.98% and 2-17 mg ascorbic acid. After dehydration, the analysed parameters were as follows: 16-24% water, total sugar 31-51%, total acidity 1.1-2.3%.

(P-43) RELATIONSHIPS BETWEEN FORAGE YIELD AND CHARACTERS IN SOME NARBONNE VETCH (*VICIA NARBONENSIS* L.) CULTIVARS SOWN IN EARLY SPRING AT SUBTROPICAL CONDITIONS

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The aim of this research was to determine relationships among forage yield and its some characters in Narbonne vetch cultivars sown in early spring at subtropical conditions. This investigation was conducted between 2016-2018 years at Tekirdağ Namık Kemal University, Faculty of Agriculture, Field Crops Department Research and Experimental Area in randomized complete block design with three replications. Three Narbonne vetch (Bozdağ, Dikili and Özgen) cultivars were used. The plant height, number of branches per plant, stem diameter, number of leaves per plant were determined in ten plants. The plant height, number of branches per plant, stem diameter, number of leaves per plant, herbage and hay yields ranged from 40.75-43.09 cm, 1.67-2.72, 5.70-6.57 mm, 10.27-13.73 t ha⁻¹ and 2.28-2.89 t ha⁻¹, respectively, in Narbonne vetch cultivars. A statistically significant and positive relationships were determined between herbage yield and hay yield, between stem diameter and herbage yield and between stem diameter and hay yield. The correlation coefficients analysis showed that the strongest effective trait on herbage yield in Narbonne vetch was the stem diameter. Stem diameter trait can be considered as the primary selection criteria for improving herbage yield in Narbonne vetch at early spring sowing in similar ecological conditions.

(P-44) DETERMINATION OF SEED YIELD AND ITS SOME CHARACTERS OF SOME HUNGARIAN VETCH (VICIA PANNONICA CRANTZ.) GENOTYPES

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The study was conducted between 2015-2017 at Tekirdağ Namık Kemal University, Agriculture Faculty, Field Crops Department, Research and Experimental Area and Atatürk Soil, Water and Agricultural Meteorology Research Institute Research and Experimental Area (Kırklareli) in randomized block design with three replications. Five Hungarian vetch genotypes (cv. Egebeyazı and cv. Sariefe, 47.1, 47.2, 56.3 lines) were used as material. Plant height (cm), number of branches per plant (pcs), number of pods per plant (pcs), number of seeds per pod (pcs), thousand seed weight (g), seed vield (t ha⁻¹) were determined. The characters which were determined in the study varied between; plant height 76.50-97.97 cm, number of branches per plant 3.87-5.08 pcs, number of pods per plant 17.20-24.35 pcs, number of seeds per pod 3.77-5.47 pcs, thousand seed weight 32.08-39.15 g, seed yield 0.70-1.08 t ha⁻¹. According to seed yield results 56.3 and 47.2 genotypes can be grown for seed in Tekirdağ, Kırklareli and similar ecological conditions.

(P-45) RESULTS REGARDING ON THE DYNAMICS OF THE ATTACK OF THE PATHOGEN PLASMOPARA VITICOLA IN THE CLIMATIC CONDITIONS OF THE YEARS 2019-2020, IN THE SEGARCEA WINE FARM-ARCHDIOCESE CRAIOVA, DOLJ COUNTY

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The Archdiocese of Craiova owns 40ha cultivated with vines within the locality of Segarcea, the main varieties being both varieties for Merlot, Cabernet Sauvignon red wines, and varieties for white wines: Sauvignon Blanc, Tămăioasă Românească and Chardonnay.

Segarcea locality is located in an area with temperate-continental climate, where the average annual temperature is 11 degrees Celsius and the average amount of precipitation is about 510mm / year, according to statistical data.

In the climatic conditions of 2019-2020, the National Phytosanitary Authority, through the Dolj Phytosanitary Office, issued warning bulletins based on the basic criteria: phenological, biological and ecological of the vine.

The phytopathogenic agent of the vine Plasmopara viticola, was monitored in terms of the evolution of the attack on the crop, in correlation with the climatic conditions and the way of reaction of the varieties to the attack of the phytopathogen was observed.

(P-46) DETERMINATION OF SUITABLE WINTER CHICKPEA (*CICER ARIETINUM* L.) VARIETIES UNDER KAHRAMANMARAŞ CONDITIONS

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This study was conducted with the cultivars of Işık-05, Azkan, Sarı 98, Hisar, Çakır, Aydın 92, Yaşa-05, Menemen 92, Cevdetbey, Çağatay, Aksu and two domestic species on Kahramanmaras East Mediterranean Transitional Zone Agricultural Research of Institute's fields in 2014 - 2015 seasons. Trials were designed based on random blocks test pattern with 3 replications and quality traits of plant height, first fruit height, branch number, bean number, grain number, seed weight, yield per decare, 100 grain weight were investigated.

According to plant height, first fruit height, branch number, bean number, grain number, seed weight, yield per decare, 100 grain weight results of cultivars, the differences between species were found important.

It was found that the grain yield of cultivars was ranging between 425.400 - 267.933 kg da-1 and Çakır had the highest grain yield with 425.400 kg da-1 and Hisar had the lowest grain yield with 267.933 kg da-1.

(P-47) THE EFFECTS OF NITROGEN AND ZINC FERTILIZERS AT DIFFERENT DOSES ON MAIZE YIELD AND SOME YIELD ELEMENTS UNDER KAHRAMANMARAŞ CONDITIONS

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Corn (*Zea mays* L.) it has been one of the grains in demand. Corn both in human and animal nutrition. It is used in industrial areas. High grain yield and silage yield per decare.

Due to the starch, sugar and oil in the grain content of the farmers, many industrial areas.

It is a favorite plant. In this study, in order to determine the need of corn plant for nitrogen and zinc fertilizer in Kahramanmaraş Region, it was conducted in 2020 in Kahramanmaraş University Field Crops Department. The study was carried out in 3 replicates according to the randomized blocks trial plan. Nitrogen fertilizer (Urea) doses were given to the parcel at 0 kg / da (N0), 15 kg / da (N15), 30 kg / da (N30) N from the soil. When the plant had 3-4 leaves, zinc fertilizer was applied in liquid form on different amounts of 0 ppm (Zn0), 2500ppm (Zn25), 5000ppm (Zn50) on the leaf. Dekalp DKC6890 hybrid corn variety was used.

According to the results of the study, nitrogen \times zinc applications in corn; first cob height (49.56-57.96 cm), number of nodes (7.00-7.73 pieces), cob length (14.83-18.56 mm), thickness of the cob (41.65-48.71 mm), number of rows in the cob (26.86-36.76 pieces), number of grains in the cob (438.40-613.00 units / cob), the ratio of the cob sheath to the cob weight (1.33-2.31%), the grain yield (817.46-1156.8 kg / da) were found to be significant. The effect on plant height (135.7-154.3 cm), stem diameter (15.32-17.69 mm), single cob yield (1.21-2.18 g) and thousand grain weight (288.43-352.20 g) was found to be insignificant.
(P-48) THE INFLUENCE OF DIFFERENT CROP ROTATIONS AND FERTILIZATION SYSTEMS ON CHERNOZEM SOIL BULK DENSITY

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The soil health can be deduced by chemical, biological and physical properties. This triad of features influence each other and equally determines soil quality and fertility. The paper includes the study regarding physical state of the chernozem soil, characterized by bulk density – one of the most used soil physical property that estimate edaphic volume (soil compaction).

The study took place in long-term field experiments of the Selectia Research Institute of Field Crop located in the North part of Moldova. The experimental data were obtained in 2019-2020 agriculture year – characterized from a meteorological point of view with precipitations deficiency and higher temperatures compared to the multiannual average. The chernozem soil bulk density, studied in different crop rotations and fertilization systems, was determined under winter wheat agrocenosis after harvesting in the 0-40 cm soil layer.

The research has shown that chernozem soil bulk density register more favorable indices in crop rotations which include: perennial legumes and grasses in a mixture or only perennial legumes; less row crops - which means minimizing tillage (mechanic disturbance of soil). Regarding fertilization systems – the soil compaction is lower on the plots with adequate amount of organic fertilizer.

(P-49) THE ROLE OF THE APPLICATION OF CARBOHIDRATES IN REDUCING THE NEGATIVE EFFECTS OF SALT STRESS DURING GERMINATION

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Saline stress is one of the most important reasons for reducing the physiological processes in plants, and wheat is one of the crops most severely affected by this abiotic factor. Specialists have research to identify methods to alleviate the effects of saline stress, especially during seed germination. To the Laboratory of Plant Physiology from the University of Pitesti, several experiments were carried out to study the effects of saline stress and to test the methods to reduce its negative effects. In this experiment we tested the influence of two NaCl solutions, 100 mM and 200 mM, alone and in combination with two glucose solutions, 0.5 mM and 50 mM, on the germination and growth of wheat seedlings. Specialists tested higher and lower concentrations of glucose or other carbohydrates at different stages of plant growth and development, obtaining different results. In the germination phase of wheat, in the case of saline stress caused by 100 mM and 200 mM sodium chloride solutions, glucose did not show beneficial effects.

(P-50) PRELIMINARY STUDY REGARDING THE GROWTH AND YIELDING PROCESSES OF TWO ARONIA MELANOCARPA CULTIVARS IN THE PEDOCLIMATIC CONDITIONS OF MARACINENI-ARGES AREA

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The present paper studies the growth and fruiting processes of two Aronia melanocarpa cultivars, 'Melrom' and 'Nero', in the pedoclimatic conditions of the Muntenia (Arges) area, Romania. On average, over the whole experience, the 'Merlom' cultivar recorded a bush volume of 0.72 m3, annual vegetative growth of 0.38 m3, productivity of 1.88 kg of fruit per plant and a ratio between fruit yield and the annual vegetative growth of 6.54 kg/m3. In the 'Nero' cv., the volume occupied by the aerial part of the bush was 1.98 m3, with an annual vegetative growth of 0.43 m3, an yield of 3.14 kg of fruits per plant, and, reported to the annual vegetative, fruit production was 10.64 kg/m3. Although the volume of the aerial part of the plant and the fruit production per plant were significantly higher in 'Nero' cultivar, 'Melrom' was noted by a larger ratio of fruit production to the unit volume of the aerial part of plant, of 3.28 kg/m3. As resulted from our study, both cultivars presented valuable vielding potential.

(P-51) EVOLUTION OF POLYPHENOLS AND FLAVONOIDS LEVELS IN LEAVES, ENDOCARP AND KERNEL OF THREE JUGLANS REGIA L. CULTIVARS

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This paper studies polyphenols and flavonoids level evolution in Juglans regia L. leaves and endocarp during the growing season, as well as compounds evolution in the walnut kernel for fully mature picked nuts, stored for eight months at room temperature. Both compounds, polyphenols, and flavonoids were significantly influenced by cultivar, harvest moment, and, respectively, by the storage time. The highest content of polyphenols was found in 'Jupanesti' cultivar's leaves, 'Vina' cultivar's kernel, and 'Franquette' cv. endocarp. Also, nut endocarp and leaves samples harvested in July and nut kernel stored till next March contained maximum polyphenols levels. The highest flavonoid content was determined for 'Vina' cultivar's leaves, 'Franquette' cultivar's fruit endocarp, 'Vina''s kernel, leaves and endocarp sampled in July and nut kernel stored until March. For the entire experiment, maximum polyphenols level was found in 'Jupanesti' cultivar's leaves harvested in July. Flavonoids reached their highest level in case of 'Franquette' kernel stored until March. The three studied cultivars: 'Jupanesti', 'Vina' and 'Franquette' can be valuable sources of phenolic compounds.

(P-52) STRUCTURE OF A FLOWER CHELIDONIUM MAJUS VALUABLE MEDICINAL PLANT

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Celandines (*Chelidonium*) is a member of the *Papaveraceae* family. It is a perennial herbaceous erect plant 30-100 cm tall. Stem has a round shape with milkweed. The leaves are pointed, ovate, can be stem and basal. Basal leaves are collected into the rosette; stem leaves are placed alternately. The flowers of celandine plants are numerous and have a yellow color. The average perianth size is 2.1 ± 0.01 cm.

The flower is bisexual, the number of stamens is indeterminate and varies greatly from one flower to another. Stamens painted in the yellow color, arranged in circles inside the flower. Anthers elongated, they are consisting of two parts. Pistil one. Pistil is in the middle of the flower. Flower receptacle rounded, bilobed.

The fruit is a naked box of narrow-cylindrical shape, has numerous, small, shiny seeds. Celandine juice contains toxic substances that can cause burns on human skin. However, celandine also contains numerous alkaloids that are currently being actively studied as pharmacological raw materials.

Celandine herb contains alkaloids and other nitrogen-containing compounds (0.27-2.25%): coptisin, stylopine, d, l-stylopine, l- α -stylopine, l- β -stylopine, protopine, chelidonine, chelerythrine, sanguinarine, dihydrosanguine , dihydrocheleritrin, coryzamine, chelirubin, α -allocryptonine, allocryptonine, berberine, sparteine, choline, histamine, tyramine, methylamine; organic acids (1.4-4.32%): citric, succinic, malic; essential oil (0.01%), saponins, ascorbic acid (170 mg%), carotene, flavonoids, tannins (2.09-7.64%), chelidonic acid, higher aliphatic alcohol chelidoniol.

Drugs based on celandine extracts have a wide range of antitumor effects, stimulate the transmission of nerve impulses, enhance smooth muscle contraction; increase the secretory function of the sweat and digestive glands; activate skeletal muscle contraction. Sanguiritrin has a pronounced bactericidal effect on gram-positive and gram-negative bacteria, yeast and yeast-like fungi, Trichomonas. This plant is widely used in ophthalmology.

(QL-01) PERIPHERAL BLOOD MITOCHONDRIAL DNA ALTERATION DURING SYSTEMIC LUPUS NEPHRITIS

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The investigation of mitochondrial DNA (Mt-DNA) alterations could impart light on the involvement of mitochondria in the pathophysiology of Systemic Lupus Erythematosus. The purpose of this study is to examine the peripheral blood mitochondrial DNA copy number variation in Lupus Nephritis patients and also to find out it's correlation with amount of protein present in urine. The significant correlation could aid in the inspection of mitochondrial involvement, particularly in Lupus Nephritis. Two mitochondrial genes encoding MT-CYT and MT-TL1 were measured quantitatively by qPCR in whole blood of 17 SLE patients and 15 healthy subjects with similar gender (female: male ratio) and age group. Amount of mitochondrial genes MT-CYT and MT-TL1 was 1.69 and 1.26 fold higher respectively in patients. The significantly higher amount of protein detected in lupus nephritis patients (129.4±116.4 mg/dl) in comparison to normal subjects (25.3 ±10.7 mg/dl). No significant correlation was established between Mt-DNA quantity and proteinuria. Alteration in mitochondrial genes reflects the possibilities of altered mitophagy or mitochondrial biosynthesis during SLE. These findings are required to be further validated by studying mitophagy and biogenesis during SLE in details.

(QL-02) ACRYLAMIDE IN FRENCH FRIES PREPARED IN AT HOME AND FAST FOOD CONDITIONS

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French fries, prepared either at home or in fast food restaurants, are one of the most desired dishes of Romanians and the main contributors to the intake of acrylamide (AA) through the diet. The aim of this study was to investigate how the frying in at home and fast food conditions influences the AA level of French fries and to establish a correlation between AA content and the colour parameters. Potatoes from the Queen Anne variety and two types of oil (sunflower, palm) were used. Frying in at home conditions was realized in a pan in sunflower and palm oils (103°C for 13-15 minutes) and the frying in fast food conditions was made in a fryer using palm oil (170°C for 11 minutes). For AA determination was used the GC-MS/MS method. The level of AA in French fries when using palm oil showed a variation between the two frying modes: $541.65 \pm 2.49 \ \mu\text{g/kg}$ for at home frying and $684.37 \pm 2.34 \ \mu\text{g/kg}$ for fast food frying. Potatoes fried in sunflower oil in at home conditions had the highest level of AA (764.58 \pm 2.72 µg/kg) compared to those fried in palm oil. Linear correlations between AA levels, expressed in % d.m., and the colour parameters $(L^*, a^* \text{ and } b^*)$ were found: as the level of AA increased, the parameters L^* and b^* ($R^2 = 0.80$) decreased, and a^* increased ($R^2 = 0.68$).

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(QL-03) EFFECT OF REPEATED DEEP-FAT FRYING OF FRENCH FRIES IN SUNFLOWER AND PALM OILS ON THE ACRYLAMIDE CONTENT

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The study aimed to investigate the influence of repeated frying processes of potatoes in a fryer on the acrylamide content of French fries. For deep-frying, potatoes of the Asinaria variety, sunflower and palm oils were used. For each oil type, five frying cycles at 170°C, for 6 min were performed and the acrylamide content of the final product was analysed using the solid phase extraction (SPE) technique and the GC-MS/MS method. The acrylamide content increased in the case of sunflower oil in the first three frying cycles, while for palm oil it increased in the fourth frying cycles, then a decrease was recorded. The mean acrylamide content of French fries samples fried in sunflower oil (1477.07 µg/kg) was higher than the one of French fries fried in palm oil (1258.95 µg/kg). For all samples analysed, the acrylamide content exceeded the benchmark level of 500 µg/kg settled by the EU 2017/2158. The acrylamide content of French fries was correlated with the colour parameter L^* .

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(QL-04) INFLUENCE OF POTATO VARIETY AND TYPE OF OIL USED IN FRYING POTATOES ON ACRYLAMIDE LEVEL

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French fries are very consumed food products in fast-foods, restaurants, as well in consumer households. During frying process, the chemical contaminant acrylamide (AA) is formed, which is the result of the reaction between the amino group of asparagine and the carbonyl group of reducing carbohydrates (mainly glucose, fructose and maltose). The aim of this study was to investigate the influence of potato variety (Asinaria, Marvis) and type of oil (sunflower, palm) used on the level of AA formed in potatoes fried in fast-food conditions. The AA content was determined by GC-MS/MS using the SPE technique. For both potatoes varieties, the use of sunflower oil when frying potatoes led to a higher AA level ($288.11 \div 295.86$ μ g/% d.m.) compared to French fries fried in palm oil (227.44 \div 242.82 μ g/% d.m.). The AA level was correlated with the content of reducing sugars in the composition of the potato variety. The Asinaria variety which had the highest content of reducing carbohydrates (3.92% d.m.) determined the highest level of AA. Correlations between the AA level and colour parameters L^* and a^* were found: as the level of AA increased, the colour parameter L^* decreased and the parameter a* increased. The potato variety and type of oil used for frying influenced the AA level formed in French fries.

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(QL-05) USING METAPHORS TO REDUCE ANXIETY IN ADOLESCENTS

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The age of adolescence represents few years of uncertainties and unknown in the development and evolution of a young people. In the search of his own identity, the adolescent needs symbols in order to access the unconscious personal resources. Working with metaphors in the process of counselling and psychotherapy facilitates new signification and sense for the adolescent that experience the most provocative period of his life. This article focuses on the benefits of using metaphorical techniques to improve emotional health in adolescents. We supposed that using a brief experiential metaphoric exercise (My own relaxation and recreation place) would allow the group members to improve their present emotional anxiety experience. The adolescents became more aware of their inner resources (such as tranquillity, calm, trust and hope) and needs.

Present finding indicates the effects of expressive-creative methods on anxiety state. Using metaphor in the therapy of adolescents could be an important method to reduce the anxiety and to help them understand the role of their emotions in the process of personal development.

(QL-06) THE EFFECTS OF CREATIVE MEDITATION ON PSYCHOLOGICAL DISTRESS AND AWARENESS CAPACITY DURING COVID 19 PANDEMIC

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Creative meditation is an effective, innovative and safe psychotherapeutic intervention that may improve psychological health and well-being during the Covid 19 pandemic. Creative meditation creates a safe place for self-awareness and selfexpression, allowing the discovery and development of personal resources, converting vulnerabilities into resources and facilitating personal development. The aim of the present study is to investigate the immediate effect of creative meditation on emotional distress and awareness capacity (acceptance and mindfulness). 22 students participated in a short experiment of a single online creative meditation session with pre and post surveys. An immediate significant variation in the participants' emotional experience was observed. Creative meditation helped participants to feel a positive affective state which facilitated awareness and creative emotional and cognitive expression. Statistical results revealed a decrease of general affective distress, and a lower level of negative emotions (sadness, anxiety, frightened, concerned). The personal resources could be first actualized through this emotional experience and then it could be invested into meaningful actions.

(QL-07) HEALTHY LIVING AFTER TRAUMATIC EXPERIENCES: DISSOCIATION, AGREEABLENESS, AND SELF-ACTUALIZATION

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One area of great interest in clinical psychology, but also in psychology in general concerns the processes which happen when a person faces a traumatic experience, the consequences such an experience may have on the psychological, but also the somatic functioning. Dissociation, a mechanism set in motion by stressful described from several perspectives, from events, was а psychopathological or a phenomenological one, and continuing, with the recent advances in technology, with the associated biological mechanisms. Our main objective was to investigate this well-known mechanism in association with aspects characterizing healthy living (maturity, agreeableness, and self-actualization), in an effort to deepen the understanding of posttraumatic growth and to develop interventions that may transform traumatic events in evolutive experiences. We conducted a correlational study, using psychometric (Dissociative Experiences Scale II and ABCD-M) and statistical methods. The data showed that dissociative experiences are negatively associated with the maturity and positively with the agreeableness and self-actualization. Our results contradict the misconception that people who have suffered from traumatic experiences may have a higher level of aggressiveness, and, more important, they argue that facilitating self-actualizing experiences may foster posttraumatic growth and healthy living after a traumatic event.

(QL-08) FOCUSING ON SELF INSTEAD OF REACTING TO STRESSORS CHARACTERIZE PEOPLE WITH NORMAL BLOOD PRESSURE

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Different lifestyle factors have been investigated in relationship with the blood pressure. From a psychological perspective, most of the studies focused on the effects different stressors have on the psychological and biological functioning that may lead to increasing blood pressure. Our objective was to investigate the differences between persons with arterial hypertension and those with normal blood pressure in terms of coping mechanisms. The main hypothesis was that there are differences in the use of different strategies to cope with daily challenges for persons diagnosed with arterial hypertension. We used psychometric (The Proactive Coping Inventory and COPE) and statistical methods. The statistical analysis highlighted differences in the use of mental disengagement, behavioral disengagement, active approach, denial, humor, substance use, planning (especially strategic planning) coping by seeking emotional support, and avoidance. Also, on a subjective level, persons with normal blood pressure reported feeling more distressed. Overall, the results of the study argue in the favor of the idea that awareness of personal experience, especially the affective states, even though negative, without continuing the confrontation with external obstacles, even on a mental level, but the use of humor or seeking emotional support a better functioning in terms of blood pressure.

(QL-09) PSYCHOLOGY STUDENTS' PERCEPTIONS ON THEIR QUALITY OF LIFE DURING COVID-19 PANDEMIC

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The COVID-19 pandemic has affected many lives and has a considerable social and economic impact. In response to this crisis, governments have implemented a series of protection measures: lockdown, social distancing, wearing a mask etc. Studies and statistics on the effects of the COVID-19 pandemic indicate low levels of mental and physical well-being, depression, fear of uncertainty, increasing inequality due to job loss, increased stress due to financial matters, social isolation etc. Specialists studying these effects draw attention to the importance of taking urgent measures to mitigate them.

The current study has two main objectives: the evaluation of Psychology students' quality of life in COVID-19 pandemic time and the exploration of their perceptions on changes in the quality of life during this time. We assess the quality of life using Quality of Life Scale developed by Burckhardt et al., which measures five conceptual domains of quality of life: material and physical wellbeing, relationships with other people, social, community and civic activities, personal development and fulfilment, and recreation. The results show the main differences related to various domains of quality of life before and during COVID-19 pandemic, according to students' perceptions.

(QL-10) IDENTIFICATION OF THE NUTRITIONAL STATUS AND EATING HABITS OF A REPRESENTATIVE GROUP OF PREGNANT WOMEN

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Pregnancy is a special moment in a woman's life, but it is also a very demanding physiological condition from a nutritional point of view. There are special nutritional requirements in pregnancy, in which the intake of nutrients exerts its action both on woman and the conception product. Therefore, the balance and diversity are the key of a proper nutrition during the pregnancy. Combining food categories is the best way to ensure nutritional balance during pregnancy period.

A market research was performed on a representative sample at national level of 120 persons, in order to identify the nutritional status of pregnant women in this group.

Computer assisted telephone interviews (CATI), using the database of people pre-recruited through face-to-face dialogue, was the data collection methodology, used to perform the market research. The market research highlighted the diet structure of the studied group, the categories of foods consumed weekly by the group members, as well as their frequency of consumption. The results of the study indicated a varied diet of pregnant women, but the frequency of consumption should be reviewed for certain food categories, thus:

- Increased for: milk and dairy products, fish, oily fruits

- lower, in fatty foods and salt

(QL-11) THE INFLUENCE OF BISPHENOL A ON ENVIRONMENT LIFE

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Bisphenol A (BPA) is a synthetic organic compound with the chemical formula $(CH_3)_2C$ (C_6H_4OH)₂ belonging to the group of diphenylmethane and bisphenol derivatives, with two hydroxyphenyl groups. It is widely used in the manufacture of polycarbonate plastics and epoxy resins. Polycarbonate plastics have many applications, including use in some food and beverage packaging, bottles, compact discs, impact-resistant safety equipment, and medical devices, including those used in hospitals.

For example, it has been found that BFA is found in foods in concentrations of ordinal ppb (parts per billion) as follows: Coconut milk - 78, 1 ppb, packaged soup 70 ppb, packaged meat 65 ppb, vegetables / tomatoes 63.8 ppb, beans 34.1, juices 31.2 ppb, fish 24.6 ppb, fruit 6.8 ppb, etc. (1). Bisphenol A is a toxic compound, difficult to biodegradable, harmful to aquatic flora and fauna and to humans. In human bodies causes disorders of endocrine activity. An increased risk of breast and prostate cancer, type 2 diabetes, obesity, and even early puberty of girls has been identified.

Detailed investigations have been carried out into technologies to remove bisphenol from aqueous solutions and the effect of bisphenol on microorganisms. Thus, determinations were performed every 24 hours, finding that the inhibitory effect of bisphenol has a maximum on the first day after administration, after which the microorganisms acquire resistance. pH values stimulate the effect of bisphenol, which is soluble and more easily absorbed at acidic pH. The obtained results showed that a special importance on the inhibitory effect of bisphenol has its concentration, along with time and pH factors. There is a direct proportionality between the pH value and the concentration, which explains the more efficient action of microorganisms at a concentration of 0.01 mg / L.

(QL-12) RESEARCH ON RADON-222 CONTENT IN DRINKING-WATER SAMPLES COLLECTED FROM SIBIU COUNTY

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The isotope radon-222, an inert water-soluble gas that may contaminate water, represents a potential risk for human health, including cancer risk. The present study reports the evaluation of the Rn-222 concentration in drinking-water samples collected in 2020 from 10 sources located in Sibiu County, as measured using the pulse ionization chamber. Values of Rn-222 varied from 0.0549 to 37.4770 Bq/l, with an average of 4.586 Bq/l. These values were below the maximum level of 100 Bq/l recommended by WHO and EU Directive/Euratom. With the exception of the sample from groundwater, the others showed Rn-222 values below the maximum level of 11.1 Bq/l recommended by US EPA.

In the case of impermeable soils, this element floats inside the cracks until it reaches the atmospheric air, so it is harmful to human health both in water and in the air.

Evaluation of radon concentration in water, in particular from groundwater sources is essential for the management of remedial solutions.

(QL-13) A WORRYING DECLINE IN ACUTE MYOCARDIAL INFARCTION ADMISSIONS WITH PARALLEL INCREASE IN CASE FATALITY SINCE THE OUTBREAK OF COVID-19 – OUR EXPERIENCE

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Intro. According to peer medical journals, since pandemia has been started, several European countries reported declines in acute myocardial infarction (AMI) admissions.

Goal. To observe what's the matter in our area, checking the hypothesis that there is a similar trend with the hospitals from Italy and Austria.

Methods. All cases of ST Elevation Myocardial Infarction (STEMI) from Argeş County are concentrated in USTACC – the coronary care unit of the Emergency Argeş County Hospital Piteşti. We analysed the registry of this unit comparing the following parameters: the total number of hospital admissions in USTACC, the number of AMI admissions, the number of STEMI admissions, the number of non-STEMI admissions, the number of stent insertions and the number of in-hospital deaths, in pre-pandemic vs. pandemic eras.

Results. Please see the following table and observe the dramatic decrease in 1-5 parameters with increase of AMI in-hospital deaths:

Nr.	Time intervals	1/4/'19 – 31/3/'20	1/4/'20 – 31/3/'21
1.	Nr. of USTACC admissions	1163	884
2.	Nr. of AMIs	309	203
3.	Nr. of STEMIs	127	105
4.	Nr. of non-STEMIs	182	98
5.	Nr. of stent implantations	301	103
6.	Nr. of in-hospital deaths	12	15
	with AMI		

Study Limitations. Collecting clinical data during a pandemic emergency is challenging and exposed to several risks. We have done our best to avoid underreporting in our observational study.

Conclusion. Our study outcomes displays a worring reduction in AMI admissions with a parallel increase in case fatality, in concert with other European countries. Timely adoption of countermeasures must be considered to avoid a large and long-standing social impact.

(QL-14) TOP FIVE REASONS FOR DECREASED ADMISSIONS WITH ACUTE CORONARY SYNDROME DURING THE COVID-19 PANDEMIC IN ARGES COUNTY

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Intro. According to the official registry of USTACC – the coronary care unit of the Emergency Argeş County Clinical Hospital Piteşti, the number of pacients with acute coronary syndromes (ACS) admitted in our institution obviously decreased, since pandemic started.

Our *goal* was to identify the main causes of decrease admissions with ACS. this clinical absenteism.

Methods. In our observational study, we analysed the distribution of the five main reasons during the period 01/APR/2020 - 31/MAR/2021. Because it's hard to interrogate remote patients, we translated the answers of admitted patients to a questionnaire whom central question was: What reason from nearby list, if any, could impede anyone with substernal pain to come into hospital? The distribution on age decades was: 5th decade 9,62%, 6th decade 23,53%, 7th decade 33,16%, 8th decade 26,51%, 9th decade 7,18%. The gender repartition of patients outlined a male prevalence: 61,21% vs. 38,79%.

Our *results* are displayed in the adjacent table.

	-	
	Question	% of
		responders
1.	Patients' fear coming to the hospital and getting	42,7
	infected	
2.	Change in pain perception due to neurological	29,1
	involvement, including COVID-19	
3.	Low levels of physical activity, that would not	11,2
	trigger cardiac symptoms, due to social	
	distancing and economic lockdown	
4.	Bureaucracy in health benefits as a barrier for	7,3
	seeking medical attention	
5.	Concern of becoming a burden on family and	6,9
	friends and lack of social support	
6.	Other causes of clinical absenteism	2,8
	Tetel	100
	Iotal	100

Interestingly, in the first question, the confirmatory responses came mainly from male gender patients.

Study Limitations. Even though collecting clinical data during a pandemic emergency is challenging, by exposing the personnel to several risks, we have done our best to avoid underreporting.

Conclusion. The five central causes for decreased ACS admissions in pandemic era were prioritized. In order to avoid a large and long-standing social impact, timely adoption of countermeasures must be considered to counterbalance the clinical absenteism.

(QL-15) SWITCHING ANTIHYPERTENSIVE THERAPY FROM ACE INHIBITORS TO ANGIOTENSIN RECEPTOR BLOCKERS DURING COVID-19 PANDEMIC – A BALANCED SOLUTION?

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Intro. Sommerstein & Graeni pushed forward the hypothesis that ACE-inhibitors (ACEi's) could act as a potential risk factor for fatal COVID-19 by upregulating Angiotensin Converting Enzyme 2 (ACE 2). ACEi's, Angiotensin Receptor Blockers (ARBs), and MRAs are the cornerstone of a prognostically beneficial heart failure therapy with the highest level of evidence with regard of mortality reduction. *Goal.* To check this hypothesis by a small comparative study with ACEi's, (ARB's), and Calcium Channel Blockers (CCB's) and find a balanced solution. Cough with ACEi's could be, in COVID-19 era, either a confounder, or an aggravation factor.

Method. Searching for genuine evidences, we started a study from 1st April 2020 to 31st March 2021 with 432 consecutive hypertensive patients having within the therapeutic schedule an ACEi's. We splitted this cohort in three branches, each of 144 pts., the first preserving ACEi's, the second switching ACEi's with ARBs, the third shifting ACEi's with CCRs. Gender distribution: male patients 59,18% vs. female patients 40,82%. Age decades distribution: 5th decade 16,79%, 6th decade 20,58%, 7th decade 31,25%, 8th decade 27,15%, 9th decade 4,23%.

Results.

Our institutional data:

		A CE' 1 1	
	ACE inhibitors	ACE1's switched	ACE1's
	preserved	to ARBs	switched to
			CCBs
Control BP	Good 131,3+/-	Good 129,8+/-	130,6+/-11,0
	11,2	10,9	Good
Tolerability	Cough 11,27%	Cough 0,73%	Cough 0,81%
	Extrasystole	Extrasystole	Extrasystoles
	1,18%	0,93%	17,35%
	Other symptoms	Other symptoms	Other symptoms
	1,73%	1,06%	1,35%
Contract	19,56%	19,48%	19,61%
COVID-19			
Death of all	2 by COVID-19	1 by COVID-19	1 by COVID-19
causes	-	-	-
CV death	0	0	1

Study Limitations. In our observational study, we have done our best to avoid underreporting, taking into consideration that collecting clinical data during a pandemic emergency is challenging and exposed to several risks.

Conclusion. Our short study revealed that shifting ACEI's with ARBs may improve parameters in terms of HTN, CV risk and COVID-19: very good results comparing with quite good results with ACEi's or CCBs. In addition, ARBs can be associated with sacubitril, neurohormonal diuretic in heart failure and antiinflamator in COVID-19. In addition, this seems to be a promising solution to prevent long-term consequences of COVID-19.

(QL-16) THE IMPACT OF COVID-19 UPON RHYTHM DISTURBANCES BURDEN – OUR EXPERIENCE

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Intro. COVID-19 pandemic influences human body in a pathogenic way, mainly lungs, brain, heart, but also as a whole. So, the cardiovascular system is a player in the pandemic game. Researchers are concerned about the long-term complications of COVID-19 at cardiac level.

Aim. Our goal was to determine the rhythm dysturbances (RDs) burden related to COVID-19 pandemic: supraventricular, ventricular, and blocks.

Methods. We retrospectively checked the file data of RDs patients admitted in our USTACC (Critical Cardiac Patients Unit), during prepandemic and pandemic eras, respectively. The distribution on age decades was similar in both groups, as follows: 5th decade 8,78%, 6th decade 13,53%, 7th decade 21,16%, 8th decade 21,25%, 9th decade 35,28%, male prevalence of 65,41% vs. 34,59%.

Results are clustered in following table:

Nr.	Time intervals	1/4/'19 – 31/3/'20	1/4/'20 - 31/3/'21
1.	Nr. of USTACC admissions	1163	884
2.	Nr. of Reported Dysrhythmias	394	246
3.	Nr. of Ventricular	129	71
	Dysrhythmias		
4.	Nr. of SupraVentricular	217	134
	Dysrhythmias		
5.	Nr. of Cardiac Blocks	48	31
6.	Number of ambulatory 24 hrs	97	38
	ECG		
7.	Nr. of patients remitted to EP	301	103

RDs burden progressively declined during COVID-19 (p<0,01). There was a 41,39% reduction in the proportion of patients with RDs in our county, with mean COVID-19 incidence. These findings highlight the potential role of real-life stressors in RDs burden. There was a 34,28% reduction in ventricular dysrhythmias needing device therapy, coinciding with measures of social isolation.

Study Limitations. As we all know, collecting clinical data during a pandemic emergency is challenging and exposed to several risks. In order to avoid underreporting in our observational study, we have done our best.

Conclusion. Less patients, even less interest for ICD device. Even if the first 90 days of the interval were lockdown, and we expected, as happened in the USA reports, that social isolation measures decrease stress, in our cohort, the outcomes were obviously contrasting. Probably, the overreaction of ordinary people, adrenalin discharge, panic attacks, anxiogenic TV reportages, could contribute to this deleterious effect.

(QL-17) HOW FEASIBLE ARE THE USUAL GUIDELINE PARAMETERS FOR ASSESSMENT DIASTOLIC DYSFUNCTION IN EVALUATION OF HEART FAILURE WITH PRESERVED EJECTION FRACTION?

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Intro: Heart failure represent a huge burden in developed and also in developing countries, which is characterized by high morbidity and mortality rates. Among patients with heart failure, approximately 50% have normal or preserved ejection fraction of left ventricle (HFpEF). Overall, during time, have been done many speculations. An important question in HFpEF patients is: does diastolic dysfunction has the primary role in this disease and what kind of diastolic abnormalities can cause the symptoms? A wide scale of causative mechanisms for heart failure with preserved ejection fraction have been proposed during the time, including: altered ventricle diastolic performance, left systolic dysfunction. chronotropic incompetence, altered ventriculo-arterial coupling, vasodilator reserve, increased pulmonary impaired vascular reactivity.

Goal: HFpEF is a complex disease, based on different pathophysiological components. Some of the established parameters recommended by the guidelines may have numerous limitations, pitfalls, thus reducing their feasibility. This meta-analysis is meant to assess the feasibility of the usual guidelines parameters, scanning the most important papers on this subject.

Methods: In the period 01.06 2019-01.06.2020 we scanned 88 papers about diastolic dysfunction and the assessment of heart failure with preserved ejection fraction and we discovered that the usual parameter E/e' ratio neither accurately estimates pulmonary arterial wedge pressure (PAWP) nor identifies patients with elevated PAWP

consistent with HFpEF. Almost half (44%) of patients had a discordant E/e' ratio change compared to PAWP. On the other hand, Doppler echocardiography significantly underestimates the peak right ventricular pressure and the time interval to peak right ventricular pressure in pulmonary hypertension, particularly when severe. The differences may be related to orifice geometry (stress echocardiography can have a mean underestimation of 36 ± 21 mmHg).

Conclusions: This meta-analysis shows that many of established parameters recommended by the guidelines have many limitations, pitfalls, in this way their feasibility being reduced. Therefore, more studies and new assessment methods are needed in this disease. By scanning literature, we propose enrich the evaluation algorithm with: Left ventricle end-diastolic volume, diastolic reserve and stroke volume, ventricular-arterial coupling implication, B-lines, the systolic-diastolic duration mismatch impair cardiac reserve and restrict ventricular filling and perfusion.

Diastolic dysfunction assessment in HFpEF patients can be completed with another parameters which can be evaluate at rest and during stress echocardiography like: LVEDV/E/e' index, LAVI, PVAT and B-lines. This approach can explain better the symptoms of patients and the mechanisms of this disease, being also important for the prognostic aspect in HFpEF.

(QL-18) THE ROAD OF FINDING NEW PARAMETERS FOR ASSESSMENT THE PATIENTS WITH HEART FAILURE WITH PRESERVED EJECTION FRACTION: B-LINES A REAL CHALLENGE AND A PROMISING MARKER OF RISK

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Introduction: Heart failure with preserved ejection fraction remains a diagnostic challenge to many cardiologists. Many patients are presenting to cardiologist because of exertional dyspnea and decreased exercise tolerance. Left ventricular diastolic dysfunction is considered the main cause of this type of failure. However, often the patients complaining of heart failure either have the first degree of diastolic dysfunction or the diastolic dysfunction is not present at rest. The studies capturing target diastolic parameters changes, especially using stress echocardiography in heart failure with preserved ejection fraction are relatively poor. Many times, in rest echocardiography we find a grey area where 50% of usual parameters are reacted but the diastolic function is indeterminable. This area requires further investigation to discover new evaluation parameters with reliability, specificity, and high sensitivity.

Methods: The ongoing study is prospective, type case-control and recruited in the last 9 months, known or suspected subjects with heart failure with preserved ejection fraction and a control group of healthy subjects. Up to now, the group of subjects with heart failure has 15 patients, and the control group contain 15 healthy subjects. We performed clinical assessment, laboratory bioclinic tests (including BNP) and resting, respectively stress echocardiography using the cyclogergometer for all patients. We evaluated the usual parameters for diastolic dysfunction and a parameter frequently studied in last 5 years appointed B-lines. We excluded patients with moderate or severe valve disease and patients with lung disease.

Results: There was a statistically significant correlation between the occurrence or increase of the number of B-lines (78%) and the occurrence of early symptomatology during the stress test, respectively the E/e`

increase in patients with heart failure with preserved ejection fraction (p <0.05).

Discussion: Diastolic filling abnormalities and left ventricle systolic dysfunction, beside the degree of functional mitral regurgitation are important factors in generating histologic and hemodynamic changes of the cardiopulmonary vascular system, considering the severity and chronicity process. The alveolar capillary membrane integrity is another important factor which contributes to extravascular lung water (EVLW) accumulation that can be assessed using lung ultrasonography for detecting B-lines. Blines seem to be present in one third of patients with compensated HF at rest and in two thirds after exercise (predicting severe functional and prognostic stage in HF). The increase in LV filling pressures seems to be associated with a larger number of B-lines, but these image EVLW but not pressure, and the integrity of the alveolar-capillary membrane can reveal large individual variations. Therefore, high levels of EVLW could be found even with lowly increases in pulmonary capillary wedge pressure. Exercise increase in B-lines seems to be correlated with exercise elevated E/e' ratio and SPAP, providing the additional information of EVLW development which highlight pulmonary congestion, to the most used noninvasive parameters of increased LV filling pressures (highlighting hemodynamic congestion). On the other hand, it confers valuable prognostic information. Many data also observed that resting SPAP values are not closely related to exercise-induced PH development, being often determined by lack of diastolic dysfunction but because of impaired of LV contractile reserve and worsening mitral regurgitation. Left intraventricular asynchrony at rest may be also a cause which exacerbates the rise in sPAP during exercise. Conclusions:

The partial results obtained in this on-going study shows that B-lines are correlated with diastolic dysfunction and could be used as a marker of risk in the development of heart failure with preserved ejection fraction.

(QL-19) DETERMINATION OF IN VITRO INHIBITION EFFECTS OF LAVANDULA STOECHAS ON SOME ENZYMES

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Lavandula (Lamiaceae) species have been used for centuries for various therapeutic and cosmetic purposes. *L. stoechas,* also known as French lavender, is called the "karabaş otu" in Turkey. This herb, which is used in folk medicine to treat headaches, has a high camphor content (Cavanagh and Wilkinson 2002; Orhan and Aslan 2009).

In this study, *in vitro* inhibition effects of the extracts in the different organic solvents of the above ground parts of *Lavandula stoechas* were investigated on human carbonic anhydrase (hCA) I and II, acetylcholinesterase (AChE), butyrylcholinesterase (BChE) and α -glucosidase enzymes. For this purpose, CHCl₃, ethyl acetate, acetone, MeOH and water extracts of dried and ground *L. stoechas* were prepared. According to the results obtained, 50% enzyme inhibitor concentrations (IC₅₀) of CHCl₃, ethyl acetate, acetone and MeOH extracts were calculated in the ranges 29.49-73.72 mg / mL for hCAI; for hCAII 67.94-111.77 mg / mL; 46.82-50.96 mg / mL for AChE; 48.13-70.00 mg / mL for BChE and 81.53-133.26 mg / mL for α -glucosidase. On the other hand, it was determined that the water extract had no inhibitory effect on enzymes. According to the results of this study, it was first time determined that the inhibitory effect of especially MeOH extract on hCAI was stronger.

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(QL-20) LAUGHTER AND EMPATHY

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At a biological level, laughter was found to help in dealing with pain and suffering. From a psychological perspective, its effects have been studied both at intrapersonal and interpersonal levels. At an intrapersonal level, laughter contributes to self-regulating emotions (especially lowering the trait anxiety), diminishing the expression of anger, internally or externally, the same time with increasing selfacceptance. At interpersonal level, laughing together builds trust, while being laughed at may be traumatic. In the present study, the objective was to investigate the effects of laughter on empathy, awareness, and acceptance of personal experience. The participants in the study watched a situational comedy for 1.5 hours, with different life situations which may seem negative, but presented in an amusing manner, and, very important, with a happy end. At the end, they completed the empathy and awareness questionnaires. Statistical analysis, comparing their scores with those in a non-treatment showed that laughing at the situational comedy condition. significantly influenced almost all aspects of empathy, significantly increasing the personal distress from empathizing with others, without significant influence on empathetic attitudes, affective response, awareness and acceptance of personal experience.

