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ABSTRACT BOOK

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Ulaş ACARÖZ
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Editor's Note

The Third 'International Congress on Biological and Health Sciences' was organized online and free of charge. We are very happy and proud that various health science-related fields attended the congress. By this event, the distinguished and respected scientists came together to exchange ideas, develop and implement new researches and joint projects. There were 28 invited speakers from 15 different countries and also more than 200 submissions were accepted. More than 50 countries contributed to the congress. We would like to thank all participants and supporters. Hope to see you at our next congress.

Best wishes from Turkey

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Prevalence of Antibodies to Bovine alphaherpesvirus 1 in Sheep and Goats in Türkiye

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Abstract:

Bovine alphaherpesvirus 1 (BoHV-1) is a highly contagious viral disease of cattle that causes lifelong latent infection. BoHV-1 has significant economic impact on the cattle breeding industry due to respiratory and neurological problems, reduced milk production, abortions and fertility disorders. Sheep and goats are believed to be the potential hosts of virus for cattle. Molecular detection and serological evidence of BoHV-1 have been reported in Türkiye, however, little is known about the BoHV-1 situation in sheep and goats in Türkiye. Therefore, the purpose of this study was to survey the prevalence of BoHV-1 specific antibodies in sheep and goats. A total of 463 sera samples, 267 sera samples from sheep and 196 sera samples from goats were collected during the months of March 2018 and September 2019. Sera samples were tested for BoHV-1 antibodies using an enzyme linked immunosorbent assay (ELISA) kit. The overall seroprevalence of BoHV-1 in small ruminants was 3.0% (95% CI 1.5 - 4.6) with higher incidence in sheep (3.4%, 95% CI: 1.2 - 5.5) than in goats (2.6%, 95% CI: 0.3 - 4.8). No statistically significant difference in seroprevalence was observed between sheep and goats ($p = 0.78$). Animals older than 2 years old (n = 11/231) had significantly higher BoHV-1 seropositivity than in animals younger than 2 years old (n = 3/232) ($p = 0.03$). However, there was no significant difference between male (n= 5/149) and female (n = 9/328) animals ($p = 0.77$). The results of this study indicate that BoHV-1 infection is not common among the studied sheep and goat population. Future epidemiological studies are needed to better understand role of small ruminants in the transmission of the virus.

Keywords: bovine alphaherpesvirus 1, seroprevalence, sheep, goats, Türkiye.

Third International Congress on Biological and Health Sciences
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Oral Presentation

Coprological diagnosis of *Tritrichomonas foetus* infection in cats: comparison of a novel LAMP assay and novel real time PCR with previously described LAMP, real-time PCR and conventional PCR

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Abstract:

The protozoan parasite *Tritrichomonas foetus* may cause severe diarrhea in cats all over the world. In order to evaluate the methodology in coprological molecular diagnosis of feline tritrichomonosis, we compared previously published ("old") and newly developed ("novel") loop-mediated isothermal amplification (LAMP) (targeted to the *T. foetus* β-tubulin and the elf1α 1 gene, respectively) as well as an old conventional and an old and novel real-time PCR (all targeted to overlapping regions of *T. foetus* rDNA) assays regarding their diagnostic sensitivities and specificities. Here, the novel real-time PCR yielded the best methodical performance in that a sensitivity with a detection limit of <0.1 trophozoites (corresponding to ca. <0.13 trophozoites per mg feces) and a maximal specificity for diagnosis of *Tritrichomonas* spp. was achieved. The other test systems exhibited either an approximately 10-times lower sensitivity (<1 trophozoite corresponding to ca. <1.3 trophozoites per mg feces) (conventional PCR and both LAMP assays) or a lower specificity (old real-time PCR). Conversely, the diagnostic performance assessed with clinical fecal samples from cats demonstrated identical sensitivities (8 of 20 samples tested were positive) for the novel PCR and both LAMP assays. Diagnostic sensitivities were significantly higher than those found for the old real-time (5 positive samples) and conventional PCR (6 positive samples), respectively. Accordingly, our data suggested the novel PCR and both LAMP assays to be well suited molecular tools for direct (i.e. without including an in vitro cultivation step) coprological diagnosis of tritrichomonosis in cats. Interestingly, relatively high (novel LAMP, 7 positive samples) to at least moderate (old LAMP, 6 positive samples and 1 sample with equivocal score) diagnostic sensitivities were also achieved by testing clinical samples upon simple visual inspection of colorimetric changes during the LAMP amplification reactions. Accordingly, both LAMP assays may serve as practical molecular tools to perform epidemiological studies on feline (and bovine as well as porcine) tritrichomonosis under simple laboratory conditions.

Keywords: identification, molecular methods, cats, coprological diagnosis, *Tritrichomonas foetus*

This research was funded by National Veterinary Research Institute (statutory funds no. S/376) and partially by Swiss Government Excellence Scholarships, Institute of Parasitology, University of Bern.

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Oral Presentation

Cytotoxic potential of postbiotics against cancer cell lines: An *in vitro* study

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Abstract:

Cancer is one of the leading causes of death worldwide. Colorectal cancer is the third most common cancer and the mortality from it is expected to double in the next 20 years. The composition of the human gut microbiota can be regulated by dietary components such as probiotics that increase the number of lactic acid bacteria (LAB), which together with postbiotics may impact the carcinogenesis associated with colon cancer. The research aimed to determine the mechanism of cytotoxicity of LAB metabolites (postbiotics) – post-fermentation media (PFM) and cell extracts (CEs) of several strains of LAB (commercial probiotics and probiotic candidates). The biological activity of PFMs and CEs in human colon adenocarcinoma cell line (Caco-2) was evaluated with numerous cellular and morphological methods regarding antiproliferation studies, metabolic activity, mitochondrial membrane potential (MMP), intracellular oxidative stress generation (ROS and H_2O_2 production), apoptosis induction (including morphological observations and biochemical studies), and metabolites of LAB detection. It was demonstrated, that PFMs and CEs showed strong dose-dependent antiproliferative activity against Caco-2 cells (up to 77.8 ± 0.8%). Stronger inhibitory activity was observed against cancer (Caco-2) than normal (rat small intestine IEC-6) cells. PFMs were more inhibitory than CEs, and they generated oxidative stress, and some strains induced apoptosis in Caco-2 cells by the mitochondrial signalling pathway. To conclude, the anticancer potential of LAB-derived postbiotics is strain-specific. These studies have singled out promising LAB strains and require confirmation *in vivo*.

Keywords: postbiotics, probiotics, lactic acid bacteria, reactive oxygen species, apoptosis.

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Oral Presentation

Analysis of biochemical and antimicrobial properties of bioactive molecules of *Argemone 32exicana*

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This study was carried out to identify the phytochemicals in *Argemone (A. 32exicana) extracts* which are responsible for its medicinal properties. The extracts of *A. 32exicana* from its leaves, stem, flowers and fruits were prepared at room and high temperatures (corresponding to the boiling points) in various solvents viz., hexane, ethyl acetate, methanol, and H_2O. The UV – visible absorption spectra of various constituents in the isolated extracts were determined by spectrophotometric analysis. Qualitative tests for the screening of phytoconstituents in the extracts were carried to identify various phytochemicals. The antioxidant and anti- HIV-1 reverse transcriptase potential and antibacterial activity of various extracts of *A. 32exicana* were also determined. The spectrophotometric and qualitative analysis of plant extracts demonstrated the presence of alkaloids, terpenoids, carbohydrates, and cardiac glycosides. *A. 32exicana* extracts showed strong antioxidant activity. These extracts exhibited antimicrobial activities against *Staphylococcus epidermis, Salmonela typhi, Neisseria Gonococci* or *gonococci, Citrobacter*, and *Shigella flexineri.* These extracts also showed significant inhibition against anti- HIV-1 reverse transcriptase activity. *Argemone 32exicana* extracts displayed the presence of many phytochemicals with strong antioxidant, antimicrobial, and anti-HIV-1 reverse transcriptase activity. Methanol at high temperature proved to be the best solvent for extraction of phytochemicals.

Keywords: *Argemone mexicana*, antioxidant, phytochemicals, antimicrobial, anti-HIV-1 reverse transcriptase.

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Oral Presentation

Pathogenicity of African Swine Fever – veterinary diagnosis aspects.

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Abstract:

African swine fever virus (ASFV) causes one of the most dangerous disease of pigs and wild boar – African swine fever (ASF). Till now nor safe vaccine, neither effective treatment is available against ASF. Accurate diagnosis and knowledge of disease dynamics may play a crucial role in early recognition of the disease and contribute significantly to minimize the spread of the disease. Our study gathered data from three independent animal trials conducted with three different strains of ASFV: highly virulent Armenia07 strain, moderately virulent Pol18_282928 strain, and attenuated NH/P68 strain. The study aimed to present differences in disease dynamic and laboratory diagnostic aspects including detection of ASFV in affected animals – depending on the infection scenario. The study reveals that attenuated strains cause occasional shedding of virus accompanied by non-corelated occasional fever, while moderately and highly virulent strains infection led to high mortality rates with high fever.

In animals infected with high- and moderately virulent strains of ASFV detection of genetic material of ASFV occurred earlier in blood with higher mean Ct values than in oral and rectal swabs, ensuring a higher probability of ASFV detection. Serological analysis revealed 100% seropositive animals in group infected with attenuated strain, while only one animal was found seropositive in each group infected by virulent strains. PCR-positive blood samples were detected more frequently and reached higher percentages (up to 100% during fever) than oral and rectal swabs. The study shows how to accurately diagnose ASF in the field condition depending on infection scenario.

Keywords: ASF, diagnosis, ASFV

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Oral Presentation

Acrylamide Influences Cell Viability, Promotes Reactive Oxygen Species Generation, Causes DNA Damage, and Apoptosis in Human Colon Adenocarcinoma Cell Line Caco-2

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Abstract:

Acrylamide (AA) toxicity is still a vital and expanding topic in toxicological research. The purpose of the conducted experiment was to assess the mechanisms of cyto- and genotoxicity of AA on the human colon adenocarcinoma cell line Caco-2. The inhibitory concentration, IC50 values in cell viability assays – 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) and PrestoBlue tests, measurement of the basal and oxidative DNA damage and, the Reactive Oxygen Species (ROS) generation that leads to apoptosis, and assessment of the morphological changes in Caco-2 cells using microscopic methods, were estimated. It has been observed that AA is potent to induce cyto- and genotoxic effects on Caco-2 cells. In MTT assay was noticed greater cytotoxicity (IC50=5.9 mM) compared with the PrestoBlue assay (IC50=8.9 mM) after 24h exposure to AA. In the single-cell gel electrophoresis assay (SCGE), the DNA damage caused by AA was concentration-dependent and the highest DNA damage was caused by the highest AA concentration (12.5 mM; 89.1%). AA caused oxidative DNA damage and generation of ROS, that was correlated with AA concentration, mitochondrial membrane potential (MMP) depletion, and apoptosis induction. AA at the concentration close to the IC50 induced morphological changes typical for apoptosis during microscopic staining of cells. The following results shows that AA has a pro-oxidative effect on Caco-2 cells that can lead to apoptotic cell death.

Keywords: acrylamide, cytotoxicity, genotoxicity, cell viability, Caco-2 cell line

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Oral Presentation

Effect of Vitamin A and E administrations on plasma and brain concentrations of ivermectin in mice

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Abstract:

This study aimed to determine the effect of oral Vitamin A and E administrations at different doses on plasma and brain concentrations of ivermectin (0.2 mg/kg, subcutaneous) in mice. The study was carried out on 174 Swiss Albino male mice aged 8-10 weeks. After leaving 6 mice for method validation, the remaining mice were randomly divided into 7 groups with equal numbers of animals: IVM (n=24); ivermectin, IVM+LDA (n=24); ivermectin+4000 IU/kg Vit A, IVM+HDA (n=24); ivermectin+30000 IU/kg Vit A, IVM+LDE (n=24); ivermectin+35 mg/kg Vit E, IVM+HDE (n=24); ivermectin+500 mg/kg Vit E, IVM+LDC (n=24); ivermectin+4000 IU/kg Vit A and 35 mg/kg Vit E, IVM+HDC (n=24); ivermectin+30000 IU/kg Vit A and 500 mg/kg Vit E. Ivermectin was administered simultaneously with vitamins A and E to the groups. After ivermectin and vitamin administration, blood and brain tissue samples were taken from 6 mice at each sampling time at 2, 6, 12, and 24 hours. The plasma and brain concentrations of ivermectin were measured using HPLC-FLD. When compared with IVM group, ivermectin exhibited significant high concentrations in the plasma and brain tissue of IVM+HDE and IVM+HDC groups and in the brain tissue of IVM+HDA group (12 and 24 hours). These changes may have clinical significance.

Keywords: Ivermectin, vitamin A, vitamin E, body disposition, mouse.

[#]This study was supported by The Coordination of Scientific Research Projects, University of Selcuk, Turkey (Project No. 21401105).

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Oral Presentation

Prevalence of *Eucoleus aerophilus* in animals origitating from different geographical locations worldwide: A systematic review and meta-analysis

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Abstract:

Eucoleus aerophilus (syn. *Capillaria aerophila*) is a nematode with a worldwide geographical distribution. It causes a disease called lungs capillariosis by affecting the respiratory tract of wild and domestic animals, furthermore, it has occasionally been described in humans. The aim of this systematic review was to evaluate and summarize the existing knowledge on the prevalence of *E. aerophilus* in wild and domestic animals originating from different geographical locations worldwide. The secondary aim of this systematic review was to estimate *E. aerophilus* occurrence and prevalence in different hosts worldwide to identify data gaps.

Materials and methods: For this systematic review three databases (PubMed, Web of Science and Science Direct) were screened to find eligible studies published from 1973 upto the end of 2022.

Results: From a total of 606 studies decribing the occurence of *E. aerophilus*, 141 articles from 38 countries all around the world were included in this meta-analysis. Abovementioned studies presented results obtained mainly with flotation and necropsy. Due to the occurrence of *E. aerophilus* in many different species and different matrices (lungs and feces), we decided to conduct the meta-analysis separately for each species with a given matrix. This systematic review confirmed the status of red fox as the main reservoir and transmitter of the *E. aerophilus* (average prevalence - 43% in feces or 49% in lungs), as well as evidenced higher prevalence of *E. aerophilus* in wild animals in comparison to domestic ones - dogs (3% in feces) and cats (2% in feces or 8% in lungs). There are many host-related factors (age, sex or environmental/living conditions), that were investigated in relation with the prevalence of *E. aerophilus*, but they show wide variations and there is no simple relationship between them. Furthermore, mixed infections with other pulmonary nematodes like, *Crenosoma vulpis* and/or *Angiostrongylus vasorum* are reported very frequently, which greatly complicates the diagnosis.

Conclusions: To summarize, this systematic review focused on identifying data gaps and promoting future research directions in this area. To the best of our knowledge this is the first systematic review aiming to evaluate and summarize the existing knowledge on the prevalence of *E. aerophilus* in wild and domestic animals.

Keywords: *Eucoleus aerophilus*, systematic review, meta-analysis.

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Oral Presentation

Investigation of ESBL and Colistin Resistance in *Escherichia coli* Strains Isolated from Cats and Dogs

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Abstract:

The aim of this study was to determine the extended spectrum beta lactamase (ESBL) and colistin resistance, and genotypic characterization of *Escherichia coli* isolates from cat and dog feces. A total of 50 *E. coli* strains isolated from fecal samples of cats (n=25) and dogs (n=25) in the culture collection of Ataturk University Faculty of Veterinary Medicine Microbiology laboratory were used in this study. Antimicrobial and ESBL resistance of the isolates confirmed by PCR were investigated by disk diffusion, whereas colistin resistance was detected by liquid microdilution technique according to EUCAST criteria. The phenotypic ESBL-resistantstrains were analyzed by PCR for the detection of resistance genes. Genetic relationships of the genotypic ESBL-resistant strainswere determined by ERIC-PCR. The results of the PCR analysis of 50 *E. coli* revealed that all of the isolates carried the *phoA* gene. The strains were resistant to penicillin (100.0%), amoxicillin clavulanic acid (82.0%), tetracycline (66.0%), streptomycin (36.0%), trimethoprim-sulfamethoxazole (28.0%) and enrofloxacin (8.0%). Although nineteen strains were phenol typically ESBL resistant, all strains were susceptible to colistin. PCR analysis of phenotypic ESBL-resistant strains showed that 68.4% (13/19) isolates carried different resistance genes. PCR results of phenotypic ESBL-resistant strains indicated that two strains harbored two ESBL genes together, whereas nine strains carried only one gene. The most commonly detected gene was bla_{TEM} in the current study, followed by $bla_{\text{CTXM-2}}$, $bla_{\text{CTXM-9}}$, $bla_{\text{CTXM-2}}$, and bla_{SHV}. The thirteen genotypic ESBL-resistant *E. coli* strains showed two main clusters in the ERIC-PCR. In this study, the detection of ESBL-resistant strains in companion animals in close contact with humans, such as cats and dogs, emphasizes the importance of both humans and animals.

Keywords: Cat, Dog, *Escherichia coli*, ESBL resistance, Feces

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Oral Presentation

Evaluation of UVA - Supported Hand Hygiene Training Given to Nurses Working in Intensive Care Units (ICU) According to the Kirkpatrick Model

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Abstract:

The research was conducted between July 2021 and October 2022 with nurses working in ICU as a prospective, pre-test - post-test control group.While the mean score of the hand hygiene belief scale (HHBS) before the training of the intensive care nurses in the application group was 37.41±7.90, it was found to be 45.10±7.67 after the training. There is a statistically significant difference between the groups' mean scores (Z= -4.490 p= 0.001). While the average percentage of change in the HHBS score of the nurses in the application group increased by 18 compared to before and after the training, the percentage of change in the hand hygiene belief scale average score of the nurses in the control group decreased by 4 compared to the pre and post-training period (Z= -2.379 p= 0.017). The mean scores of the hand hygiene information test (HHIT) after the training of the ICU nurses in the application group increased compared to before (Z=4.707, p=0.001). While the mean HHIT score of the nurses in the control group was 55.54±14.70 before the training, it was 65.94±11.41 after the training. There is a statistically significant difference between the mean scores. After the training, the mean HHIT scores of the nurses in the control group increased compared to before (Z=-3.852, p=0.001). According to the analysis, it was observed that the hand washing times of the nurses in the application and control groups increased after the training. Since there was an increase in both groups, this percentage of increase did not create a significant difference between the nurses in the application and control groups (Z=-0.031, p= 0.975). In line with these findings; it was determined that the HHBS mean scores of the nurses in the application group increased. the average scores of the HHIT after the training of the ICU nurses in both the application and control groups increased compared to before. Hand washing times increased compared to the pre-post-training period.

Keywords: ultraviolet, nursing hand hygiene, kirkpatrick model.

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Oral Presentation

Genetic profiles of *Brucella canis* Isolates in Turkey

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Abstract:

Canine Brucellosis is a bacterial infection caused by zoonotic *B. canis* that causes abortions in dogs. Its first isolation was recognized out in the United States in 1966. Although there are some studies on *B. canis* in Turkey, it was isolated for the first time in 2015 in Pendik Veterinary Control Institute. After the classical biotyping and molecular confirmation of the strains isolated from 2 bitches in 2015, their genotypes were determined for the first time in this study by MLVA and MLST methods. The isolates used were passaged on Tryptone Soy Agar Medium and biotyped by the conventional method. Then DNA extractions were performed according to the commercial kit protocol. Six bands were detected by Multiplex PCR (Mayer-scholl et al. 2011) method and *B. canis* was also confirmed molecularly. The extracted DNA of strains were genotyped by MLVA and MLST methods. For both strains, genotype 4 (2-3-4-11-3-1-5-2) was determined according to MLVA-8. Genotype 26 (2-3-4-11-3-1-5-2-5-40-9) was detected with 1 variant (bruce11) according to MLVA-11. According to MLST, ST20 (1-6-4-1-5-3-5-4-6) was detected. According to MLVA-16, the novel genotype (2-3-4-11-3-1-5-2-5-40-9-5-5-6-8-3) that did not match with the database was detected. It matches 3 variants with the BCCN-96-121 strain from 1996 in the Le Fleche (2006) publication in the database (https://microbesgenotyping.i2bc.paris-saclay.fr/databases/view/57). The fact that the data of *B. canis* in the database is quite scarce limits the evaluation. However, the results of this study are extremely important in terms of contribution to the database. As a result, genotype profiles of *B. canis* strains isolated for the first time in Turkey were obtained. Data on isolates isolated from bitches in Turkey are the first to be used as molecular epidemiology data. It will also form the basis for further studies.

Keywords: *Brucella canis;* Dogs, Genotyping; MLST; MLVA.

Acknowledgement: The study was partially funded by the ICRAD (Bruce-GenoProt) as a part of the provision of funds for international research collaborations on world nutrition and other international research tasks in the field of nutrition, agriculture, and consumer health protection.

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Oral Presentation

Microbiological Perspective of Kokoreç, as a RTE-Street Food

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Abstract:

Kokoreç is a commonly produced and consumed traditional street food in Turkiye. In this study a total of 40 kokoreç samples (20 without spices and 20 with spices), were collected from 20 retail points located in Aydın province. The microbiological quality of kokoreç samples were determined by evaluating Total Viable Count (TVC), coliforms, *Enterococcus* spp., yeast and molds, *Staphylococcus/Micrococcus* levels and the presences of *Escherichia coli*, *Salmonella* spp. and sulphite reducing anaerobic bacteria. The mean TVC, *Enterococcus* spp. and *Staphylococcus/Micrococcus* levels in kokoreç samples without species were 4.34 log cfu/g, 3.17 log cfu/g and 3.20 log cfu/g, respectively. The levels of coliforms and yeast and molds could not be determined due to limit of detection. The mean levels of TVC, coliforms, *Enterococcus* spp, *Staphylococcus/Micrococcus*, and yeast and molds were 5.14 log cfu/g, 1.96 log cfu/g, 3.43 log cfu/g, 4.31 log cfu/g and 2.65 log cfu/g, respectively. Sulphite reducing anaerobic bacteria were determined in 23 kokoreç samples (9 without species and 14 with species). *E. coli* ve *Salmonella* spp. were not found in any of the samples analysed. When the results gathered evaluated the kokoreç samples with specied had higher microbiological load than kokoreç samples without species. This study concluded that the microbiological quality of kokoreç samples were not good enough. The samples subjected to cooking procedures possessed pathogen and/or potantial pathogen bacteria which might cause public health risks. In order to reduce these risks, instetine emtying, washing and boiling procedures should be carefully conducted and prepartion of kokoreç portions should be kept as small as possible when cooking with lethal time-temperature parameters applied. In addition, the microbiological quality of species used in service, equipment and personal hygiene should be paid attention.

Keywords: kokoreç, microbiologial quality, offal, species

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Oral Presentation

The Effect of Stress and Melatonin on Redox Status in Cancer

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Abstract:

Redox imbalance is known to play a critical role in cellular toxicity, cancer initiation, and progression. Stress induced excessive generation of reactive oxygen species (ROS) is one of the major cause of many chronic diseases including *cancer. Some natural antioxidants by inhibiting ROS generation and oxidative damage of cellular components can prevent tumor development. In the present study, the* effectiveness *of* melatonin *on Dimethyl Benz (a) anthracene (DMBA)-induced skin cancer was evaluated with or without chronic restraint stress* (CRS). Swiss albino male rats weighing 40±5 g were divided into five groups (n=10) as controls, topical DMBA alone, Pre-CRS+DMBA, melatonin+DMBA and Pre-CRS+DMBA+melatonin treated groups. After 18 weeks of experiment, plasma antioxidant markers and DNA damage in skin sample was analyzed. Melatonin showed antioxidant potential in combatting DMBA induced reduction in enzymatic and non-enzymatic antioxidants along with lipid peroxidation. The improvement in redox status was comparable to DNA damage, endorsing the antioxidant efficacy of melatonin in skin carcinogenesis caused by DMBA. However, pre-exposure to CRS diminished the antioxidant ability of melatonin and the results were same as DMBA treatment alone. Hence, the current study indicates that stress management might therefore be beneficial to cancer patients in reducing disease progression and improving the quality of their life.

Keywords: DMBA, Carcinogenesis, Oxidative stress, Melatonin, Restraint stress

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Oral Presentation

Effect of Yeast Cell Wall Components on Broiler Performance

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Abstract:

The aim of the study was to determine the effects of different yeast cell wall compounds on body weight, body weight gain, feed intake, feed conversion ratio (FCR) and carcass weight in broilers. For this purpose, totally 720 one-day Ross 308 broilers obtained from a local hatchery were weighted and randomly assigned to 5 groups. In the experiment, 18 birds located per $1m^2$ pen. Basal diet was supplemented without feed additive (Control group, C); supplemented with 0.05% and 0.125% autolyzed whole yeast cell (D1 and D2, respectively); supplemented with 0.05% and 0.125% yeast cell wall that removed the bond with enzymatic reactions (D3 and D4, respectively). On day 10, 25 and 38, the performance parameters were measured (body weight, feed intake) and FCR was calculated. At the end of the experiment the carcass weights of broilers were determined. The body weight and body weight gain significantly increased in D3 and D4 for first 10-day period ($P<0.001$), while there was tended to enhance in that parameters for the whole period (0-38 day) in all treatments ($P=.0.083$). Feed conversion ratio was improved significantly improved in D4 group ($P<0.001$). Carcass weights were significantly increased in D2 and D4 compared with the control group ($P<0.05$). In conclusion, the feed additives used are effective on performance, especially under bird density stress conditions. It is envisaged to use 0.05% doses of both feed additives and especially yeast cell wall that removed the bond with enzymatic reactions 0.125% doses under stress conditions.

Keywords: broiler, mos, B-glucan, yeast

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Oral Presentation

Descriptive Epidemiology of Stray Dog Bite Injuries Presented to Dog Bite Center in Lahore, Pakistan

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Abstract:

Rabies is a fatal but preventable disease of public health importance. The problem of dog bites and consequently rabies has been an extremely contentious and neglected issue in Pakistan. According to an estimate, 4.5 million people are bitten each year in the United States. In Pakistan, the incidence of a dog-bite is much higher than in other Asian countries. As stray dogs are more involved in dog bites. Therefore, epidemiological studies of dog bite cases were also needed to get information regarding the latest aspects. This study was a descriptive study for the year 2018. The main objective was to assess the patterns and outcomes of stray dog bite injuries in Lahore, Pakistan. The data was collected from the Institute of Public Health (Dog Bite Center), Lahore, and analyzed with IBM SPSS Statistics V20. Overall, 4331 cases were reported during the study period. The result indicated that in comparison to females, the Male (83.74%) were at high risk of the stray dog bite. Moreover, Legs (52.16%) were more prone to stray dog bites as compared to other body parts. the frequency of stray dog bite cases in the 15-45 years age group was higher (45.23%). While the second highest cases (30.7%) were from the 0-15 years age group. The results also indicated that zone-wise, the Allama Iqbal Zone was at high risk (18.77%) of stray dog bites as compared to other zones of Lahore. Regarding the reporting time of stray dog bite cases, 51% of cases were reported within 2 days while only 10% were reported on the day of the dog bite. The study concludes that the stray dog population poses a major threat to public health. The situation is aggravating with the bite injuries increasing each year. However, community awareness about rabies is one of the key components for prevention. Also, the stray-dog population must be controlled through dog population management to effectively reduce the incidence of stray dog bite injuries and consequently rabies.

Keywords: public health, rabies, stray-dog bite, zoonotic disease

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Oral Presentation

As an Ethnic Food, Investigation of the Microbiological Quality of Camel Sucuk

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Abstract:

This study aimed to investigate the microbiological quality of camel sucuk, recently received geographical indication, produced in Incirliova district of Aydin province between November 2021 and February of 2022. A total of 100 samples, 50 fermented and 50 heat-treated sucuk collected from sucuk production premises and retail points, were subjected to microbiological analysis for total viable count (TVC), lactic acid bacteria (LAB), yeast-mold, *Micrococcus/Staphylococcus*, coliform bacteria, *Escherichia coli (E. coli)* levels and *Salmonella* spp.. The TVC results obtained in the study were statistically different ($p < 0.001$) for fermented (7.76 ± 0.13 log cfu/g) and heat-treated sucuk (5.73 ± 0.40 log cfu/g). The mean LAB results were significantly ($p<0.001$) higher (7.56 ± 0.17 log cfu/g) in fermented sucuk in compare to heat-treated sucuk (5.04 ± 0.52 log cfu/g). Statistically significant difference ($p<0.001$) were observed between fermented (4.90 ± 0.11 log cfu/g) and heat-treated sucuk samples (3.63 ± 0.35 log cfu/g) for yeast and molds. *Micrococcus/Staphylococcus* levels were significantly ($p<0.001$) higher in fermented samples (5.18 ± 0.05) than heat-treated samples (3.54 ± 0.43 log cfu/g). The levels of coliform bacteria were 3.69 ± 0.13 and 3.70 ± 0.91 log cfu/g for fermented sucuk and heat-treated sucuk samples. Only 3 samples containing *E. coli* with a mean of 1.87 ± 0.29 log cfu/g were found to be higher than limit of detection for heat-treated samples. However, *E. coli* was found in 24 out of 50 fermented samples with a mean level of 3.35 ± 0.14. *Salmonella* spp. was determined in 18% of fermented sucuk and 14% of heat-treated sucuk samples. It was concluded that hygienic status of raw materials, applications during processing, fermentation process and the time-temperature effect of heat application might influence the microbiological quality of sucuk. Apart from that, contaminations after processing may increase the level of microorganisms contaminated. It has been concluded that in order to prevent possible contamination, it is necessary to implement HACCP systems as well as good production and good hygiene practices in the sucuk processing premises.

Keywords: camel sucuk, *E. coli*, hygienic quality

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Oral Presentation

Effects of a Commercial Probiotic (Pro-Aqua™) on the Growth and Feeding Performance of Rainbow Trout (*Oncorhynchus mykiss*) Larvae

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Abstract:

This study, which was carried out as a preliminary experiment, investigated the influence of Pro-Aqua™ a commercial probiotic composed of *Lactobacillus plantarum*, *Enterococcus faecium*, and *Bacillus subtilis*, on growth performances and feed conversion rate of rainbow trout larvae (*Oncorhynchus mykiss*). The study was performed at a commercial rainbow trout farm. In this study, the larvae (0,26±0,01 gr) were grown for 29 days with 0% (control/without probiotics) and 10% probiotic-added feeds. The study was planned as two groups and two replications. The growth and feeding parameters in the study were as follows: live weight gain (WG), daily live weight increase (DLWI), feed conversion rate (FCR), specific growth rate (SGR) and thermal growth coefficient (TGC) were investigated. After the feeding trial, the results showed that in all experimental groups probiotic-fed rainbow trout showed significantly better growth performance than the control groups ($P<0.05$). At the end of the study, rainbow trout larvae with an initial weight of 0.26 ±0.01 g reached 0,655 ± 0.02 g and 0.79 ± 0.14 g respectively. In addition, there was a statistically significant difference in feed conversion rate between the groups fed with probiotics-supplemented and control groups ($P<0.05$). Taken together, the results revealed that Pro-Aqua™ is a promising probiotic for rainbow trout with the capability of modulating the growth performances and feed conversion rate.

Keywords: *Bacillus subtilis*, *Enterococcus faecium*, *Lactobacillus plantarum*, probiotic-fed, Rainbow trout.

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Oral Presentation

Preliminary Results On The Recovery Of Coenzyme Q10 From Vegetable And Animal Waste

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Abstract:

Most animal-originated foods, such as meat, egg, and dairy products, are critical sources of Coenzyme Q10 (CoQ10) (Bae *et al.*, 2018); other available food sources include vegetable oil, fish, bee pollen and microorganisms (Pyo, 2010).This work involved the recovery of CoQ10 from vegetable and animal waste for possible utilization as a food supplement. Six different press cakes resulting from the cold extraction process of rapeseed, sunflower, pumpkin, linseed, walnut, and hempseed oils, respectively, minced samples of whole fish and chicken hearts, have been tested for CoQ10 content using the ultrasonic extraction with 2-propanol. Pumpkin press cake showed the highest level of CoQ10 (84.80 µg CoQ10/g material) among the vegetable waste studied and chicken heart (114.39 µg CoQ10/g material) among the animal ones. The ultrasound-assisted extraction using 2-propanol is suitable for recovering CoQ10 both from vegetable and animal matrices; it is simple to perform and environmentally friendly.

Keywords: chicken heart, coenzyme Q10, extraction, press cakes, whole fish

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Oral Presentation

Investigation of Protective Effect of Resveratrol and Coenzyme Q10 against Cyclophosphamide-Induced Lipid Peroxidation, Oxidative Stress and DNA Damage in Rats

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Abstract:

It has been shown in studies that cyclophosphamide, which is used in the treatment of many diseases, especially cancer, may cause toxicity and its metabolites induce oxidative stress. In this study, it was aimed to investigate the protective effects of resveratrol and coenzyme Q10, known for their antioxidant properties, both separately and together, against oxidative stress induced by cyclophosphamide. For this purpose, 35 Wistar albino male rats were divided into 5 groups; control group (standard rat feed), cyclophosphamide (CP) group (CP as 75 mg kg i.p. on day 14), coenzyme Q10 (CoQ) + CP group (20 mg/kg i.p. CoQ for 14 days + 75 mg kg i.p. CP on day 14), resveratrol (Res) + CP group (20 mg/kg i.p. Res for 14 days + 75 mg/kg i.p. CP on day 14), CoQ+Res+CP group (20 mg/kg i.p Res + 20 mg/kg i.p CoQ for 14 days and 75 mg/kg i.p.CP on day 14). The results of the experiment show that the MDA level was high, and GSH level, SOD, and CAT activities were low in the blood and all tissues (liver, kidney, brain, heart, and testis) in the CP group. In addition, DNA damage and also histopathological changes were observed. In contrast, Res and CoQ reversed this CP-induced these levels and enzyme activities, and ameliorated DNA damage and histopathological changes. According to the results, it was observed that Res and CoQ both separately and together strengthened the antioxidant defense mechanism and had ameliorative effects against CP-induced lipid peroxidation and genotoxicity.

Keywords: Cyclophosphamide, Resveratrol, Coenzyme Q10, Oxidative stress, DNA damage.

* This study was supported by the Scientific Research Projects Coordination Unit of Usak University (Project no: BABK/2017/SB001).

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Oral Presentation

Comparison of the Efficiency of Different Education Methods in the Basic Medical Sciences Laboratory

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Abstract:

Nowadays, with the pandemic entering our lives, students are educated formally or widely. Looking at the historical process, different learning methods have been used in education in line with the technological developments of the current era and the changing needs of people. The distance education method still continues to be used alongside the traditional (face-to-face) education method. In addition, laboratory courses in the fields of health and science are essential. It is important for students to be successful in their professional lives to work with the most appropriate education method in all conditions in these areas. In this study, it is aimed to compare the effectiveness of basic medical sciences laboratory courses to dentistry students with different education methods. In the study method design, the effectiveness of face-to-face education, distance video education and theoretical laboratory applications were taken into consideration for the same laboratory subjects. Subjects belonging to the basic medicine (Anatomy-Microbiology-Histology-Biochemistry) courses in the education programs of dentistry students and suitable for the curriculum were used. A program was prepared in such a way that the chosen topic was a theoretical lesson, a video-visual supported lesson and a face-to-face laboratory lesson. Evaluation of the education method, the same exam was repeated at the end of the lesson and one week later, and the level of perception of the subject was evaluated. The sample of the study consists of 60 students studying at the Faculty of Dentistry of Nevşehir Hacı Bektaş Veli University. Twenty students randomly selected from among these students took a laboratory course with a different education method for each course, and the results were evaluated. According to the data obtained, face-to-face education was more effective than other education methods in laboratory applications of all courses given to dentistry students in the field of basic medical sciences. When the basic information about the laboratory is given as a video, it can support the applications, but distance education cannot replace the face-to-face application.

Keywords: Laboratory, Basic medical sciences, Laboratory education.

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Oral Presentation

Determination of Some Fertility Parameters of Karacabey Merino Sheep Breeding in Balıkesir Conditions and Growth Performance of Lambs

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Abstract:

This study aimed to determine the effects of regional conditions and flock size on some reproductive parameters of Karacabey Merino Sheep and growth performance of their offspring in the context of the National Livestock Breeding Project in Balıkesir province, within the sub-project of Karacabey Merino Sheep Breeding under farmer conditions, initiated in 2021. The study material consisted of 626 ewes and their 812 lambs in the Altıeylül district and 560 ewes and their 839 lambs in the Karesi district. Extensive farming was applied in the herds and no synchronization or superovulation was used. flock size, birth type, number of lambs per birth, birth and 90th day live weights were recorded. The data was analyzed using t-test, Duncan and Least Squares methods. The twinning rate was found to be significantly higher in Karesi district (1.49) compared to Altıeylül district (1.29) ($P<0.001$). However, it was determined that it was similar in small and medium-sized flocks but significantly lower ($P<0.001$) in large flock (1.52, 1.16, 1.28, respectively). It was observed that the lambs bred in Karesi district had a higher birth weight (+170 g) ($P<0.001$), but the 90th day lamb live weights were similar in both districts. It was determined that flock size had a significant effect on lamb birth weight ($P<0.001$) (4.5, 4.3, 4.2 kg, respectively). When flock size was evaluated in terms of 90th day live weights of lambs, it was observed that small and medium-sized flocks had similar live weights (35.4 and 34.7 kg, respectively), while large flocks had lower live weights (33.2 kg) ($P<0.01$). As a result, it was concluded that the lower twinning rate and birth weight in the Altıeylül district and large-scale flocks were due to feeding and care conditions.

Keywords: Balıkesir, Reproductive Performance, Breeding, Karacabey Merino.

* This study was supported by TAGEM's “Public Breeding of the Karacabey Merino Sheep Breed Sub-Project (Project Code: 10 KBM 2021-03)” carried out in Balıkesir.

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Oral Presentation

Bibliometric Profile of Master's Thesis on Child Health and Diseases Nursing

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Abstract:

The aim of this research is to examine the bibliometric profile of master's theses in pediatric nursing in the last ten years in Turkey. This research is in the scanning model and has been examined with the bibliometric analysis technique. Master's theses made between 2013-2023 in the department of child health and diseases nursing in Turkey were searched on the National Thesis Center Database of the Council of Higher Education between October 15 and November 20, 2022. A total of 335 theses were reached in the search made using the detailed search screen. Five dissertations without access were not included in the research. These five theses without access permission were not included in the study and the study was carried out on 330 theses. Theses within the scope of the study; the data obtained were analyzed according to parameters such as year, university, institute, discipline, research method, sample group, number of samples, academic level of the advisor and thesis topic, and the obtained data were converted into quantitative data. Data were calculated from descriptive statistics using frequency-percentage. It has been determined that the majority of the theses made in the pediatric health and diseases nursing department in Turkey were published in 2019 (n: 65). It was determined that the majority of theses were carried out in institutes affiliated to state universities. Parallel to the development of postgraduate education, it has been determined that there has been a rapid increase in the number of theses since 2015, but a decrease in the registered thesis data in 2020. It has been determined that maters's theses are mostly completed under the supervision of assistant professors (n:135). It has been determined that the majority of postgraduate theses were carried out with quantitative research methods, and the data were mainly collected by questionnaire technique. In addition, it has been observed that the number of theses in the randomized controlled experimental study type has increased in recent years. It was determined that the sample groups of the theses mostly consisted of child populations. It has been determined that the theses mainly focus on knowledge, attitude, behavior, pain management and complementary alternative medicine practice.

Keywords: Pediatric nursing, bibliographic analysis, postgraduate, master, thesis.

[#]There is no financial support for the research.

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Oral Presentation

Comparison of Ectoparasites infestation for fresh and saltwater Fishes from Euphrates, and Razzaza Lake, Iraq

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Abstract:

Parasitic infestations represent one of the main challenges to fresh water and marine fish all areas of the world. The infections are commonly found on the skin and gills of fish and can cause dangerous problems, as mortality, in heavily parasitized infections. This study was conducted to detect of ectoparasite types in Fishes, 20 of *Coptodon zillii* from Euphrates and 12 *Cyprinus carpio* from Razzaza Lake, were used for this study in aquatic environment. The specimens were purchased from market and selected. The collection of fish using gill nets. The collected of fish samples was carried out in lab and used macroscopic inspection, gross viscera, microscopic exam-wet mount of fins, skin, gills and eyes. The results of the both infected fishes revealed the presence of several clinical signs. The prevalence was 65.6%, in *Coptodon zillii* was 45% and *Cyprinus carpio* was 100%. Indeed, we observed the appearance of necrotic areas, ulcerations and hemorrhage on the gills. On others body parts, we found *Protozoa and Monogeneans* parasites. The identification of ectoparasite were obtained in fins, skin, and gills and no infection in eyes. There are 4 types of ectoparasites were infect to *Coptodon zillii*, that is *Trichodina* sp., *Ichthyophthirius multifiliis* sp., *Dactylogyrus* sp., and *Gyrodactylus* sp. While, *Cyprinus carpio* that is *I. multifiliis* and *Gyrodactylus* sp. Significantly of results at 0.05≥ of fish type with weight and long but note significant for genders in both types. In future studies should be focusing on modern tools to identification of parasites species in different environments.

Keywords: Ectoparasites; *Euphrates;* Iraq; Razzaza lake.

[#] The study not supported from any special or governmental Institutes.

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Oral Presentation

Polybrominated diphenyl ethers levels in feed and feed materials

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Abstract:

Polybrominated diphenyl ethers (PBDE) are toxic chemicals added to polymers to retard combustion and tend to leak into the environment. Their common presence in food of animal origin could be related to feed contamination. The levels of 10 congeners (BDE-28, 47, 49, 99, 100, 138, 153, 154, 183 and 209) were determined using gas chromatography–high-resolution mass spectrometry in feeds and feed materials. The 207 samples were collected as part of the Polish national official feed quality control plan and divided into eight categories according to Commission Regulation 277/2012/EU. More than 73% of the samples were contaminated by at least one congener. Inter alia all samples of fish oil, animal fat, and feed for fish were contaminated with $\sum_{10}$PBDE up to 4.4 μg kg^{-1}. On the other side, around 80% of plant-origin feed samples were free of PBDEs. The highest and the lowest median contents of $\sum_{10}$PBDE were found in fish oils (2.3 μg·kg^{-1}) and simultaneously in mineral feed additives, plant materials excluding vegetable oil and compound feed, respectively. BDE-209 was the most frequently detected congener (56% of samples). All congeners, except BDE-138 and BDE-183, were detected in 100% of the fish oil samples. Additionally, BDE-47 and BDE-99 were detected in 100% and 80% of animal fat feeds respectively. Congener detection frequencies in compound feed, feed of plant origin, or vegetable oils did not exceed 20%, except for BDE-209. Similar congener patterns were found for fish oils, fishmeal and feed for fish, where BDE-47 was found in the highest concentration, followed by BDE-49 and BDE-100. A different pattern with a higher median concentration of BDE-99 than BDE-47 has appeared in animal fat. Time-trend analysis of fishmeal contamination (n=75) showed a 63% decrease in $\sum_{10}$PBDE (p=0.077) and a 50% fall in the $\sum_{9}$PBDE (p=0.008) between 2017 and 2021. This work provides that international legislation implemented to reduce PBDE environmental levels has proved effective.

Keywords: PBDE, feed, time-trends, contamination

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Oral Presentation

Where Does The Veterinary Medicine Legislation Take Place In The One Health Approach?

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Abstract :

Republic of Turkey Ministry of Health defines the concept of "One Health" as; "a concept emphasizing the necessity of working under a common roof of different disciplines and professional groups in order to put forward better policies, practices and research for the protection and development of public health". The purpose of this research ; to investigate where the Veterinary Legislation takes place in the One Health approach, to determine and to propose solutions against the deficiencies to be detected. For this purpose, within the scope of the study, online academic resources and all national and international legislation that can be accessed were examined and a literature review was made. During the research; It has been seen that the One Health approach has gained great importance in recent years in the United States and European Union countries, and it has been carried out together with multidisciplinary studies, and these studies have been adopted by the states and all other organizations of the society. However, both in state institutions and in doctrine; deficiencies have been identified regarding the lack of sufficient and necessary interest in the Veterinary Medicine Legislation, especially the role of Veterinarians, animal welfare and rights, and the lack of detailed studies on these issues. Regarding the identified deficiencies; the legal regulations implemented in the United States and European Union countries and the existing regulations in Turkish Law were compared, and suggestions were made for the development of the existing Veterinary Medicine Legislation in Turkish Law in terms of the One Health approach. One health approach; emphasizes the necessity of working with a multidisciplinary system on the optimal health of humans, animals and the environment. When people, animals and the environment are issue; the first disciplines that come to mind are medical and veterinary sciences, biology and ecology. In the one health approach; when we separate the sanction power, it is thought that the regulatory role of legal regulations has an important function and it is inevitable that the science of law, and in particular the Veterinary Medicine Legislation, are among the other disciplines and regulatory elements considered.

Keywords: one health, veterinary legislation, animal welfare, animal rights

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Oral Presentation

Evaluation of the anti-herpesviral activity of *Geranium robertianum* L.

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Abstract:

Human Herpesvirus type-1 (HHV-1) is a neurotropic alphaherpesvirus that, after primary infection, maintains latency over the host's life. Reactivation of latent virus varies from an asymptomatic, mild course or labial and genital vesicles progressing to ulcerations. Several treatment alternatives are available: acyclovir, ganciclovir, foscarnet, vidarabine, and trifluridine. However, treatment options are getting less efficient as drug resistance spreads rapidly. Aerial parts of *Geranium robertianum* L, due to their anti-inflammatory and antibacterial properties, have been used in traditional medicine to alleviate symptoms of diarrhea, gastritis, and other medical conditions. Other species belonging to the *Geranium* genus showed antiviral activity, although *G. robertianum* has not yet been subjected to such analysis. This research assesses the anti-herpesviral activity of *G. robertianum* L. The antiviral activity was tested against the HHV-1 replicating in the VERO cell line. Hexane (GrH) and ethyl acetate (GrEA) extract in non-cytotoxic concentrations noticeably decreased the development of the HHV-1-induced cytopathic effect (CPE), indicating a potential impact on HHV-1 replication. Further analysis of the fractions obtained from these extracts exerted the highest CPE inhibition for fractions GrEA5 and GrEA6, showing a dose-dependent effect. The reduction of viral load tested with Real-Time PCR was used to assess the direct influence of the tested extracts and fractions on the replication of HHV-1. Despite a previous noticeable CPE reduction, the hexane extract showed low viral load reduction by 0.52 log at 150 µg/mL. The GrEA at 150 µg/mL reduced the viral load by 1.42 log. Lower ethyl acetate extract concentrations, 125 and 100 µg/mL, showed a reduction of 0.69 and 0.15 log at which a dose-response activity was observed. This was consistent with their influence on the HHV-1-induced CPE. The GrEA5 and GrEA6 were found to have the highest inhibition of HHV-1 replication, with viral load reduction by 1.77 and 1.51 log, respectively. This study shows that ethyl acetate extract and selected fractions of *G. robertianum* L. exhibit promising antiviral activity against HHV-1, inhibiting the virus-induced cytopathic effect and reducing the viral load. However, more research is required to identify the compounds responsible for the anti-herpesviral activity.

Keywords: HHV-1, herpesvirus, geranium robertianum

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Oral Presentation

Screening and identification of key miRNAs and targeted genes in myeloid neoplasms progression[#]

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Abstract:

Aim of the study: Different mechanisms could be involved in the failure of normal hematopoiesis in myeloid neoplasms (MNs), including acute myeloid leukemia (AML) and myelodysplastic syndrome (MDS). Dysfunction of mesenchymal stem cells (MSCs) could be associated with the development of AML/MDS. Recent studies demonstrated that MSCs contributed in normal hematopoietic and leukemic stem cells maintenance through several molecules, including gap junction proteins, adhesion molecules, cytokines and extracellular vesicles. Extracellular vesicles (EVs) including exosomes released from MScs have been regarded as novel factors that modulate communication between cancer stem cells and their niche. Exosomal miRNAs are involved in post-transcriptional regulation of gene expression. In order to determine the important miRNAs which involved in MNs progression, bioinformatics analysis was performed for exosomal miRNA released from AML/MDS-derived MSCs. From the Gene Expression Omnibus (GEO) microRNA dataset GSE64029 were downloaded, and were analyzed using GEO2R.P < .05 and |log fold change (FC)|≥0 were the criterion to define the miRNAs. The candidate target genes of DEMs were obtained by MirDB. We identified top 10 genes including 5 upregulated miRNAs (hsa-miR-4286, hsa-miR-663b, hsa-miR-4435, hsa-miR-25-5p and hsa-miR-4733-3p) and 4 downregulated miRNAs (hsa-miR-711, hsa-miR-4450, hsa-miR-30c-1-3p, hsa-miR-92a-3p genes). We analysed targeted genes of each miRNAs, and determined the common targeted genes between 9 miRNAs. Based on our analysis, BTN3A2, ORAI2, RCAN2 and are common genes between hsa-miR-4286, hsa-miR-4733-3p and hsa-miR-4435. Moreover, HM13, PRLR and SH3TC2 are the targeted genes of hsa-miR-4286, hsa-miR-663b and hsa-miR-4733-3p. PHF24 and SZD1 are the common targeted genes for hsa-miR-4733-3p and hsa-miR-4435. In addition to the upregulated miRNAs, there are also common genes between the downregulated miRNAs. LPP and SLC1A2 are common genes for hsa-miR-92a-3p, hsa-miR-4450 and hsa-miR-30c-1-3p. SOGA1 is the only gene which is common between 7 miRNAs hsa-miR-4286, hsa-miR-663b, hsa-miR-4733-3p, hsa-miR-4435, hsa-miR-4450, hsa-miR-30c-1-3p and hsa-miR-711. Different miRNAs have various functions in regulating gene expression in different human disease. Therefore, identification of miRNAs and targeted genes may affect the prognosis of a disease. All these data showed that miRNA and miRNA targeting genes provide a new and potential candidate for therapeutic intervention of human disease.

Keywords: Myeloid neoplasms, miRNA, exosome, bioinformatics analysis, MSC.

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Oral Presentation

Occurrence of *Alaria alata* in wild boars (*Sus scrofa*) in Poland between 2018-2022

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Abstract:

A. alata (DMS) (Goeze 1782) is a trematode and zoonotic parasite. The mesocercarial larval stage of *A. alata* (DMS) may potentially be infective for humans.
The aim of this study was to estimate the prevalence of *A. alata* in wild boars (*Sus scrofa*) hunted in Poland and to provide molecular species identification of this helminths. Muscle tissues samples were collected from 2,016 wild boars hunted in Poland during the 2018–2022 period, from nine provinces (Kujawsko-Pomorskie, Lubuskie, Małopolskie, Świętokrzyskie, Podlaskie, Pomorskie, Warmińsko-Mazurskie, Wielkopolskie and Zachodniopomorskie). The collected samples were tested with using AMT method. The trematodes were identified on species level, based on amplification and analysis of fragments of the nuclear ribosomal 18S gene and mitochondrial COI gene. The trematodes was found in 114 (5,7%) wild boars. The recovered parasites were identified as *A. alata* according to their morphological features. Amplification of 18S rRNA and COI was successful and of the expected size for all 114 DMS tested. Analysis of both sequences fragments confirmed the species identification as *A. alata*. Obtained results indicate that, wild boars are an excellent vector of *A. alata*. and may be a potential source of alariosis for consumers of raw or undercooked game meat. This research can contribute to the improvement of national and European legislation on the subject of handling carcasses in which the presence of *Alaria* spp. trematodes has been detected.

Keywords: *Alaria alata*; wild boars; alariosis; environmental risk

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Oral Presentation

Sarcocystis spp. in Wild Boars – Current Situation in Europe Including Preliminary Results From Poland

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Abstract:

Sarcocystis spp. are worldwide spread cyst-forming protozoa, that can infect many animal species, including wild boars. There are two *Sarcocystis* spp. known to infect swine (intermediate hosts) – *S. suihominis* and. *S. miescheriana*. Swine became infected by ingesting food or water contaminated with sporulated oocysts or sporocysts. Definitive hosts become infected after the consumption of muscles with cysts of *Sarcocystis spp*. Humans may become final hosts of *S. suihominis* by eating raw pork or wild boar (*Sus scrofa*) meat, which can lead to gastrointestinal symptoms. *Sarcocystis spp*. in swine is widely distributed. The prevalence of this parasite is higher in wild boars than in domestic pigs. In case of wild boars *Sarcocystis* spp. was present at the level of 38.9%, 49%, 87.1%, 97% in Portugal, USA, Latvia and Italy, respectively. The data from Poland revealed sarcocystosis among 24.7% of wild boars however, these results were published over 20 years ago. The aim of this study was to detect *Sarcocystis* spp. present in muscles of wild boards and to compare two procedures of preparing the samples for the molecular identification.

In our study we used the muscle samples of wild boars which were routinely analyzed for the presence of *Trichinella* spp. by artificial digestion method. The sample preparation was done in two ways: 1) by mixing 10 g of the muscle sample and 40 ml of PBS in a blender, filtrating the obtained homogenate and centrifugation of the filtered homogenate; 2) by collecting the digest fluid from the separatory funnel after analysing the sample by the artificial digestion method, filtration and centrifugation. The pellets left after centrifugations were used for DNA isolation. The presence of *Sarcocystis* spp. was verified by the PCR method. The obtained preliminary results indicate that *Sarcocystis* spp. are present in the most of the samples and the samples preparation procedure is very important since not all results obtained for the same samples prepared in two ways were the same. The first procedure seems to give more positive and accurate results. Monitoring the health of wild animals such as wild boars is important for understanding the possible transmission between wildlife and humans or live-stock. Therefore the presented analysis are continued.

Keywords: Sarcocystis spp.; wild boars; molecular identification keywords

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Oral Presentation

Trich-tracker a practical tool to trace inbred parasite outbreaks

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Abstract:

Molecular epidemiology using traditional sequencing is very difficult for inbred parasites due to the lack of genetic variation available to distinguish between parasites. Next-generation sequencing techniques offer a solution to this problem by increasing the range of loci that can be sequenced. The developed Trich-tracker tool is used to characterize the variation and genetic structure of larval isolates under study based on loci randomly distributed in the *T. spiralis* genome. The tool combines a molecular biology method, RADseq, and bioinformatics analysis. The RADseq method is based on the amplification and subsequent NGS sequencing of short fragments of the genome formed after cutting with dedicated restriction enzymes. The obtained short nucleotide sequences (about 120-150 base pairs) are subjected to quality control and segregation and then compared to the genome of the actual organism (here *T. spiralis*). Then Trich-tracker - integrates various bioinformatics programs (Stacks, Bowtie 2, SAMtools, Geneious Prime and STRUCTURE) and creates catalogs of loci for the population under study. Based on the created catalogs, pools of loci obtained for the studied samples are compared among each other, which make it possible to distinguish the analyzed *T. spiralis* isolates. This is the novel tool to determine the genetic similarity of larvae on the basis of genetic structure, and thus distinguish *T. spiralis* isolates from different sources. Using Trich-tracker, it is also possible to determine genetic relationships and thus infer the source of trichinellosis in a given outbreak. Trich-tracker has many options for filtering data, making analysis easier and faster. The tool can be applied to a variety of *Trichinella* species and also adapted for epidemiological analysis of other organisms characterized by large genomes.

Keywords: Trich-tracker, *Trichinella*, parasites

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Oral Presentation

Bibliographic Analysis of Postgraduate Theses in Nursing on Non-Drug Methods Used to Relieve Pain During Blood Collection in Children in Turkey

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Abstract:

The aim of this study is to examine the postgraduate theses in nursing about non-pharmacological methods used to reduce pain during blood draw in children in Turkey.

Method: This research is in the scanning model and has been examined with the bibliometric analysis technique. Theses were searched in the National Thesis Center Database of the Council of Higher Education between 6 March – 9 March 2023. A total of 25 theses were found in the search using the advanced scanning screen. Three dissertations that did not meet the inclusion criteria were excluded from the study. The research was carried out over 22 theses. Theses within the scope of the study; The data obtained were analyzed according to parameters such as year, university, institute, discipline, research method, sample group, sample age, number of samples, academic level of the advisor, non-pharmacological method used in the thesis, and the obtained data were converted into quantitative data. Data were calculated from descriptive statistics using frequency-percentage. It was determined that most of the theses on non-pharmacological methods used in nursing in Turkey to reduce pain during blood collection were published in 2020 and 2022 (n:5). It was seen that the majority of theses were made in the nursing department (n:14). It was determined that most of the postgraduate theses were designed as experimental research. It was determined that the sample groups of the theses mostly consisted of child populations between the ages of 6-12. It has been seen that methods such as ball squeezing, distraction, using virtual reality glasses are mostly preferred as non-pharmacological pain treatment in theses. It is seen that the non-pharmacological methods used in invasive procedures applied to children in our country have increased in recent years, but the number of studies on this subject is still very few.

Keywords: Nursing, non-pharmacological methods, pain, invasive intervention, postgraduate thesis.

There is no financial support for the research.

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Oral Presentation

The Effects of *Malva Neglecta* on The Probiotic Bacterium *L. rhamnosus* GG

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Abstract:

Traditional herbs are products that are used as folk medicine. Worldwide, medicinal plants and plant products have been widely used. One of these herbs is *Malva neglecta* (common mallow), which is used to treat a variety of ailments including stomachaches, wound healing, muscle pain, respiratory system inflammation, and diarrhea. Probiotic microorganisms, which are important in the intestinal flora, have been shown to prevent intestinal disorders. They can prevent pathogen colonization and reproduction, boost the immune system, and have antimicrobial properties. Probiotic-enriched foods are products that, when consumed in sufficient quantities, benefit the host. *Lacticaseibacillus rhamnosus* GG is the most extensively studied probiotic strain. Thus, the aim of the present study is to investigate antibacterial and antioxidant properties, as well as auto-aggregation of *L. rhamnosus* GG when grown with *Malva Neglecta* extract. The results showed that *L. rhamnosus* GG probiotic bacteria grown with *Malva Neglecta* extract demonstrated better auto-aggregation and antibacterial activity but not antioxidant activity.

Keywords: Antioxidant, Auto-aggregation, Antibacterial Activity, Plant extract, Probiotics

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Oral Presentation

Evaluation Of Different Brands Of Indian Honey Based On Their Physicochemical And Antioxidant Properties.

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Abstract:

Polyphenols are a class of secondary metabolites that play a major role in reducing oxidative stress. Oxidative stress is strongly linked to several degenerative diseases and chronic disorders. Polyphenols act as antioxidants and help in scavenging and detoxifying free radicals. Honey has been used in traditional medicine since ancient times. It is found to be highly therapeutic due to its antioxidant, anti-inflammatory, antibacterial, hepatoprotective, hypoglycaemic, and antihypertensive properties. This study attempts to evaluate and compare the physicochemical properties and the antioxidant activity of different brands of Indian honey (8 commercial brands, 3 local brands). The aqueous and ethanolic extracts of these samples were prepared. The pH, electrical conductivity, viscosity, and colour intensity of the honey samples were measured and their protein and carbohydrate content were also estimated. It was observed that the ethanolic extracts of honey showed better polyphenol content, antioxidant activity, metal chelation activity, DPPH activity, and FRAP activity when compared to the aqueous extracts. Whereas the flavonoid content was found to be higher in the aqueous extracts. RP-HPLC analysis was carried out to identify the different polyphenols present in the honey samples. The results showed that the different honey samples had varying physicochemical and antioxidant properties. Among all the brands, S5, S6 and S8 brands of honey displayed higher phytochemical content and antioxidant activity, which indicates that they are of high quality and can be used as a source of dietary polyphenols.

Keywords: dietary polyphenols, antioxidants, honey

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Oral Presentation

Contribution of viruses in dog diarrhea

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Abstract:

Diarrhea is one of the important causes of neonatal death in dogs. Parvovirus-associated enteritis often leads to puppy loss in most cases, so the parvovirus genera have been identified with canine diarrhea. Recent studies have suggested that more virus species may contribute to the clinic presentation of canine diarrhea than expected. Therefore, this study aimed to identify nine different viral factors in canine diarrhea. These agents are 5 viruses in the *parvoviridae* family (Carnivore protoparvovirus 1 and 3, Carnivore bocaparvovirus 1 and 2, and Carnivore chaphamaparvovirus 1), as well as canine coronavirus, canine calicivirus (vesivirus), canine astrovirus, and canine circovirus. For this purpose, a total of 150 rectal swab samples from 127 adults and 23 puppies in Sivas Municipality's animal shelter were collected. PCR and RT-PCR primers were designed using Geneious Prime software for the detection of these 9 viral agents. The 99 samples (66%) were positive for canine astrovirus, while 60 of 150 were *Carnivore protoparvovirus 3* (40%, Canine bufavirus), 57 were canine coronavirus (38%) canine coronavirus, 19 were *Carnivore chaphamaparvovirus 1* (12,67%), 17 were (11,33%) *Carnivore protoparvovirus 1* (canine parvovirus 2), 13 (%8,67) were *Carnivore bocaparvovirus 1* (canine minute virus), 9 were (%6) *Carnivore bocaparvovirus 2*, 9 were (6%) canine circovirus and 5 out of 150 (3.33%) were positive for canine calicivirus (vesivirus). No parvoviral agent was detected in 16 of 150 (10.67%) dogs with diarrhea. Meanwhile, one of the dogs (0.67%) was found to be infected with all 7 viral agents, while two of them (1.33%) were infected with six viruses, 5 with 5 viruses (3.33%), 11 with four viruses (7.33%), 24 with three viruses (16%), 36 with 2 viruses (24%) and 55 were infected with single virus (36.67%). In addition, 89.33% (134/150) of rectal swab samples were found to be infected with at least one of these 9 viruses. When the data were distributed by age, puppies had a high positive for four parvoviruses. *Carnivore chaphamaparvovirus 1* was found in 19 of 127 adult canines, but not in any of the 23 puppy samples. On the other hand, compared to adults, puppies were mostly found to have the canine coronavirus. Both pups and adult dogs were found to have very high rates of canine astrovirus positivity. Overall; the major contribution of six viruses (73.91% Canine coronavirus, Canine astrovirus, and *Carnivore protoparvovirus 3*, 60.87% *Carnivore protoparvovirus 1*, 34.87% *Carnivore bocaparvovirus 1* and 26.09% Carnivore bocaparvovirus 2) were demonstrated in puppies. On the other hand, Canine astrovirus (64.57%), *Carnivore protoparvovirus 3* (33.86%), Canine coronavirus (31.50%), and *Carnivore chaphamaparvovirus 1* (14.96%) are the foremost reasons of parvovirus associated diarrhea in adult dogs. We have studied a comphrehensive research on the diarrheic dogs. The results include valuable epidemiologic knowledge for virology specialists and scientific community. Taken together, we concluded that canine astrovirus in both adults and puppies should be considered in enteric disease cases as well as *Carnivore protoparvovirus 3* (Canine bufavirus) in puppies.

Keywords: canine, viral, diarrhea.

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Oral Presentation

Contributions of Veterinarians to Human and Animal Health Following an Earthquake Disaster

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Abstract:

In the earthquake disaster that occurred on February 6, 2023 in Turkey, many people and animals were injured or lost their lives. Survivors have needed many healthcare professionals, including veterinarians, for recover and maintain their health. This study aimed to reveal the activities of veterinarians in the region during the 30-day period after the earthquake. For this purpose, the statements and broadcasts on the subject of the media outlets and professional organizations were examined. According to the data, veterinarians have served in tents and containers as volunteers for the health and welfare of farm animals and pets affected by the earthquake. Many animals removed from the wreckage have been taken under protection in different cities in order to provide psychological and physical care. Collaborations have been discussed to the municipalities in order to propose solutions to the problems of the regional livestock. Veterinarians have indirectly supported the rescue of many people from the wreckage by caring for national and international search and rescue dogs. Despite these efforts, some public health problems and risks have also identified. Although large masses of food have been prepared in the region, no information could be obtained on how animal origin products have been examined and stored. It has been predicted that public toilet and sewage problems may cause epidemics or zoonotic diseases. Contamination of animal wastes to drinking water and groundwater may pose a threat to public health. Consequently, it can be said that many volunteer veterinarians have tried to protect animal health and welfare after this earthquake. However, veterinarians should also aim to contribute to public health with the concept of One Health. For this purpose, veterinarians should work beyond volunteering to serve people, animals and the ecosystem in the recovery process after any disasters. It has been suggested that veterinarians should act in a planned manner by complying with the legislation with pre-determined work-flow charts under the coordination of a state-supported a national center.

Keywords: earthquake, one health, public health, veterinarian, zoonotic diseases

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Oral Presentation

Effect of Different Essential Oils on *Melissacoccus plutonius*[#]

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Abstract:

The beekeeping industry in Turkey makes a great contribution to the economy, ecology, and health. *Melissacoccus plutonius*, which causes European foulbrood, is one of the most important bacteria. Most antibiotics can be used in the treatment of the disease. However, their use is prohibited due to drug residues in honey. The aim of this study was to investigate the antimicrobial activity of essential oils (including pine turpentine, eucalyptol, cinnamon, and lavender) and detect the synergistic activity of tetracycline against *Melissococcus plutonius* ATCC 35311. The antimicrobial activity of essential oils was detected through agar-well diffusion and broth microdilution technique according to EUCAST. Each of the essential oils was placed in the amount of 25, 50, and 100 µl in the 4 mm well on the Columbia agar after spreading 0.5 MacFarland inoculum prepared from fresh culture. After incubation, the zone diameters were measured with a compass. The minimum inhibition concentration (MIC) values of the essential oils were detected in two-fold dilution in the cation-adjusted Mueller Hinton broth. In addition, tetracycline was added to each well after dilution to detect the synergistic antimicrobial activity of tetracycline with essential oils. The three wells before the MIC value were used to determine the minimum bactericidal concentration (MBC) values. All experiments were performed in triplicate. The results showed that the highest zone diameter was recorded as 18 mm and 17 mm in 100 µl doses of pure cinnamon and eucalyptol essential oils, respectively. None of the diameter zones was recorded against pine turpentine and lavender. The MIC values recorded as 0.39 mg/ml, 12.5 mg/ml, 1.56 mg/ml, and 25 mg/ml for the cinnamon, lavender, eucalyptol, and pine turpentine essential oils, respectively. Although there was no detected MBC value for pine turpentine essential oil in this study, MBC values of cinnamon, lavender, and eucalyptol essential oils was 1.56 mg, 25 mg and 6.25 mg, respectively. In addition, the synergistic activity of tetracycline did not change the MIC results against essential oils tested in this study. These results demonstrate that cinnamon and eucalyptol essential oils affect *M. plutonius* at low levels, indicating it is a potential treatment agent.

Keywords: *Melissacoccus plutonius*, essential oils, bee, European foulbrood

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Oral Presentation

In vitro Antimicrobial Activity of Bee Bread and Pollen Samples Collected by Yığılca Ecotype Against Various Pathogenic Bacteria

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Abstract:

Bee bread (BB) and bee pollen (BP) are appreciated as products of high nutritional value, thanks to the proteins, essential amino acids, sugars, fatty acids, vitamins, macro and microelements. Due to this rich content both BB and BP show antioxidant and antimicrobial properties, but research on these aspects has been limited so far. In this study, BB and BP samples were obtained from apiaries at Yığılca Location which collected by special ecotype. Samples were investigated for their antimicrobial properties. The antimicrobial activity of each sample was tested against 16 different bacteria. First, the activity of the Anatolian BB and BP samples against these microorganisms was determined by the agar well diffusion method with 3 different solvents, then their zones were measured. The microdilution method was used to determine the minimum inhibitory concentration (MIC) for the antimicrobial activity tests. MIC values of different BB extracts were in the range of concentrations from 250 to 12.5 µg/mL. It was found that *Mycobacterium smegmatis* was the most susceptible bacterium. The extract of BP was effective on all gram-negative bacteria with dose from 250 µg/mL to 500 µg/mL. The lowest MIC value was detected with the concentration of 12.5 µg/mL against *M. smegmatis*. This is the first study that focuses on the antimicrobial activity of BB and BP which collected by special honeybee ecotype and demonstrates that BB and BP can be considered a possible source of novel antimicrobial compounds.

Keywords: Bee bread, bee pollen, pathogenic bacteria, antimicrobial activity.

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Oral Presentation

In sight on nutrition patterns and attitudes regarding coronary heart disease patients in Misurata

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Abstract:

A healthy nutrition pattern and lifestyle modification should be an important part of therapy for cardiovascular diseases (CVD). A greater effort is required to manage by lifestyle, eating behavior modification and good nutrition practices with or without medication. A hospital-based study conducted in some Misurata hospitals to evaluate the dietary patterns and eating behavior among coronary heart diseases (CHD) patients, in addition to correlate the relationship between dietary practices, and eating habit with laboratory tests. The study has consisted of 100 (CHD) patients, who selected randomly during follow-up in 2019-2020. The data collection techniques are involved the food frequency questionnaire, patient file data, and anthropometric measurements. Pearson correlation used to examine variation and relationship between variables. The results revealed that, highly significant variation ($P<0.001$) of CHD patients whose drink full fat milk, soft beverage, fresh fruit juice, consume sweets, adding sugar to diet, eating fruit wholesome and non-followed a diet regimen that recommended by a dietitian. The result indicated that a significant correlation ($P<0.05$) of total cholesterol and high-density lipoprotein with olive oil intake, that according laboratory test. Majority patients found to be ignorant foods that reduce risk of diseases related to CHD, no therapeutic lifestyle change, poor dietary habits and insufficient application among food regimen towards reduce disease complications. The appropriate nutrition education in hospitals and patients must be referring to nutritionist for dietary counselling and advice.

Keywords: *Attitudes, Coronary, Dietary, Heart disease, Misurata.*

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Oral Presentation

Effect of Aqueous Extract Plant Mixture on Lipid Profile Hepatotoxicity of Broiler Chicks

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Abstract:

A research study was conducted to find the effect of Zingiberofficinale, Carumcapticum, withania somnifera, Trigonella Foenum Graecum, Silybummarianum, Allium sativum and Berberis lyceum, on the growth performance of broiler chicks. A total of 240 day old chicks were purchased and were reared for 35 days in summer month. Feed and water were provided on calculated basis. Total numbers of chicks were divided into four groups (A, B, C and D) each having 60 chicks. Each group was further subdivided into three groups (replicates) each having 20 chicks. Aqueous extract of these plants was mixed at the rate of 5, 10 and 15 ml/lit with water offered to group B, C and D, respectively while group A served as a control. Chicks were reared in cages in an open sided house. The data were recorded to explore the effect of infusion based plant mixture on the lipid profile and hepatotoxicity.AST and ALP had significantly ($P<0.05$) decreasing trend in groups B, C & D. ALT was significantly ($P<0.05$) lower in Group B. Group D had significantly ($P<0.05$) lower cholesterol, Triglyceride and LDL and higher HDL values. Serum protein were significantly ($P<0.05$) higher in group A. Group B @5ml/litre of Aqueous Extract water to improve liver function. Lipid profile could be well controlled, while using plant mixture extract @ 15 ml/L of water. Therefore the use of these medicinal plants is of great concern especially for broiler hepatic-toxicity and lipid profile.

Keywords: Broilers, Lipid Profile, Hepatotoxicity, Higher density lipoprotein.

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Oral Presentation

The Effect of Fullerene C_{60} Nanoparticle against Kidney Tissue Injury on COX-2, IL-1α, HO-1 and NF-κB Gene Expressions

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Abstract

In this study, the treatment effect of fullerene C_{60} nanoparticle against kidney tissue damage caused by 7,12-dimethylbenz [a] anthracene (DMBA) in Wistar albino female rats was investigated. The animal experiments part of this study was conducted in the Firat University Experimental Animal Research Center (FUDAM) with the permission of the Firat University Animal Experiments Ethics Committee dated 18.03.2021 and numbered 2021/05. In this study, 60 Wistar albino female rats (n = 60, 8 weeks old) were used. These rats were divided into 4 groups and each group included 15 rats. Groups are as follows: (1) Control Group: Group fed with standard diet; (2) Fullerene C_{60} Group: The group given Fullerene C_{60} (1.7 mg/kg bw, oral gavage); (3) DMBA Group: The group given DMBA (45 mg/kg bw, oral gavage); (4) Fullerene C_{60} + DMBA Group: The group given Fullerene C_{60} (1.7 mg/kg bw, oral gavage) and DMBA (45 mg/kg bw, oral gavage). The rats were decapitated after 16 weeks and their kidney tissues were examined. Expression levels of COX-2, IL-1α, HO-1 and NF-κB proteins in breast tissue were determined by western blotting technique. Compared to the DMBA-treated group, COX-2, IL-1α and NF-κB protein expression levels were decreased in the fullerene C_{60} administered groups, while the HO-1 protein expression level was significantly increased. According to the results, it was determined that fullerene C_{60} has a therapeutic effect by reducing kidney tissue damage.

Keywords: COX-2, HO-1, IL-1α, NF-κB

Acknowledgements

This work was supported by Scientific Research Projects Coordination Unit of Firat University. Project number: FF. 20.07. In addition, this study was supported by the Council of Higher Education (CoHE) 100/2000 Biotechnology priority field doctoral project and The Scientific and Technological Research Council of Turkey (TUBITAK) 2211/C program.

Third International Congress on Biological and Health Sciences
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Oral Presentation

The Effect of Olive Cake on Milk Fatty Acids and Atherogenic Index in the Dairy Buffaloes

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Abstract:

Olive cake is a residue of the oil extraction of olive fruit, which after drying can be used as the cheap and nutritious residues in animal. The aim of this trial was to study the use of olive cake on milk fatty acid profile of dairy buffalo. Fifteen lactating buffaloes have used with average age; 4 years and average weight; 470 kg in a completely randomized design. Experimental treatments were included 0%, 7.5%, and 15% olive cake substituted with wheat. After 45 days, milk samples were taken and fatty acid pattern was measured. Results indicated that 15% olive cake increased the concentration of short chain and unsaturated fatty acids, linoleic acid and conjugated fatty acid of milk ($P<0.05$). Also based on the results, atherogenic index of milk was lower by using olive cake ($P<0.05$). The C18:3 value was 0.4 and 0.13 % and CLA was 0.32 and 0.08% for olive cake and control treatment, respectively ($P<0.05$). Feeding 15 % olive cake significantly increased concentration of unsaturated fatty acids and CLA of milk and improved saturated/unsaturated ratio and atherogenic index toward heart health. Therefore, due to the cheap price of olive cake, inclusion up to 15% in the diet of lactating buffaloes is recommended.

Keywords: Olive cake, buffalo, fatty acid profile, atherogenic index

Third International Congress on Biological and Health Sciences
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Oral Presentation

Clustering Areas of Bovine Tuberculosis Outbreaks in Türkiye

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Abstract:

Bovine tuberculosis (bTB) is a zoonotic disease that significantly impacts animal and human health, leading to substantial economic losses due to decreased yields, trade restrictions, and control costs. The use of Geographic Information Systems (GIS) in veterinary epidemiology has been increasingly expanded. In this study, bTB outbreaks were mapped at the premises level using GIS at the most detailed scale. The distribution of bTB outbreaks, which is the fundamental data of the research, according to premises was obtained from the Veterinary Information System (VETBIS) at the Ministry of Agriculture and Forestry for the period of 2017-2021. Each premise in Türkiye where outbreaks were observed was mapped based on its geographic location on the earth. From 2017 to 2021, the number of bTB outbreaks was determined to be 1,220, 1,629, 2,248, 1,877, and 2,052, respectively. The total number of bTB outbreaks was determined to be 9,026. Although changes in the number of outbreaks were observed over the years, the distribution of outbreaks across the country was not uniform. It was found that bTB outbreaks were rare or nonexistent in some regions of the country while clustered in others. Specifically, bTB outbreaks were concentrated in Thrace, the east and south of the Izmit Gulf, the Big Menderes Basin in the Aegean region, the Central Black Sea, the north and east of Central Anatolia, and in areas along a diagonal line stretching from Kars to Adana. On the other hand, few or no provinces in the Eastern Black Sea Region and in the provinces east of the Kars-Adana line were affected. As a result, it was concluded that bTB outbreaks could result from the local purchase of infected animals, the recurrence of infection in the premises, common pasture-water-equipment, neighboring premises, and animal market spread. The identification of clustering areas is expected to guide decision-makers to identify target intervention areas in the fight against the disease and to determine the national fight strategy.

Keywords: bovine tuberculosis, clustering area, epidemiology, GIS, outbreak.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Oral Presentation

Protective Effect of Celeriac (*Apium graveolens*) Leaf Essential Oil on Temperature and Oxygen-Induced Fish Oil Oxidation

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Abstract:

This study aimed to identify the volatile components of the essential oil (CEO) extracted from the leaves of Celeriac (*Apium graveolens*) and evaluate its antioxidant effect during the thermal oxidation of fish oil. As is well known, fish oil is an essential lipid source that is used as a fundamental lipid source in aquaculture and poultry starter diets. Due to the large quantity of polyunsaturated fatty acids it contains, fish oil is readily oxidized. To prevent oxidation of this essential oil source for livestock nutrition, the leaves of celeriac were removed from the plant and the essential oil was extracted using the steam distillation method and a Clevenger apparatus. To determine the volatile components of the obtained product, gas chromatography and mass spectrometry were employed. The obtained chromatogram from the analysis was compared to the W9N11 library. As a consequence of the volatile component analysis, 98.81% of the derived product's volatile components could be identified. Phthalide (3-isobutylidene) with a concentration of 49.42% and Fenipentol with a concentration of 28.45% were determined to be the primary components of the product following analysis. Antioxidant activity was determined based on the 2,2-diphenyl-1-picrylhydrazyl (DPPH) analysis conducted on the product. The analysis determined the 50% inhibitory concentration value (IC50) for CEO to be 30.52 ppm. To determine the protective effect of the product on fish oil oxidation, 0% (CEO0), 0.1% (CEO0.1), 0.5% (CEO0.5), 1% (CEO1), and 3% (CEO3) ratios of CEO were added to fish oil, and the experimental groups were exposed to 24 hours of oxidation at 70 °C with continuous ventilation. As determined by the oxidation study, the addition of CEO inhibited fish oil oxidation, and the product's oxidation radicals decreased substantially ($p<0.05$) depending on the CEO concentration. According to the findings of the study, the group with the lowest oxidation of fish oil due to temperature and ventilation was the one containing 3% CEO.

Keywords: *Apium graveolens*, Essential oil, Volatile compounds, Natural antioxidant.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Oral Presentation

Investigation of the effect of microwave assisted extraction of broccoli (*Brassica oleracea L.* var *italica*) on quality criteria

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Abstract:

Broccoli (*Brassica oleracea* L. var. *italica* Plenck) is a popular winter vegetable belonging to the Cabbage family (*Brassicaceae*), cultivated in large areas in developed countries, and whose consumption has increased rapidly in recent years in our country. Broccoli is a vegetable rich in vitamin E (α-tocopherol), vitamin A (precursor β-carotene) and vitamin C (ascorbic acid), which are known to have antioxidant properties. For all these reasons, it was aimed to determine some quality criteria by microwave assisted extraction of broccoli vegetable. Microwave oven was used for microwave assisted extraction of phenolic substances from freeze-dried broccoli samples. Different time ranges (30, 60, 90 seconds) were applied at different power levels (360, 600 and 900 W) for the extraction. Samples were diluted 1:10 with 80% methanol (containing 1% HCl) solution, and the samples were placed in a glass beaker and extracted in a microwave oven. In order to understand the quality criteria of the samples as a result of extraction, total phenolic substance, antioxidant activity, color determination and ascorbic acid amounts were determined. According to the results, the highest amount of phenolic substance in broccoli samples was 725.52 mg GAE / kg at 360 W / 60 s, and the lowest was 225.77 mg GAE / kg at 900 W / 90 s. The DPPH method was used to determine the antioxidant activity values of the samples. The lower the EC_{50} values calculated from the graphs, the higher the DPPH radical scavenging activity. As a result of the study, the lowest EC_{50} value was found at 3.38 mg/mL and 900 W / 30 s parameters, while the highest EC_{50} was found at 900 W / 90 s at 12.29 mg/mL. When the results were examined in terms of color characteristics, differences were observed between the L*, a*, b* values of broccoli samples at different times and powers. Finally, the highest amount of vitamin C was seen as 191.451 mg / 100 g at 360 W / 30 s condition, while the lowest amount of vitamin C was 85.970 mg / 100 g at 600 W / 90 s condition.

Keywords: broccoli, microwave, extraction, phenolic, antioxidant

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Oral Presentation

Effects of Echinacoside on Apoptosis, Lectins and Antioxidants in Experimental Diabetes Induced Rats

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Abstract:

Diabetes is one of the most important chronic metabolic diseases with a high rate in the world, which is shaped as a result of insulin deficiency or decrease in insulin activity. Echinacoside, a natural phenylethanoid glycoside, has been reported to have neuroprotective, cardioprotective, antioxidant, anti-inflammatory, antiosteoporotic, antidiabetic effects. In this study, the effects of Echinacoside on apoptosis, oxidative stress, antioxidants and lectins were investigated in an experimental streptozotocin-induced diabetes model in rats. In this study, 32 male Sprague Dawley rats were divided into four groups, 8 in each group. Groups; Control Diabetes, Echinacoside, Diabetes+Echinacoside. In this study, histopathological examination, immunohistochemical Bcl-2 and Bax analyzes, TUNEL method were used, as well as Galactose (EEL), Lactose (RCA I) and Mannosa (GNL) specific oligosaccharide units using biotinylated labeled lectins were analyzed in liver and pancreatic tissue samples. In addition, apoptotic DNA fragmentation was determined in liver and pancreas tissues,by ELISA method. MDA, SOD, TAS analyzes were performed in liver supernatants. MDA, SOD, TAS, TNF-α, NO and IL-6 analyzes were performed in the serum. Echinacoside application significantly reduced histological damage. Echinacoside also significantly decreased MDA, serum NO, IL-6, TNF-α levels and increased SOD and TAS levels in liver tissue samples and serum. Echinacoside suppressed apoptosis through downregulation of Bax, reduced DNA fragmentation and induced Bcl-2 expression. It was observed that oxidant levels and apoptosis rates increased in the diabetes group, histopathological evaluation confirmed these findings, and the activities of antioxidant enzymes decreased significantly. Histochemically, a more intense staining was detected in lectin reactions in the diabetes group compared to the control group. Echinacoside, on the other hand, decreased the staining intensity. Echinacoside administration slightly ameliorated the pathological and biochemical changes caused by diabetes in rats. In the light of the data obtained in this study, it was determined that Echinacoside can have a protective effect by suppressing proinflammatory cytokines and apoptosis, reducing oxidative stress in diabetes.

Keywords: Echinacoside, diabetes, apoptosis, lectins, oxidative stress

This work was supported by Scientific Research Projects Unit of Balikesir University under grant No. 2020/31 in Turkey

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Oral Presentation

Comparison of Carcass Weight and Characteristics in Some Cattle Breeds

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Abstract:

Beef is an indispensable source of protein for humans. The production is increased in recent years with the effect of increasing population. Besides of beef cattle breeds, male calves of dairy and combined productive animals are also fattened. The hot carcass weights, carcass characteristics and skin weight of 588 male cattle of Holstein, Brown-Swiss, Simmental and Montbeliarde breeds raised in Amasya region in this study. For this purpose, the hot carcass weight was taken at the slaughterhouse and the weights of mince, cubed meat, steak, tenderloin, ribeye at the chilled carcass and skin weights were investigated of the beef cattle raised by the members of the Amasya Cattle Breeders Association. Slaughtered animals were fed mainly concentrated feed with commercial fattening feed and dry roughage (80/20%). The hot carcass weights of slaughtered animals in Holstein, Brown-Swiss, Simmental and Montbeliarde were respectively; 343.70±3.12, 319.80±15.50, 336.56±3.58 and 349.44±6.06 kg. The hot carcass weights of the animals according to age 13-15 months, 16-18 months, 19-21 months, 22-24 months and 24 months were respectively; 316.44±8.20, 337.44±3.18, 342.00±3.62, 339.98±5.48 and 370.35±9.11 kg. While the effect of breed on hot carcass weight was insignificant ($p>0.05$), the effect of age was significant ($p<0.05$). The breed and age interaction is significant ($p<0.05$). The highest skin weight was determined in the Simmental breed, and the lowest in the Holstein breed. While the effect of breed on mince, cubed meat, steak, tenderloin fillet was insignificant ($p>0.05$) and it was significant on ribeye ($p<0.05$). However, while the effect of age on mince, cubed meat, steak, tenderloin was significant ($p<0.05$), it was insignificant on ribeye ($p>0.05$). As a result of the study, it is evaluated that different breeds reach their target slaughter weights in different times, and that breeders determine the target slaughter time according to carcass yield rather than age.

Keywords: cattle, carcass, carcass characteristics, skin.

Acknowledgement: The authors thank the Amasya Cattle Breeders Association.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Oral Presentation

Effects of Post-Activation Potentiation (PAP) Interventions at Different Loads on Muscle Electrophysiology and Performance (Preliminary Study Findings)

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Abstract:

Although post-activation potentiation (PAP) is a theory that provides an acute increase in muscle strength performance, it has recently been recommended by researchers as an effective and practical method in muscle strength development. The aim of this study is to examine the effects of PAP interventions at different loads on electrophysiological and performance. The study involved four healthy male participants who regularly train (mean age 21.50 years, mean weight 83.75 kg, and mean sports age 9.25 years). The study was carried out in three sessions. In the first session, participants' anthropometric measurements, 1 Repetition Maximum (RM) output (Epley formula), and baseline Maximum Voluntary Isometric Contraction (MVIC; 10 sec) values were measured. In the second and third sessions (1 week between sessions), a 7-minute, 60 rpm, 60 Watt warm-up session was applied on the bicycle ergometer of the participants. Then, after 5 minutes of passive rest, the participants performed 6 repetitions of back squats with 1 RM 60% load and 3 repetitions of back squats with 1 RM 90% load at 2 eccentric - 1 transition - 2 concentric - 1 transition phase tempo. After the participants rested passively for 5 minutes, MVIC values were measured again. Electrical activation of the quadriceps muscle (Vastus Lateralis; VL and Vastus Medialis; VM) during MVIC was recorded by surface electromyography (sEMG) device. Peak power output (N) during contraction was measured using an isometric leg force dynamometer. In the statistical analysis of the collected data, analysis of variance (repeated measures ANOVA) was applied for repeated measurements. The statistical significance level was determined as $p<0.05$. While there was a significant difference in the MVIC values in the control condition and after 6 repetitions of 1 RM with 60% load and 3 repetitions of back squat with 1 RM 90% load ($p= 0.041$), there was no significant difference between the two conditions ($p>0.05$). In EMG analysis, peak muscle activity increased for both muscle groups at both applied loads. The greatest increase was observed in VL. Compared to the control condition, more significant motor unit synchronization responses were seen in the loaded phases. In conclusion, our preliminary research demonstrates that PAP intervention is a critical application that improves motor unit synchronization, peak muscle activity, and performance immediately. The Vastus Lateralis muscle is considered to be heavily used in branches that need speed and strength, and there is a significant need to improve performance in these branches. In addition, it is thought that the increased motor unit synchronization response may contribute to reducing the risk of injury in athletes.

Keywords: Post-Activation Potentiation (PAP), electromyography (EMG), Back Squat, Maximum Voluntary Isometric Contraction (MVIC)

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Oral Presentation

Barcoding and Phylogeny of Some *Ethmia* (Hübner 1819) (Ethmiinae, Lepidoptera) Species from Turkey

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Abstract:
The genus *Ethmia* (Hübner, 1819) belongs to the subfamily Ethmiinae, a subfamily of medium-sized moths with a worldwide distribution. According to molecular and morphological analysis, results carried out in recent years, Ethmiinae was placed in the Depressariidae subfamily. However, this subfamily was previously considered within the Elachistidae and was labeled as such in the literature between 1999 and 2013. These studies have greatly enhanced our knowledge of the phylogeny and character evolution of the subfamily Ethmiinae and its genera. Despite this, systematic problems of *Ethmia* still continue due to minimal taxon sampling and the inability to sample from different geographies. Morphological and genital variations among the species of this genus cause the character polarization of the genus not to be made. Molecular analyses with DNA barcoding in recent years have been of great benefit in providing an accurate systematic categorization. Obtaining samples and barcode records on a global scale in widely distributed organisms is vital for accurate phylogeny estimation. In the present study, in our country, which has very high species diversity in terms of faunism, Turkey's *Ethmia* species were barcoded for the first time. Genetic distances between species of the genus were calculated according to the Kimura 2-parameter and the phylogeny of the genus was estimated using Bayesian inference, and Maximum likelihood algorithms. According to the analysis, the genetic distance between *Ethmia amasina* Adıyaman population and *Ethmia hakkarica* Hakkari population showed that these two species are not discrete species in molecular terms. *Ethmia caradjae* (Adıyaman and Van), *Ethmia similis* Bitlis, and *Ethmia tripunctella* Adıyaman populations were determined for the first time as stable species, genetically distant, and phylogenetically different from European species.

Keywords: DNA barcoding, *Ethmia*, genetic distance, phylogeny estimation, Turkey.

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ONLINE 14-15-16 APRIL 2023

Oral Presentation

A Novel Temperature Responsive Nano *In Situ* Gel For The Ocular Delivery Of Flurbiprofen

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Abstract:
The present study involves formulation and evaluation of a Temperature responsive nano *in situ* gelling system to improve the solubility and ocular residence time of flurbiprofen. This study was carried out in two phases; In first phase due to its insoluble nature it was formulated in the form of nanoparticulate system and it was evaluated and characterized. The nanoparticles obtained demonstrated an average size range of 150 to 250 nm in diameter, up to 79.67% encapsulation efficiency and upto 86.45 % drug release over a period of 2 h. In second phase, these particulate systems were dispersed in an aqueous solution of Pluronic F 127 (14%) and various concentrations of Carbopol 934 in combination to form a nano *in situ gel*. The prepared *in situ gel* was investigated for its physicochemical properties i.e., pH, flow ability, sol–gel transition temperature, gelling capacity and rheological properties. Carbopol did not showed any significant effect on sol-gel transition temperature in optimized concentration($\leq$ 0.3%)but altered gelling capacity,pH,transparency of the formulations. In optimized *in situ* gelling formulation (NIGF3), approximately 92 % of *in vitro* drug release was observed after 6 h.NIGF3 increased precorneal residence time and high concentration in aqueous humor when compared to flurbiprofen eye drops. Higher concentration of drug in aqueous humor was due to its increased saturation solubility of drug and increased residence time was attributed due to formation of gel matrix-embedded nanoparticles. This demonstrated that nano *in situ* gels (NIGF3) containing aqueous solutions of 0.3% w/v concentrations of Carbopol 934 with Pluronic F 127 may significantly prolong the residence time and improve bioavailability of a water insoluble drug.

Keywords: Nano *in situ* gel**,** Flurbiprofen**,** Nanoparticles, Pluronic F 127, Carbopol 934, Ocular Delivery.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Oral Presentation

Anti-Paw Edema of *Ephedra alata* Decne and its Protective effect Against Pirimicarb Induced Cytotoxicity of Neutrophils

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Abstract:

Ephedra alata, is a medicinal plant that belongs to the family of Ephedraceae and has various medicinal use purposes. Diverse secondary metabolites of *Ephedra alata*, such as: alkaloids, tannins, saponins, proanthocyanidins, phenolic acids, flavonoids, and essential oils, have been identified and have an extreme interest for their biological activities. Pesticides are very hazardous and represent a risk to human well-being. They induce cellular toxicity by mediating oxidative stress and cellular signaling for apoptosis. The current study aimed to assess the anti-inflammatory ability of *Ephedra alata* Decne crude extract (EaCE) on formalin induced paw edema in male Wistar rats. We aimed evenly to evaluate its protective effect against pirimicarb (carbamate pesticide) provoked cytotoxicity on human neutrophils. The results have shown, an outstanding reduced edema effect; the administration of EaCE in parallel of provoked paw edema, has eminently reduced the percentage of edema comparatively to diclofenac effect; indeed, the effect of EaCE after 240 min was better than diclofenac effect at 200mg/kg and 400mg/kg. Moreover, the EaCE has enhanced the viability % of neutrophils from 74,44 ± 2,47: to 94,09 ± 1,19 when EaCE was applied at 100 µg/ml ,to 85,57 ± 1,17 when EaCE was applied at 75 µg/ml to and to 81,69 ± 1,55 when EaCE was applied at 50 µg/ml. We conclude, that *EaCE* has bioactive substances that confer it the anti-inflammatory property and the cell protective ability from toxic agent like: pesticides. These finding support and corroborate our previous and alternative studies. We are planning, to identify in future projects the precise molecules responsible of each effect and their specific action mode.

Keywords: *Ephedra alata* Decne, anti-paw edema, neutrophils, cytotoxicity, pirimicarb.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Oral Presentation

Antidiabetic Effect of Herbal Formulation (SMNSCC) on Alloxan Induced Diabetic Rats

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Abstract:
The current findings was aimed to evaluate the developed perfect drug delivery system to cure the metabolic disorders, mainly diabetes which is responsible for renal, neuronal, nephro and hepatic disorders. In present study polyherbal formulation were used to normalize the elevated level of blood glucose along with the architecture of kidney and adrenal glands. The polyherbal formulation of *Nigella sativa, Silybum marianum,* and *Citrullus colocynthis* collectively called as "SMNSCC" formulation used against diabetic rats. Thirty two albino rats were divided into four groups; normal control, diabetic control, standard drug treated diabetic group and herbal emulsion (SMNSCC) treated diabetic group. The diabetes was induced by using the diabetogenic agent alloxan (10%) at a dose of 150 mg/kg (dissolved in isotonic NaCl). The alloxan significantly (p< 0.001) increased the weight of kidney, adrenal gland and blood glucose level. Whereas, significantly disrupted histology of kidney and adrenal glands. After the treatment with standard drug (glibenclamide) and polyherbal formulation (SMNSCC) for 21 days at a dose of 1.5 mL/Kg and 2.5 mL/Kg respectively, significantly lowered the weight of kidney, adrenal gland weight and blood glucose levels (156.96%) when compared with diabetic controlled group. The administration of glibenclamide and polyherbal formulation may also significantly restored the altered architecture of kidney and adrenal glands level as compared to diabetic group. The finding suggested that polyherbal formulation may showed the antidiabetic potential along with nephron-protective effects in diabetic animals, may also be utilized as herbal remedies and food stuff.

Keywords: polyherbal formulation, alloxan, glibenclamide, kidney, adrenal gland

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Oral Presentation

LC-MS/MS Phytochemical Profiling, Antioxidant Activity and Cytotoxicity of Three Kinds of Dragon Fruits

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Abstract:
Dragon fruit is a tropical edible plant that is native to Mexico, South America, Thailand and Vietnam. It is also known as pitaya and belongs to the cactus family (Cactaceae). The fruits of the genus Hylocereus generally includes three species: (1) *Hylocereus undatus* (white pitaya), (2) *Hylocereus costaricensis* (Costa Rican pitaya), (3) *Hylocereus megalanthus* (yellow pitaya). The fruits of this genus are rich for active secondary metabolites, thereby they possess remarkable biological activities along with significant pharmacological properties. Therefore, the present study aimed to evaluate antioxidant and cytotoxic activities, as well as to determine the phytochemical profile of three kinds of dragon fruits. In this work, three kinds of dragon fruits, *H. undatus*, *H. costaricensis*, and *H. megalanthus* were extracted with distilled water (dH_2O), ethanol (EtOH, 70%) and methanol (MeOH, 70%). In vitro antioxidant activities of the extracts were analyzed using 2,2-diphenyl-1-picrylhydrazyl (DPPH), 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid) (ABTS), ferric reducing antioxidant power (FRAP), and cupric ion reducing capacity (CUPRAC) assays. The total phenolic content (TPC) and total flavonoid content (TFC) of dragon fruits were also analyzed by the Folin-Ciocalteu method and aluminum chloride colorimetric assay, respectively. 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) analysis was performed to investigate anti-cancer potential of the extracts against human MCF-7 (human breast cancer) and HepG2 (human liver adenocarcinoma) cells. In addition, phytochemical profile of dragon fruits was identified using liquid chromatography-mass spectrometry (LC-MS/MS). All conditions were the same as described in our previous research, and all experiments were conducted at least in triplicate for each assay. The extracts obtained from the *H. undatus* were found to have the highest biological activities in terms of antioxidant activity and cytotoxic effect when compared with the extracts of *H. costaricensis* and *H. megalanthus.* As for the phytochemical properties, LC-MS/MS screening showed the presence of some metabolites, such as cyanidin 3-glucoside, delphinidin 3-glucoside, pelargonidin 3-glucoside, epicatechin, epicatechin gallate, epigallocatechin, gallocatechin, gallocatechin gallate, fatty acids, gallic acid, and caffeine. The chromatographic results indicated that dragon fruits are rich sources of active phytochemical components. In summary, the results suggest that the three kinds of dragon fruits may be good candidates for functional food and pharmaceutical industries. Accordingly, the data from this research provide new insights regarding medicinal pharmaceutical aspects pf the dragon fruits that need to be validated using further *in vitro* and *in vivo* analyses, which are ongoing in our laboratory.

Keywords: Dragon fruits, anticancer, phytochemicals, chromatographic analysis, antioxidant activity

Acknowledgment: This research was funded by Gaziantep University, grant number TF.HZP.22.62, from the Scientific Research Project Unit of University, Gaziantep-Türkiye.

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Oral Presentation

Stereological and Immunohistochemical Investigation of Botox-Applied Gastrocnemius Muscle in Adult Male Rats

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Abstract:

In this study, Botox A applied to the left gastrocnemius muscle in rats. In this study, it was aimed to determine the volume densities of the left gastrocnemius muscle on the 15th and 21st days using stereological method and to reveal their immunohistochemical effects. A total of 30 male Wistar Albino rats, 3 months old, in 3 different groups, were used as material. Botox A solution of 2.5U in 0.1ml saline was prepared and injected into the left gastrocnemius muscle of a total of 20 rats belonging to 2 groups. At the end of all procedures, all rats were fixed by perfusing 10% buffered formaldehyde. Then, the rats were dissected and the left gastrocnemius muscles were exposed. In the study, the left gastrocnemius muscle of 3-month-old rats were obtained in one piece, caput laterale and caput mediale. While the sections were taken, one of the first 15 sections was randomly selected, and each subsequent 80th section was determined by systematic random sampling method. Thus, 8-10 sections of 5µm thickness were taken from the gastrocnemius muscle of an animal. These sections were stained with hematoxylin-eosin staining technique and photographed under the microscope. Using the Cavalieri's Principle, the total volumes of the gastrocnemius muscle by SHTEREOM 1.0 program package were determined with the dotted area ruler. The results obtained were subjected to the ANOVA test in the SPSS (IBM SPSS for Windows, ver.25) package program and it was determined that the volume values between the groups showed a statistically significant difference ($p<0.05$). In addition, the effects of Botox A on the left gastrocnemius muscle on the 15th and 21st days were immunohistochemically detected with caspase 3 antibody stain.

Keywords: botox, gastocnemius muscle, immunohistochemistry, stereology, volume.

This research was supported by the Van Yuzuncu Yil University Scientific Research Projects Directorate with the project numbered TYL-2022-9745.

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Oral Presentation

Protective Effect of Taurine on Oxidative Stress Induced by Pyraclostrobin in Rats[#]

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Abstract:

Pyraclostrobin is a widely used strobilurin derivative fungicide and impairs reproductive performance and embryonal development, together with oxidative stress and DNA damage in the organism. Taurine, obtained from the amino acid cysteine, plays an important role in metabolic processes such as antioxidant, cytoprotective, and osmoregulation. In this study, it was aimed to determine the possible protective efficacy of taurine against oxidative stress in male rats given pyraclostrobin. In the study, Sprague Dawley rats were divided into 6 groups with 8 animals in each group. In the study, rats were given 0.5 ml corn oil, 30 mg/kg pyraclostrobin, and 30 mg/kg pyraclostrobin with 50, 100, and 200 mg/kg taurine by gastric gavage for 28 days. It was determined that pyraclostrobin application increased some biochemical parameters (aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase, blood urea nitrogen, and creatinine) and malondialdehyde levels, while on the contrary, it caused a decrease in glutathione and antioxidant enzyme activities such as superoxide dismutase and catalase levels. Nonetheless, apoptotic (*Bax, Caspase 3, Caspase 8, Caspase 9* and *p53*) and pro-inflammatory (*TNF-α* and *NFκB*) genes and *CYP2E1* mRNA expression levels increased and the anti-apoptotic gene *Bcl-2* mRNA expression levels decreased by pyraclostrobin treatment in liver tissue. Also, it was observed that pyraclostrobin application increased DNA damage and caused histopathological changes in tissues. It was determined that 50, 100, and 200 mg/kg doses of taurine administered together with pyraclostrobin reversed the changes caused by pyraclostrobin. As a result, taurine had a cytoprotective effect together with its antioxidant, anti-inflammatory, and anti-apoptotic effects against the oxidative damage induced by pyraclostrobin.

Keywords: Pyraclostrobin, taurine, oxidative stress, inflammation, rat.

[#]This study was master thesis of the first author and was financially supported by the Afyon Kocatepe University Scientific Research Council, Afyonkarahisar, Turkey (Project no: 20.SAG.BIL.29).

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Oral Presentation

A Qualitative Research On The Experiences Of Pediatric Emergency Service Professionals With Refugee Patients

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Abstract:
The current literature indicates that refugees affect many parts of the world. This study was conducted to examine the experiences and feelings of health professionals while providing care to refugee children and families in pediatric emergency service. This qualitative research, used parallel design guided by the Consolidated Criteria for Reporting Qualitative Research checklist. In addition, permission was obtained from the University Social and Human Sciences Ethics Committee. The study was conducted with 12 health professionals working in pediatric emergency services of a university hospital in Turkiye between September and October 2022. Research data were collected by Semi-structured Interview Form. One-on-one in-depth interviews were conducted in a quiet room in the pediatric emergency room. During the talks audio recordings were made with the permission of the participants. The audio recordings obtained from the interviews were written directly to the computer. The data were analyzed using a qualitative content analysis method. The average age of the health professionals participating in the study is 34.5, the average working year in the pediatric emergency services is 4 years, and 4 of them are doctor, 8 of them are nurse. Based on content analysis, the themes of the study were determined as follows: (1) failure (healthcare system, socio-economic status, language and communication, health literacy), (2) compassion fatigue (neglected child), (3) professional responsibility (professional awareness). Health professionals state that with the addition of refugees to the country's population, there is an insufficiency in the health care system and the workload increases. The inadequacies of refugees in terms of socio-economic, language-communication, health literacy are also emphasized. It has been determined that they feel sorry for these inadequacies, but they try to continue care without discrimination due to their professional ethical responsibilities.

Keywords: pediatric emergency services, health professionals, refugee patients, qualitative research, child, experiences, feelings.

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Oral Presentation

Chemometric Analysis of Different Cake Additives on Chemical Composition of Cake

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Abstract:
Cake products can be found in a wide variety of forms and are one of the most important products of the bakery industry. Pumpkin (*Cucurbita pepo* L.) grown to produce pumpkin seeds does not have an option for evaluation in the food industry. Quinoa (*Chenopodium quinoa* Willd.) is an annual plant of the *Chenopodiaceae* family that originates from South America and can be cultivated in many different types of soils and climates. It has been reported to be rich in essential and semi-essential amino acids as well as high protein content. Lupine (*Lupinus albus* L.) seeds have been used in human nutrition and treatment for many years. However, in the last 20 years, quite new properties of lupine have been discovered and various uses as a functional food have begun to emerge. In this study, Principal component analysis (PCA) and hierarchical cluster analysis (HCA) were used as multivariate analysis to reveal the chemical properties of different samples. As a result, it was determined that the chemical properties of the samples can be differentiated according to the methods. The effects of using quinoa, lupine and pumpkin flours in cake production on chemical analyzes of cake samples were evaluated using PCA score and loading charts. When the PCA score graph was examined, it was observed that the samples were grouped. According to the results, the quinoa and lupine samples differed from the pumpkin sample according to basic component 1. The lupine sample differed from the pumpkin and quinoa sample in terms of principal component 2. Accordingly, the PCA plot shows the distribution of the samples on the two principal components that make up 98.4% of the total variance. The first principal component explains 63.7% of the total variance and the second principal component explains 34.7% of the total variance. It was observed that the samples were separated by principal component analysis. According to the hierarchical clustering analysis, three different groups were formed. According to the multivariate analysis, the samples were well separated from each other in terms of chemical properties.

Keywords: pumpkin, lupine, quinoa, chemometric analysis

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Oral Presentation

Magnesium Levels in Cancer Patients

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Abstract:
Magnesium deficiency in the blood may contribute to the increased prevalence of cancer. In this study, it was aimed to examine magnesium levels in different cancer types. The study was a retrospective, single-center study. Patients who applied to the medical oncology outpatient clinic of a training and research hospital and were diagnosed with cancer were included in the study. Magnesium levels were determined on Beckman Coulter AU5800 (Brea, California, USA) using appropriate kits. Magnesium levels below 1.9 mg/dl were considered as hypomagnesemia and P value ≤0.05 was considered statistically significant. Hypomagnesemia was detected in 118 (%31.72) of 372 patients included in the study. The mean magnesium level of the patients included in the study was found to be 2.12 mg/dl. Magnesium levels were negatively correlated with age (p=0.002). There was no significant difference between the magnesium levels of male and female patients. The highest rate of hypomagnesemia (89.4%) was found in patients with solid tumors. This rate was 42.8% in patients with gastrointestinal cancer. While it was 21.8% in patients with lymphoma, it was 14.9% in patients with gynecological malignancy. Magnesium is a very important mineral for the function of the body and is the fourth most abundant mineral in the body. Magnesium deficiency makes itself felt in the form of loss of appetite, nausea, vomiting, hair loss, constipation, fatigue and weakness. In more severe cases; muscle cramps, cardiac arrhythmias, numbness, lack of concentration, mental confusion, fibromyalgia may be seen. Therefore, magnesium levels should be monitored in cancer patients. Appropriate treatments should be applied when hypomagnesemia is detected.

Keywords: Magnesium, hypomagnesemia, cancer, tumor

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Oral Presentation

Determining the Attitudes of Nursing Students Towards Child Love and Child Rights: A Cross-Sectional, Comparative Study

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Abstract:
Love is a fundamental need and a common requirement for people of all ages. Love for children is a fundamental driving force in human development. Individuals establish the foundations of self-confidence through child love. The aim of this study is to determine the attitudes of nursing students towards child love and child rights. This study was carried out in a comparative cross-sectional type. The population of the study consists of students studying at a state university located in the east of Turkey. It is aimed to reach the entire population without any sample selection in the study. Research data was collected using "Descriptive Information Form", "Barnett's Child Love Scale", and "Child Rights Attitude Scale". The online "Google Forms" application was used to reach more participants. 218 students participated in the study and the mean age of the students was determined as 21.17±1.98. In the study, 69.7% of the students were female and 26.6% were in the fourth grade. Over half of the participants (58.3%) willingly chose to study in their current department. Additionally, 13.3% of the students have four or more sisters, while 19.3% have two brothers. Nearly 40.4% of the participants have previous experience caring for children. The mean scores of students for child love and child rights attitudes were determined as 79.28±15.56 and 72.26±10.99, respectively. The child love scores of second-grade students and the child rights attitude scale scores of fourth-grade students were higher. Those who chose their department willingly had higher and significant mean scores in terms of child love (Z=2.81; p=0.05), child rights attitudes (Z=0.26; p=0.027), as well as those who previously cared for children in terms of child love (Z=1.62; p=0.05) and child rights attitudes (Z=0.28; p=0.05). Nursing students' knowledge and attitudes towards child love and child rights are high. It is thought that the nursing curricula's courses on child love and child rights can increase knowledge and awareness.

Keywords: child love, child, nurse, child rights.

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Oral Presentation

Determining the types and quality levels of some important foods with machine learning

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Abstract:
In the study, 1000 images were recorded from each group to determine the type and freshness parameters of 6 important foods (tomato, pepper, potato, orange, apple and fish) by machine learning. Teachable Machine (TM), an open source platform for machine learning, was used, and the working performance of TM was 100% successful in identifying types of foods and 85-100% in determining fresh/stale levels. In addition, the freshness level of a sea bass fish on the third day of storage was given as 74% by TM. In this study, a support vector machine (SVM) algorithm is used to classify the images in which Convolutional neural networks (CNN) features obtained from images were employed. According to the confusion matrix data, when 100 of the food samples were used in the trial and 900 of them were used in the test, it was observed that the learned machine could predict the freshness conditions 100% correctly. The results of the study showed that determining the quality levels of foods using image processing can be done with high accuracy. The effective performance of the TM and CNN-based algorithm in determining food quality levels will inspire future studies in technologies that require rapid quality determination.

Keywords: machine learning, food quality determination, teachable machine, CNN

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Oral Presentation

Analgesic Action and Possible Pathways Involvement of *Lavanduala Stoaches* in Swiss Albino Mice

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Abstract:
In recent years, the efficacy of many medicinal plant extracts has been verified by *in vivo* or *in vitro* experiments. The ethanolic extract *Lavandula stoechas* (EELS) flower part of plant was prepared and used for the analgesic effect. Four experimental tests were performed in Swiss albino mice with 5 animals in each groups at different doses (50,100 and 200mg/kg); formalin test, tail flick test, acetic acid induced writhing test and hot plate test. For the possible pathway involvement, the opioidergic, noradrenergic, cholinergic, and K channel blockers in the analgesic actions were also performed. The percentage inhibition for abdominal writhing's for diclofenac sodium and plant extract doses is 62.9%, 29.03%, 33.05% and 46.76 % respectively. The formalin activity showed dose dependent manner, 94.77 ± 1.44 and 59.77 ± 0.93 sec, 84.31 ± 1.81 and 48.53 ± 1.11 and 78.79 ± 1.47 and 30.43 ± 1.45 sec for early and late phases respectively reduce the time period of licking. In tail immersion test, demonstrated a substantial and dose-dependent increase in the latency time and showed 5.70± 0.39, 7.52± 0.13 and 6.55± 0.23 sec, 7.77± 0.49, 8.93± 0.60 and 7.92± 0.51 sec for 30, 60 and 90 min and 13.77± 0.20, 15.21± 0.38 and 12.29± 0.34sec for 30, 60 and 90 min respectively. Hot plate test results showed 9.82 ± 0.24, 10.32 ± 0.29 and 10.96 ± 0.45sec, 11.67 ± 0.43, 12.08 ± 0.16 and 12.21 ± 0.55sec and 14.18 ± 0.13, 15.91 ± 0.26 and 16.91 ± 0.11sec the time period of paw liking and jumping response for 30, 60 and 90 min respectively. Glibenclamide (ATP-sensitive K+ channel blocker), Atropine (Cholinergic receptor antagonist) and Nalbin (opiod receptor antagonist) significantly reversed the analgesic effects of EELS. Instead, The analgesic action of EELS was unaffected by terazosin (a receptor antagonist for both receptors α 1 and 2. The results of study showed that the ethanolic extract from flowers of *L. stoaches* showed a significant result of central and peripheral antinociceptive and analgesic activity.

Keywords: writhing test, hotplate, opioid receptor, nalbin, mice

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Oral Presentation

Undifferentiated Embriyonal Rhabdomyosarcoma in a German Shepherd Dog: Macroscopic, Histopathologic and Immunohistochemical Features

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Abstract:

In this presentation, u*ndifferentiated* embriyonal rhabdomyosarcoma was described a German Shepherd dog. An 8-year-old, female, German Shepherd dog, with the complaint of formation of a round mass, approximately 12 cm in diameter, within the borders of the ventro-caudal region of the scapula, sternum and neck and closer to the left side, was admitted to the clinics of Faculty of Veterinary Medicine, Kyrgyz-Turkish Manas University, Bishkek, Kyrgyzstan. As a result of the evaluations, it was decided to remove the mass by surgery. The mass was 13x12x9 cm in size, weighed 900 grams and had an elastic consistency. There was a large necrosis area in the center of the mass. Around the necrosis, cells with spindle-oval and rounded morphology, hyperchromatic nuclei, unclear cytoplasmic borders, tightly arranged, atypia and mitosis were determined. Among these cells, long cells with nuclei lined up in a row and *wreath-like* multinucleated *giant cells* were noted. In the immunohistochemical examination, neoplastic cells were stained with vimentin, desmin, skeletal muscle myosin, sarcomeric actin, and SMA positively while Iba1, HLA-DR, Pancytokeratin, S100B, SOX10 and GFAP were stained negatively. Myogenin was intranuclear positive in approximately half of the cells. The case was diagnosed as RMS and was classified as undifferanted varyant of embriyonal type on the basis of histopathologic and immunohistochemical findings. In the post-operative period, it was learned that no new formations were found in the place where the mass was taken. Likewise, it was confirmed that there was no mass formation in any other part of the body. The presented case is original in terms of giant cells, morphological appearance and immunophenotyping. This case will contribute to the pathomorphological knowledge of canine striated muscle tumor to studies in the field of veterinary oncology.

Keywords: Embriyonal rhabdomyosarcoma; dog; histopathology; immunohistochemistry

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Oral Presentation

Determination of Virtual Risk Perception Status of Students Studying in Sports High School

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Abstract:
The aim of this research was to determine the virtual risk perception status of students studying in sports high schools. This descriptive and cross-sectional study was conducted in Karaman Sports High School with 158 students in March 2023. Before starting the data collection process, the "Informed Consent Form" was sent to the parents through the students in order to obtain the written consent of the parents. Data were collected with the descriptive information of the students and the Virtual World Risk Perception Scale (VWRPS). A suitable time frame was created with the school administrator for the application of the questionnaires and they were collected face to face in the classroom in 10-15 minutes. Percentage, mean, One Way Anova and Independent Simple t-Test analyzes were used to evaluate the data. In this study, the Cronbach Alpha value was found to be 0.78. The average age of the students in the study was 16.01±1.17, 62% were male, 34.2% were in the 9th grade, 34.8% of their mothers were primary school graduates, 38% of their fathers were high school graduates, and 73.4% of their mothers were housewives. and 72.2% of their fathers were self-employed. 64.6% of the students access the internet from home, 91.8% access the virtual world via mobile phones, 57% of them have restrictive attitudes towards the virtual world, 53.2% spend 2-3 hours a day in the virtual world, and 40.5% It was determined that he entered the virtual world with the aim of surfing social media. It was determined that there was a statistically significant difference between the students' grade level, the means by which they reached the virtual world, the family's attitude towards the virtual world and the total score of VWRPS ($p<0.05$). It was found that the students' VWRPS score average was 66.30±12.81 and they got a moderate score. As a result of the research, it was determined that the students had a medium level of risk perception in the virtual world and the class level, the means by which they reached the virtual world, the family's attitude towards the virtual world were effective variables on the virtual world risk perception.

Keywords: Student, risk perception, virtual world.

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Oral Presentation

Investigation of ABO Blood Group and Some Biochemistry Tests in Patients with Gestational Diabetes Mellitus

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Abstract:
Variable levels of glucose resistance observed during pregnancy are defined as gestational diabetes (GDM). It is a disease associated with a worldwide increase in the prevalence of type 2 diabetes mellitus (DM) and obesity, affecting approximately 5% of all pregnancies worldwide. Many studies have associated DM with A blood group. In this study, it was aimed to investigate the possible relationship between GDM and ABO blood group in pregnant women. In addition, it was also discussed how liver and kidney function parameters in pregnancy are related to ABO blood group. The study was a retrospective, single-center study. Patients who applied to the obstetrics outpatient clinic of a training and research hospital and were diagnosed with GDM were included in the study. The diagnosis of GDM was made according to the 75 g oral glucose tolerance test criteria. Glucose levels were determined on Beckman Coulter AU5800 (Brea, California, USA) using appropriate kits. 38% of pregnant women with GDM have A (+) blood group. The rate of pregnant women with O (+) blood group with GDM was 34%. The rate of pregnant women with B (+) blood group and O (-) blood group with GDM was 14%. Alanine Aminotransferase (ALT) levels of pregnant women with O (-) blood group were found to be higher than the ALT levels of pregnant women with other blood group ($p<0.05$). Aspartate Aminotransferase (AST) levels of pregnant women with O (-) blood group were higher than AST levels of pregnant women with other blood group ($p<0.05$). Creatinine levels of pregnant women with O (-) blood group were found to be lower than those of pregnant women with other blood group ($p<0.05$). There was no significant difference in Blood Urea Nitrogen (BUN) levels in pregnant women with different blood groups. The prevalence of GDM was found to be higher in pregnant women with blood group A (+) and 0 (+). In addition, ALT and AST levels were higher and creatinine levels were lower in pregnant women with GDM with blood group 0 (-).

Keywords: ABO Blood Group, Gestational Diabetes Mellitus, Alanine Aminotransferase, Aspartate Aminotransferase, Creatinine

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Oral Presentation

In Vitro anthelmintic Effects of *Calotropis procera* and *Acacia nilotica* Against Gastrointestinal Nematodes of Mouflon Sheep

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Abstract:

In captivity gastrointestinal nematodes are a major threat to small ruminants. Medicinal plants have bioactive compounds for control helminthes. The aim of this study was to screen the potential anthelmintic characteristic of aqueous, methanol and ethanol leaves extracts of two plants i.e. *Calotropis procera* and *Acacia nilotica* based on two assays in vitro. (1) Egg hatch inhibition (2) Larval development inhibition using gastrointestinal nematodes of Mouflon sheep. Ivermectin (1%) (Drug) was used as positive control while untreated eggs in water was used as negative control. Phytochemical analysis of extracts were also be carried out to confirm the presence of active ingredient in the plants extracts. For EHA and LDI all the extracts were effective For EHA, aqueous, methanol and ethanol extracts of *C. procera* and *A. nilotica* had LC_{50}=0.28, 0.23 and 0.17 mg/ml and 0.42, 0.36 and 0.27mg/ml respectively while aqueous, methanol and ethanol extracts of *C. procera* and *A. nilotica* had 0.38, 0.26 and 0.19 mg/ml and 0.32, 0.25 and 0.17mg/ml respectively. The most effective was ethanol extract for both egg hatching inhibition and larval development assay. These results show that the leaves of *C. procera* and *A. nilotica* possess ovicidal and larvicidal properties in vitro of nematodes of wild sheep.

Keywords: anthelmintic, medicinal plants, mouflon sheep, nematodes

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Oral Presentation

Impact of Different Extraction Method and Solvent on Extractive Value, Total phenolics, Flavonoid Content and Antioxidant Activity of Some Important Medicinal Plants

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Abstract:

Phytochemical screening has been accomplished in methanol and ethanol leaves extracts and determined the impact of different solvents (ethanol, methanol, aqueous ethanol, and aqueous methanol) and extraction methods (Maceration and soxehelet) on extractive value, total phenolics, flavonoid content and antioxidant activity of four important medicinal plants:: *Bacopa monnieri*, *Azadirachta indica*, *Achyranthes aspera* and *Ocimum sanctum*. Four different solvent extracts of dried leaves powders from plants were prepared by using soxhelet hot extraction method and maceration cold extraction method. Entire phenolics and flavonoid contents of plants were determined by UV spectroscopy. Antioxidant activity of different solvent extracts from plants has been carried out with DPPH (2, 2-diphenyl-1-picrylhydrazylhydrate) radical scavenging method, hydrogen peroxide (H_2O_2) scavenging method and ferric reducing power method. Significant levels of total phenolic contents (0.21-14.6 g Gallic Acid Equivalent /100g Dry Weight), total flavonoid (2.43-7.23 g Rutin Equivalent/100g Dry Weight), reducing power at 10 mg/mL extract concentration (1.27-2.21), DPPH Scavenging capacity (34.2-60.6%) and hydrogen peroxide (H_2O_2) scavenging method (62.0-79.6%) have been observed in different solvent extracts of leaves from four medicinal plants. Hydro alcoholic solvents frequently outperformed the corresponding pure alcohol solvents in terms of extract yields, phenolic contents, and plant material antioxidant activity. The 93oxhlet extraction method outperformed the cold maceration approach in terms of extract yields, total phenolic contents, and antioxidant activity. Based on the findings of this study, it can be concluded that aqueous solvent (80% methanol, 80% ethanol) extracts of plant materials, made using the 93oxhlet and maceration extraction procedures, had greater antioxidant activities and higher phenolic contents. The available results will undoubtedly be useful in determining the efficacy of the examined medicinal plant materials as a possible source of free radicals scavengers for use in nutraceutical and functional food applications. However, further investigation is required to pinpoint the specific elements that make up the antioxidative system and create uses for them in the food and pharmaceutical industries.

Keywords: Total phenolics, Flavonoid content, Antioxidant activity, Maceration, Soxhlet extraction

Oral Presentation

Comparison Of Accumulation Of Clenbuterol, Salbutamol And Terbutaline Residues In Biological Matrices From Broilers And Their Influence On Yield

Defrim Veseli

Abstract:
Beta-agonists are synthetic derivatives of catecholamines, which according to their chemical structure are divided into three groups: anilines, resorcinols and phenols. They bind to beta 2 receptors and lead to relaxation of smooth muscles, which is why they are used for the treatment of respiratory diseases in humans and animals, and in animals they can also be used as tocolytic agents and cardiotonics. Introduction and determination of appropriate methods for the determination of the beta agonists clenbuterol, salbutamol and terbutaline in biological matrices from broilers and what is their effect on the yield itself. From the literature data it can be concluded that high performance liquid chromatography (HPLC – high performance liquid chromatography), gas chromatography (GC-gas chromatography) and liquid chromatography tandem mass spectrometry (LC-MS/MS – liquid chromatography tandem mass spectrometry) are more often used for determination of beta agonists. From the initial analyses, we can state that there is a significant difference in the body weight of the broilers treated with beta agonists compared to the control group. It remains in the further part of the experiment to determine the accumulation of beta agonists in biological matrices and their influence on the yield. Comparison of our obtained results with scientific papers that were made in the region and beyond on the use of beta agonists in broilers and their impact on yield. This study of this type in Republic of North Macedonia will reflect the current state of the use of validated methods for the determination of beta agonists and will certainly contribute to the establishment of new validated methods for the determination of new beta agonists.

Key words: Beta agonists,clenbuterol,salbutamol,terbutaline,broilers,chromatography.

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Oral Presentation

A Case of Liposarcoma in a Guinea Pig

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Abstract:

The material of this case was a 3.5 years old male guinea pig weighing 1.2 kg, which was brought to clinics, Faculty of Veterinary Medicine, Kyrgyz-Turkish Manas University, Bishkek, Kyrgyzstan, with the complaint of swelling on the right side of the neck. Examination revealed a hard swelling on the right side of the neck. Radiological examination showed that the swelling had a compact structure and was associated with deep tissues. It was decided to remove it by operation. For this purpose, xylazine premedication and anaesthesia with ketamine were performed. The area was shaved and disinfected. Following skin incision, the mass was dissected bluntly. Since vascularization was high, the vessels supplying the tissue were ligated. The opened area was closed according to the rule. Antibiotics and painkillers were administered to the guinea pig postoperatively. Vitamins and minerals were added as support. Sutures were removed two weeks after the operation. No complication or recurrence was observed. The operated mass was sent to the pathology laboratory for histopathological examination. The mass was fixed in 10% neutral buffered formalin solution. Fixed tissues were processed routinely and blocked in paraffin. 4-5 micron thick sections were taken from the samples in paraffin blocks to normal slides with a microtome. Sections were stained with hematoxylin-eosin (H&E). All stained sections were examined under a light microscope. It was noted that the mass was 2x2x2.5 cm in size, surrounded by a thin fibrous capsule and had a soft consistency. The cut-sectional surface of the mass was lobulated, yellowish-white in colour and it was observed to float when placed in 10% formol for fixation. Histopathological examination revealed round to polygonal cells arranged in sheets, large and small vacuoles with sharp edges and separated by thin fibrous bands. Oval-round shaped nuclei were of different sizes. It was observed that most of these nuclei had more than one nucleolus. Clinical, macroscopic and microscopic findings were evaluated and the mass removed by operation was diagnosed as liposarcoma and it was found appropriate to present it in order to contribute to the field of veterinary medicine and oncology.

Keywords: liposarcoma, guinea pig, pathology, surgery, oncology.

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Oral Presentation

A Case of Acquired Hernia Diaphragmatica in a Cat

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Abstract:
Hernia diaphragmatica is a congenital and acquired phenomenon. The material of the study was a 2.5-year-old stray cat, weighing 3 kg, brought to the Turkiye-Kyrgyzstan Manas University Veterinary Faculty Clinic. The patient came to the clinic with the complaint of dogs being attacked, followed by difficulty in breathing, restlessness and loss of appetite. In the clinical examination, it was observed that the cat had abdominal breathing and had difficulty in breathing. In the radiological examination, liver and intense intestinal images were found in the pleural space. In addition, the disappearance of the boundaries of the diaphragm strengthened the diagnosis of hernia diaphragmatica. It was decided to perform an operation. An inhalation anesthesia device with an automatic ventilation mechanism was used for the operation. He was operated under isoflurane anesthesia. It was found that the integrity of the diaphragm was disrupted during the operation. It was determined that ¾ of the liver, a part of the spleen and intestines (including the colons) passed into the pleural space. Herniated organs were brought to their normal anatomical positions, the diaphragm was simply sutured continuously. Care was taken to ensure that the lungs were in the inspiratory state before the last suture was placed. Then, peritoneum, muscles and skin were closed in accordance with the rule. The animal was given oxygen for a certain period of time and the animal was expected to breathe spontaneously. When the animal switched to spontaneous respiration, the animal was allowed to take oxygen for a while. When the swallowing reflex started, extubating was performed. No recurrence was found in the radiological examinations 10 days and 1 month after the operation. As a conclusion, it was found interesting that it is rare for acquired hernia diaphragmatica cases to occur as a result of fighting and the colons herniated so intensely. In all cases, it is thought that the chance of success will be higher in case of early diagnosis and intervention.

Keywords: hernia diaphragmatica, cat, acquired

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Oral Presentation

Chips Made from Apple Pomace

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Abstract:
In this study, as a new product, apple pomace, which is a by-product resulting from the processing of fruit juice and vinegar, was used to make chips with high nutritional value. After preparing a mixture by adding maltodextrin to give the apple pomace a crisper structure and shine and cinnamon for flavor, it was shaped and placed on wax paper, and dried in the oven at 150ºC for 10-15 minutes. Maltodextrin ratios were changed at 15%, 30% and 45%, and other parameters were kept constant. The effects of maltodextrin on the product were determined by analyzing the water activity, color (L*, a*, b*), total phenolic content (TPC), antioxidant activity (DPPH), texture and dry matter in the product. When the quality parameters of chips were examined, it was determined that it was a rich source in terms of nutritive properties. It has been observed that the addition of maltodextrin improves the color of the product and increases the hardness value. However, it was determined that maltodextrin did not have any positive effect on phenolic content. In addition, it has been determined that a delicious and functional product can be obtained due to cinnamon's taste, high antioxidant activity and phenolic content. Compared with the other mixtures, it was determined that the mixture containing 45% (w/w) maltodextrin has the best color, antioxidant activity, total phenolic content, and moisture values in the products. As a result, it can be said that apple pomace chips, as a new product, is a valuable product because it is suitable for mouth taste, appeals to all ages, and is crispy and delicious.

Keywords: Antioxidant activity, apple pomace, chips, cinnamon, maltodextrin.

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Oral Presentation

Valorization of *Camelus dromedarius* natural products as a novel source of antibacterial properties: New Strategies to Fight Antibiotic Resistance

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Abstract:

Nowadays, the prevalence of antimicrobial resistance is responsible for more than 7 million deaths per year worldwide and it will reach around 10 million deaths in 2050. In fact, to cope with the austerity of this public health problem namely the emergence of multidrug resistant bacteria as well as the pitfalls caused by uncontrolled and indiscriminate antibiotic usage, it is necessary to seek alternative agents or therapeutic approaches in order to overcome multidrug resistance problems, particularly by using natural products such as milk, urine and hump lipids of camels. By using the well diffusion mean, eight multi-drug resistant bacteria isolated from clinical samples were tested with milk, urine and hump lipids collected from both male and female camels during four seasons. All strains were initially identified phenotypically by culturing on specific media and also by using MALDI-TOF Mass-Spectrometry as well as BD Phoenix. Our study recorded that the robust effect was shown by female camel's urine more than male one. In light of these findings, we proved the presence of largest inhibition zones on Mueller Hinton agar media by measuring the following diameters: 32 mm for NDM-1 producing *Enterobacter cloacae*, 30 mm for *Klebsiella oxytoca* strain producing NDM-1, 29 mm for *Acinetobacter baumannii* and *Citrobacter freundii*, 25 mm for *Pseudomonas aeruginosa* and *Escherichia coli* and 22 mm for *Klebsiella pneumonia*. In addition, the results of the *in vitro* antibacterial action of milk as well as those of camel hump lipids revealed the absence of inhibition's zones against all tested bacteria. Thus, through this investigation, we concluded that urine, mainly from female camel has a potent antibacterial activity *in vitro* against numerous multidrug resistant bacteria isolated from clinical samples with an absence of inhibition in the use of camel's milk and hump lipids.

Keywords: Milk, hump lipids, Camel urine, antibacterial activity, Multidrug resistant bacteria.

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Oral Presentation

Preservation of Goat Lungs by Comparative Plastination Techniques: A Morphometric Study

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Abstract:

Present study was conducted on lungs of apparently healthy twelve goats collected from the abattoir. Immediately after collection, the lungs were fixed in 10% Neutral Buffered formalin for one month. After gross biometrical analysis of formalin fixed lungs, the specimens were plastinated by using two different methods to compare the shrinkage of specimens. The standard protocol of plastination i.e. fixation, dehydration, impregnation and curing was followed. In method I, after proper fixation, the specimens were dehydrated in three changes of acetone (two weeks each), then impregnated in two changes of glycerol for 15 days each and cured in muslin cloth containing corn flour. In method II, modified plastination solution containing thermocol, petroleum jelly and chloroform was used as impregnation solution. The plastinates prepared by method I were soft to touch, odorless, the elasticity and colour of lung tissue was near normal, whereas the lungs plastinated by method II were hard to touch and their color turned to whitish grey. The biometric data showed that the shrinkage of weight of lungs was 47.99 % in method I and 85.46 % in method II. The shrinkage in length of apex to base of right lung was 14.36 % and that of left lung was 16.18 % by method I. In method II, the length from apex to base was reduced to be 35.84% and 34.83 in right and left lungs, respectively. It was concluded from present study that the plastinated glycerin specimens showed lesser deviations from their near natural state as compared to the plastinated specimens by modified plastination technique. The shrinkage was more evident in plastinates prepared modified plastination solution (Method II) as compared to glycerol method (Method I).

Keywords: goat, lungs, plastination
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Oral Presentation

A Case of Seminoma in an 8-Year-Old Poodle Dog

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Abstract:

In this report, a case of seminoma in an 8-year-old Poodle dog was described. The dog was brought to Kyrgyzstan-Turkey Manas University Faculty of Veterinary Medicine clinic with the complaint of swelling in the right inguinal region. Although the owner was asked to bring the dog back after one month for control and detailed examination, the dog was brought for control after 8 months. As a result of the examination, it was realised that the mass in the inguinal region was enlarged and it was decided to remove it by operation. The swelling area was shaved and disinfected. Xylazine hydrochloride was used for premedication and then ketamine hydrochloride was used as anaesthetic. An oval incision was made in the skin. The mass and the other testis were removed by blunt dissection. The removed mass and the other testicle were sent to the pathology department for histopathological analyses. The mass was 4.5x4x2 cm in size, soft, yellowish-gray in colour, smooth and lobulated on the outer surface. On the cut-sectional surface, 2 nodular structures, one with a diameter of 2.5 cm and the other with a diameter of 2 cm, were observed and it was determined that these structures were protruding from the cut-sectional surface. The removed left testicle was found to be 2.5x2x1.5 cm in size and normal in structure. The mass was fixed in 10% neutral buffered formalin solution. Fixed tissues were processed routinely and blocked in paraffin. 4-5 micron thick sections were taken from the samples in paraffin blocks to normal slides with a microtome. Sections were stained with hematoxylin-eosin (H&E). All stained sections were examined under a light microscope. Histopathological examination showed tumour cells with light pink coloured cytoplasm and oval-round nuclei in most of the sections. Numerous mitotic figures were observed between these cells (starry sky appearance). The cytoplasm of some cells was vacuolated. In some sections, focal lymphocyte infiltration and small haemorrhage foci were observed. In some vessel lumens, emboli composed of tumour cells were observed. It was noted that the epididymis duct lumens were empty. As a result, it was concluded that presenting a rare case of seminoma observed in an 8-year-old Poodle dog would be beneficial for veterinarians and students.

Keywords: seminoma, dog, pathology, surgery, oncology

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Oral Presentation

Attitudes and Behaviours of Intensive Care Nurses Towards End of Life Care and Death

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Abstract:

This study was designed to determine the attitudes and behaviours of intensive care nurses towards end-of-life care and death. The population of the descriptive, correlational study was nurses (n=350) working in the intensive care unit of a university hospital, and the sample group consisted of nurses (n=306) who voluntarily agreed to participate in the study between June and December 2022. Data were collected using the Descriptive Characteristics Form, the Scale of Attitudes and Behaviours of Intensive Care Nurses Towards End-of-Life Care, and the Death Attitude Profile-Revised (DAP-R). In the statistical analysis of the data, in addition to descriptive statistics, the independent samples test and the one-way variance test were used for comparisons, and the Pearson correlation coefficient was used to determine the relationship. The attitudes and behaviours of ICU nurses towards end-of-life care and their attitudes towards death were found to be at an average level. It was found that nurses with postgraduate education had more positive attitudes towards death than those with high school, associate and undergraduate education ($p<0.001$), and nurses working in the 3rd level cardiovascular surgery unit had more positive attitudes towards death than nurses working in all intensive care units ($p<0.05$). A significant relationship was found between end-of-life care behaviours and attitudes and behaviours towards death ($p<0.05$). It was determined that nurses' attitudes and behaviours towards end-of-life care and death were at an average level. In this context, it is recommended that supportive interventions and in-service training programmes related to the subject should be organised to improve the positive attitudes and behaviours of intensive care nurses towards end-of-life care. At the same time, it is thought that the results of the study will guide managerial practices, especially in terms of education and personnel planning, for the provision of quality health care services.

Keywords: Intensive Care, Nursing, End of life care, Death

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Oral Presentation

Microbiological Analysis of Food Contact Surfaces at A Food Production Facility[#]

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Abstract:
A microbial survey of a food production facility was conducted to assess the microbiological load of two food preparation equipment surfaces (cutting boards and knives) and also to determine the effectiveness of cleaning and sanitization procedures within the facility. Total aerobic bacteria, coagulase-positive/negative staphylococci, coliform bacteria and *Escherichia coli* counts from a 10 cm^2 area on all surfaces were detected by standard microbiological swabbing methods. Each surface sample was taken six times per month for 6 months. Mean counts of total aerobic bacteria over the survey period were 4.89 log CFU/cm^{-2} on cutting boards and 5.72 log CFU/ cm^{-2} on knives. Coliforms were determined in 66.6% of cutting boards and 88.9% of knife samples with counts ranging from 2 to 5.48 log CFU/cm^{-2} and 1 to 4.48 log CFU/cm^{-2} respectively. On the other hand, none of the swab samples from food preparation equipment surfaces harbored *E. coli*. Coagulase-positive staphylococci were determined in only one cutting board swab sample with 2.78 log CFU/cm^{-2}. Coagulase-negative staphylococci were isolated from the surfaces of 8 cutting boards (mean count of 1.53 log CFU/cm^{-2}) and 12 knives (mean count of 2.45 log CFU/cm^{-2}). US Public Health Service recommends a total bacteria count of no more than 2 log CFU 50 cm^{-2} on food contact surfaces. Most of the swab analysis results in our study were higher than recommended. Insufficient cleaning and sanitation procedures can lead to foodborne illnesses and pose a threat to public health. During and at the end of this research, procedures in the food preparation facility were observed and risk factors leading to the contamination were defined and the business was informed.

Keywords: food, catering, surface, hygiene

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Oral Presentation

Evaluation of The Phenolic Content of Multifloral Honey From Şanlıurfa, Türkiye

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Abstract:

Honey is a sweet and viscous liquid produced by bees by collecting nectar from flowers and processing them with the enzymes they secrete. Honey, which has been used for a wide variety of purposes for centuries, has started to replace synthetic food components with the increase in consumer awareness in recent years. Honey contains components such as various sugars, amino acids, minerals, vitamins and phenolic compounds that are beneficial to health. In addition to many useful components in its composition, it attracts attention with the diversity of its phenolic content. The purpose of this study was to ascertain the amounts and composition of phenolic compounds in honey samples collected from Şanlıurfa. With an liquid chromatography-tandem mass spectrometry (LC-MS/MS) instrument, 25 phenolic compounds were analyzed in the honey samples for this reason. Myricetin, protocatechuic acid, 2-hydroxy-1,4-naphthoquinone, luteolin, kaempferol, thymoquinone, and alizarin could not be found in the honey samples among these phenolic compounds. Hydroxycinamic acid (1552.1±1556.3 ng g^{-1}) and vanillic acid (522.1±238.3 ng g^{-1}) had the greatest concentrations of phenolic compounds. Acetohydroxamic acid (3.59±0.101 ng g^{-1}) was the lowest phenolic substances of the honey samples. In conclusion, this study revealed the phenolic compounds of multifloral honey produced in Şanlıurfa, Turkey, which has a rich plant flora and honey diversity.

Keywords: Honey, phenolic compounds, LC-MS/MS, Şanlıurfa

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Oral Presentation

Effect of Boric acid on Leptin Levels in the Prescapular Adipose tissue of Rats

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Abstract:

The aim of this study was to determine the changes in the prescapular adipose tissue levels of leptin, depending on the boric acid supplementation administered orally at 40 mg/kg dose in rats. Boric acid is required for a variety of biological and physiological processes, including endocrine, cardiovascular, growth functions, and immune response. By stimulating the satiety center in the brain, the peptide hormone leptin, which is secreted by adipocytes and plays an important role in regulating the amount of energy that is taken in and expended, can prevent obesity. A total of 16 male Wistar Albino rats were randomly divided into two groups, each group containing eight animals. The first group is the control group, and the experiment group is Boric acid group. At the end of the 28-day experiment period, the rats were sacrificed, and prescapular adipose tissues were collected. Leptin levels were determined from prescapular adipose tissues. The leptin levels in the adipose tissues were determined using commercial rat ELISA kit according to the manufacturer's instruction. It was determined that leptin levels in prescapular adipose tissues decreased significantly in rats administered oral boric acid. As a result of this, taking oral boric acid supplements is an efficient method for lowering the amount of leptin hormone that is present in the body.

Keywords: Boric acid, Leptin, Prescapular Adipose Tissue, Rat

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Oral Presentation

Histological Staining Technics for Identifying Various Structures for Histological Assessment of Bone and Cartilage Healing

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Abstract:
Bone and cartilage regeneration are challenging topics which the scientists are constantly looking for new approaches to eliminate current limitations of the traditional therapeutic methods which are being used. Cellular therapy and use of biomaterials for that purpose is providing encouraging results, especially in cases like osteoarthritis and bone healing. In such studies, the histological assessment of the healing of corresponding tissues are vital to determine to see if the developed method is indeed resulted with positive outcomes or not. Each tissue has some different distinctive structures that must be investigated during the healing process. There are several histological staining technics being used for the evaluation of the healing of bone and cartilage tissues by identifying the structures of interest. Among them, hematoxylin eosin staining comes forward as the most applied technic. However, it is not suitable to identify each and every important histological structure, and some specific staining technics are necessary to identify such structures like new bone formation areas, mineralized bone areas, glycosaminoglycan aggregates, collagen fiber formation, etc; regarding the aim of the research. In this study, bone and articular cartilage samples were taken and stained with Alcian blue staining, Picro-sirius red staining, Masson-Goldner's trichrome staining, Movat's pentachrome staining, von Kossa staining technics to identify different structures in bone and cartilage. The outcomes might help researchers to determine the appropriate staining technics to be used in their studies to fully demonstrate their findings.

Keywords: histological assessment, histological staining, bone healing, cartilage healing.

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Oral Presentation

Liver Effects of *Allium Schoenoprasum* L. (Sirmo) Against Acrylamide Toxicity[#]

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Abstract:
This study was planned to investigate the protective effect of *Allium schoenoprasum* L. (Sirmo) against acrylamide toxicity. Thirty-two Wistar-Albino rats were used as the study animal material. Rats were divided into 4 groups. No application was made to the first group. The second group received 25 mg / kg Acrylamide gastric gavage daily. The third group received 200 mg / kg *Allium schoenoprasum* L. ethanol extract by gastric gavage. Fourth group received Acrylamide at 25 mg / kg and *Allium schoenoprasum* L. ethanol extract at 200 mg / kg by gastric gavage. The study period was planned as 15 days. On the 16th day, all rats were sacrificed by high blood collection. Liver tissues from rats were homogenized using the appropriate procedure. TAS, TOS and NO analyzes were performed on homogenized liver tissues with commercial kits. In the analyzes performed, a decrease in TAS levels and an increase in TOS levels were observed in the acrylamide group. An increase in TAS levels and a decrease in TOS levels were observed in the groups given Allium schoenoprasum L. (Sirmo). Considering the NO levels, effective decreases were found in the NO levels in the groups given Allium schoenoprasum L. (Sirmo). Studies with Allium schoenoprasum L. (Sirmo) plant have shown that this plant has antioxidant effects. In our study, it was observed that Allium schoenoprasum L. (Sirmo) plant, which is given as a protector in liver tissue against the damages caused by acrylamide in the organism, has positive effects.
Key words: Acrylamide, *Allium schoenoprasum L*., NO, TAS, TOS.

Keywords: Acrylamide, *Allium schoenoprasum L*., NO, TAS, TOS.

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Oral Presentation

Evaluation of Malnutrition Status with Different Screening Tools and Association with Sarcopenia and Frailty in Elderly People Living in the Community[#]

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Abstract:

In this study, it was aimed to evaluate the nutritional status of the elderly living in the community with different screening tools and to associate it with sarcopenia and frailty. This descriptive and cross-sectional study was conducted in Ankara with 629 elderly individuals aged 65 and over. Questionnaires were applied to individuals by face-to-face interview technique. General information and anthropometric measurements of elderly individuals were taken. Nutritional status of individuals was evaluated with Seniors in the community: risk evaluation for eating and nutrition, Version II (SCREEN II), Mini Nutritional Assessment Short-Form (MNA-SF) and Malnutrition Universal Screening Tool (MUST). The risk of sarcopenia was evaluated with the SARC-F scale and the frailty was evaluated with the FRAIL scale. The Statistical Package for the Social Sciences (version 22.0) software was used for all analyses. A p-value of less than 0.05 was considered to be statistically significant. 37.8% of the participants were male and 62.2% were female. 27.4% of the individuals were normal weight, 42.9% were overweight and 29% were obese. 85.1% of the participants had a chronic disease diagnosed by a doctor. 30.4% of the participants were at risk of sarcopenia. 42.4% of the participants were found to be close to frailty and 27.3% were found to be frail. According to the MNA-SF score, 57.1% of individuals had a risk of malnutrition and 17.3% were malnourished. According to SCREEN II score, 78.9% of individuals had a risk of malnutrition and according to MUST score, 10.2% of individuals had a higher risk of malnutrition. A statistically significant positive correlation was found between the scores of the screening tools and the SARC-F scale score and FRAIL scale score ($p<0.05$). Determination of nutritional status of elderly individuals is important in reducing the risk of sarcopenia and frailty.

Keywords: malnutrition, sarcopenia, frailty, elderly people.

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Oral Presentation

Anaplasmosis Treatment in a British Short Hair Cat and Supportive Therapy with Traditional Chinese Herbal Medicine *Fufang E'Jiao Jiang*

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Abstract:

Anaplasmosis, caused by obligate gram-negative intracellular parasitic bacteria *Anaplasma* sp., is a serious disease affecting both domestic and wild animals. In summary, Anaplasmosis is a serious disease that requires prompt diagnosis and aggressive treatment. The presented case highlights the importance of a comprehensive treatment plan in managing the disease and the potential benefit of incorporating traditional Chinese herbal medicine into the treatment regimen. In this case, a female British Short Hair cat, weighing 2.29 kg and aged one year and eight months, presented with symptoms including lethargy, loss of appetite, and sneezing. Physical examination of the cat revealed several abnormalities including an increase in body temperature, capillary refill time of more than two seconds, slow skin turgor, pale eye mucosa and gums, and rales in breathing. Routine hematology examination results indicated the presence of hypochromic macrocytic anemia and thrombocytopenia, while blood biochemistry results revealed an increase in globulin and aspartate aminotransferase levels and a decrease in the albumin/globulin ratio. The examination of blood smear preparations showed intracytoplasmic inclusions (morula) of the blood parasite *Anaplasma* sp. The cat received a comprehensive treatment regimen including an infusion of 0.9% sodium chloride, doxycycline antibiotics, acetylcysteine mucolytic drugs, ornipural® hepatoprotector vitamin, and traditional Chinese herbal medicine *Fufang E'Jiao Jiang* (FEJ). Despite seven days of hospitalization, the cat's condition did not improve, and the hematocrit examination results continued to decline. As a result, a blood transfusion was performed, and the FEJ treatment was continued. After the transfusion, the cat's condition improved significantly, and on the 20th day, the cat was discharged from the hospital. Based on the results of the hematological examination which improved after blood transfusions, the supportive treatment with FEJ were quite promising.

Keywords: anaplasmosis, blood transfusion, cat, traditional chinese herbal medicine, *fufang e'jiao jiang*

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Oral Presentation

Epidemiological Investigation of Betanodavirus Prevalence in Sea Bass Hatcheries For All Production Stages in Türkiye#

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Abstract:
Viral Nervous Necrosis caused by Betanodaviruses is an important viral disease in sea bass farming and endemic in the Mediterranean basin. Since there are many hatcheries and sea bass culture is commonplace in Türkiye, monitoring studies are crucial for the control and prevention of the betanodavirus infections. The aim of this study was to investigation betanodavirus in sea bass hatcheries in Türkiye. All production stages of all sea bass hatcheries actively operating in Türkiye were sampled. Samples were taken from 16 hatcheries and 135 study groups of a total of 2460 samples with each group consisting of 10-30 fish were formed. Betanodavirus was investigated by Real Time RT-PCR. Partial genome analysis and phylogenetic studies were performed according to the RNA1 and RNA2 segment of the virus. Viral RNA was detected in fingerlings in one hatchery and prevalence in Turkish hatcheries was calculated to be 6.25% (1/16). Partial genome analysis of both RNA1 and RNA2 segments of the virus revealed that it was the Redspotted grouper nervous necrosis virus genotype which is endemic in the Mediterranean basin. In the epidemiological follow-up of infected and related hatcheries, virus was not detected again. Betanodavirus was only detected in fingerling-size fish. The absence of mortality in the hatchery and the farm where the virus was detected, the healthy appearance of the sea bass and the low viral load indicate that the infection might be subclinical. Also, the fact that the virus was not found in other age groups where biosecurity measures were implemented, shows that is not active infection. As a result of this study, betanodavirus capacity of all production stages of all hatcheries in Türkiye was revealed. It can be concluded that there are no circulating betanodavirus in hatcheries and the detected virus could be of sea-water origin.

Keywords: betanodavirus, hatchery, prevalance, sea bass, Türkiye

This study was supported and officially permissied by Ministry of Agriculture and Forestry of The Republic of Türkiye. This study is part of the doctoral dissertation of the Murat KAPLAN.

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Oral Presentation

Association of J Wave with Prognosis in Dogs with Congestive Heart Failure

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Abstract:

Congestive heart disease is a common and inevitable condition in dogs and humans. Congestive heart failure occurs in two different forms acquired and congenital. ACVIM (American College of Internal Medicine) classifies heart failure into four stages. Electrocardiography; ıt is a valuable tool used as a prognostic method that reveals the electrical conduction of the heart, gives an early warning in terms of diagnosis, and is used as a prognostic method in rhythm disorders caused by intracardiac and extracardiac factors. It is used in conjunction with other cardiac examination methods. Waves in electrocardiography; It is a reflection of the action potentials of the atria and ventricles. In electrocardiography, the j wave (Osborn wave) is a morphological finding that protrudes between the R and ST waves. It was described by Osborn in 1953. The mechanism of J wave formation is not fully understood. It is assumed that during early repolarization, it exhibits a transient electrical variation between the ventricular endocardium and the epicardium. Changes in the J wave can be physiological and occur in conditions such as cardiac ischemia, electrolyte imbalance, and hypothermia. **Objective:** To examine the character of the J wave on the 0th day and 30th day of the treatment in dogs with congestive heart failure classified according to ACVIM and to reveal its relationship with the prognosis. **Methods:** 10 dogs who come to our clinic with cough, fatigue, and exercise intolerance will undergo cardiological examination and, after being classified according to ACVIM, on the 0th day and 30th day, which is the beginning of the treatment, the II. J wave characteristics will be determined at the 25 mm/sec derivation, 10mm/mV setting. **Results:** On the 30th day, it was determined that the J wave interval and amplitude were decreased, which was positively correlated with the treatment. According to the study findings, in the t-test statistical evaluation, in the 0. Day and 30. Day amplitude evaluation, $p<0.01$ was significant; interval measurements found it to be as significant as $p<0.001$. **Conclusion:** J wave is helpful prognostically in dogs with congestive heart failure, but studies with larger samples are needed.

Keywords: Electrocardiography, Congestive Failure, Dog, Osborn wave

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Oral Presentation

Determination of Antifungal and Antibacterial Activity of Cream Formulation Containing Red Pitahaya Methanol Extract

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Abstract:

Pitahaya is known as a fruit with rich bioactive compounds that benefit in many areas. Knowing some of the harmful side effects of chemicals in synthetic products has increased the demand for herbal-based products today. The skin is the largest organ of our body and is constantly exposed to chemical and physical threats. It is well known that probiotics are beneficial for skin. Topical application of probiotics can help maintain healthy skin and skin biome, as well as protect it from various infections. In our study, it was aimed to develop cream formulations containing extracts and probiotics, which are natural additives, for topical applications, and then to determine the antimicrobial activity of this cream formulation. For this purpose, red pitahaya flesh and peel obtained from Turkey were extracted using methanol solvent. Then, cream formulations containing red pitaya methanol extracts and breast milk originated probiotic candidate *Limosilactobacillus fermentum* MA-7 strain have been developed. The antifungal and antibacterial activities of the developed cream formulation against *Candida albicans* ATCC 10231 and *Listeria monocytogenes* ATCC 7644 test microorganisms were investigated in vitro using well diffusion assay. The results showed that the inhibition zone diameter of the cream formulation containing red pitahaya flesh extract and *L. fermentum* MA-7 strain against *C. albicans* ATCC 10231 was determined as 6.80 mm. The higher antimicrobial activity was determined in the cream formulation containing red pitahaya peel extract and *L. fermentum* MA-7 against *C. albicans* ATCC 10231 with a 9.40 mm zone of inhibition. In addition, the inhibition zone diameters of the cream formulations containing pitahaya flesh and peel extracts and the *L. fermentum* MA-7 against *L. monocytogenes* ATCC 7644 were found to be 5.81 mm and 2.28 mm, respectively. Furthermore, the cream group (control) showed no inhibitory activity against both test microorganisms. These results indicate that the developed creams with natural ingredients may be used as a preventive and therapeutic agent against skin contaminations. The data from the study have the potential to lead to further studies in the pharmaceutical and cosmetic industries.

Keywords: Pitahaya, probiotic, skin, cream, antimicrobial.

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Oral Presentation

Fabrication, Characterization and Toxicity Evaluation of Chemically Cross-linked Polymeric Material: A Proof of Concept

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Abstract:
The current study required to determine the properties of a basil seed mucilage-based polymeric network as well as its toxicity. By using potassium persulfate (KPS) as an initiator, microwave-assisted synthesis a green approach was used to produce a graft copolymer of a polymeric blend of Basil seed mucilage (BSM) and acrylamide (AM). Variable amounts of AM and KPS were used to optimize the best grade based on the highest percentage of grafting efficiency, and the results were investigated using intrinsic viscosity measurement, Fourier Transformation infrared spectroscopy (FTIR), DSC, H-NMR spectra, and X-ray diffraction. The degree of swelling is determined by the concentration of mucilage, monomer, and the density of crosslinking in the polymeric network. The obtained basil seed mucilage based polymeric network successfully developed and will be utilized for development of novel drug delivery systems. The microwave irradiation process with potassium persulfate as the redox initiator is a visible, green, and cost-effective method. The BSM-4 batch showed 464% grafting and 107.23 % grafting efficiency. FTIR, DSC, H-NMR and XRD analysis showed result about completion of grafting process and changes in functional groups. The BSM-4 batch proved that basil seed mucilage polymeric network is totally safe for oral drug delivery of BCS class II and IV drugs. The findings of the toxicity study indicate that the developed polymeric network is safe and non-toxic and it may eventually prove to be a superior option for many established and cutting-edge drug delivery methods when it comes to the administration of drug orally. As a conclusion, the Basil seed mucilage-based polymeric network will be encouraging for long-term delivery of any BCS Class II or IV drug, and acute toxicity testing proved that the mucilage-based network had been secure for oral drug delivery.

Keywords: natural mucilage, green synthesis, polymeric network, basil seed mucilage, toxicity, grating copolymer.

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Oral Presentation

Assessment of Groundwater Quality in Samastipur region, Bihar, India.

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Abstract:
The present study was carried out to assess quality of groundwater in 4 blocks of Samastipur district, Bihar for its suitability in drinking, domestic and irrigation purposes. The study area comprises of majorly mid-gangetic alluvial plains which is arsenic affected, it is predominantly agricultural based where groundwater is mainly used for domestic and irrigation purposes. Total 42(major) and 46 for heavy metal, groundwater samples were collected from dug wells and handpumps. Physico-chemical analysis of water samples were performed and the dominant water type was found to be Mg-HCO_3 type. Among heavy metals Arsenic and Iron were tested in water samples. The analysis of samples was done based upon APHA standard methods. The outcomes were compared with the Bureau of Indian Standards (BIS) and World Health Organisation (WHO) standards. Quality of groundwater for drinking and domestic use was assessed by calculating Weighted Arithmetic Water Quality Index (WQI) method and the results showed that 69.04% water lied in the category of "Excellent water"21.42% water lied in the category of "Good water" 7.14% in the category of "Poor water" and 2.3% in the category of "Very Poor water". Health survey of 169 respondents was done randomly in the study area and several Arsenicosis symptoms were observed. Hyperkeratosis was observed in 3.5% of the population of all age groups, also raindrop pigmentation and melanosis was observed in some adults. Gastric disorders was found in 38% of the population and they were found to be less aware of arsenic in their drinking water sources. However people were not satisfied with their drinking water source. Government aided "Nal-Jal" water supply system with filters was not supplied to most of the households. Water samples for irrigation water quality (EC, %Na, SAR and RSC) were also calculated with the help of MS-EXCEL, where EC lied in the range of 161.9 to 2230 mg/l, %Na 3.81 to 60.47, SAR in the range of 0.076 to 4.186, and RSC from 0 to 3.49. All these parameters indicated water to be suitable for irrigation except at 1 location. Proper groundwater management strategies are required to protect the resource.

Keywords: Groundwater, Aquifer, Water type, Water Quality Index, Samastipur.

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Oral Presentation

Investigation of Antimicrobial Activity of Fruit Extracts from *Citrus medica* L. var. *sarcodactylis* Against Food-borne Pathogens

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Abstract:

Microbial contamination is one of the most important problems in the food industry, which leads to deterioration or contamination of food and adversely affects human health. *Staphylococcus aureus* is a major food-borne pathogen and a leading cause of foodborne illness worldwide. *Listeria monocytogenes*, another foodborne pathogenic bacterium, is thought to be responsible for serious diseases with high hospitalization and mortality rates. For this reason, protective products are needed to prevent the growth of harmful food-borne bacteria in food products. Plant extracts can be an alternative to chemical preservatives against different types of foodborne pathogens. *Citrus medica* L. var. *sarcodactylis* is a fruit belonging to the Rutaceae family, used for ornamental purposes and has medicinal importance. The aim of the study is to determine the antibacterial activity of *C. medica* L. var. *sarcodactylis* fruits against *S. aureus* ATCC 25923 and *L. monocytogenes* ATCC 7644 that cause important problems in the food industry. The antibacterial activity of water and ethanol extracts obtained from *C. medica* L. var. *sarcodactylis* fruits was obtained using disc diffusion method. The micro-dilution method was used to determine minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of the extracts. The inhibition zone diameter of fruit water and ethanol extracts against *S. aureus* ATCC 25923 was obtained as 6.41 mm and 8.04 mm. The fruit water and ethanol extracts against *L. monocytogenes* ATCC 7644 showed an inhibition zone diameter of 6.07 mm and 7.13 mm. The results indicated that the fruit ethanol extract showed higher antimicrobial activity compared to water extract against both test microorganisms. MIC values of fruit water and ethanol extracts against test microorganisms are between 10-20 µg/µl. The lowest MBC value was determined as 10 µg/µl against *S. aureus* ATCC 25923 in fruit water extract. As a result of the study, *C. medica* L. var. *sarcodactylis* fruit water and ethanol extracts may have the potential to be used as natural antimicrobial additives as alternatives to synthetic preservatives against the food-borne pathogens.

Keywords: Antibacterial, Fruit, Extract, *Staphylococcus aureus*, *Listeria monocytogenes*

* The study is produced from master thesis of the first author

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Oral Presentation

Potential Antimicrobial Activity of Aronia Water Extract Against *Candida albicans* ATCC 10231 and *Aeromonas hydrophila* ATCC 19570 Strains

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Abstract:

In recent years, the increase in bacterial resistance to traditional antibiotics due to uncontrolled and unconscious consumption poses a great threat to human health. Drugs used against *Candida*-induced infections are limited and new alternative antimicrobial agents need to be developed. Infections are among the main problems of fish farms and cause serious financial losses to the producer. Plant extracts have the potential to inhibit infections by pathogens. Aronia (*Aronia melanocarpa*) is a fruit that has been used in the treatment of many diseases caused by pathogenic microorganisms in alternative medicine and has gained popularity in recent years. In this study, it was aimed to determine the antimicrobial activity of Aronia water juice extract against *Candida albicans* ATCC 10231 (clinical origin pathogen) and *Aeromonas hydrophila* ATCC 19570 (seafood-borne pathogen). The antimicrobial activity was obtained using disc diffusion and micro-dilution experiments. The disc diffusion assay results showed that the inhibition zone diameter of Aronia water extract was 7.42 mm against *C. albicans* ATCC 10231 and 9.45 mm against *A. hydrophila* ATCC 19570. MIC values of Aronia water extract were obtained as 12.5 mg/mL on test microorganisms. The extract showed MFC value as 50 mg/mL against *C. albicans* ATCC 10231. MBC value of the extract was determined as 12.5 mg/mL against *Aeromonas hydrophila* ATCC 19570. The results indicated that the fruit water extract of Aronia with good antifungal and antibacterial activities has the potential to be used as a natural alternative to synthetic drugs in the preventing or treatment of infections in pharmaceutical and feed industries.

Keywords: *Aronia melanocarpa*, Natural additive, Antibacterial, Antifungal, Infections

* The study is produced from master thesis of the first author

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Oral Presentation

Comparison of *Dermestes maculatus* and Maceration Methods in Preparation of Osteological Materials

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Abstract:

This study it is aimed to obtain osteological material from sheep heads by using *Dermestes maculatus* colony and chemical maceration methods and to compare the advantages and disadvantages of the two different methods used. A total of four sheep heads obtained from the slaughterhouse were used as material. The heads, whose skin, brain, and tongue were separated by dissection, were divided into two groups. Two materials were placed for cleaning in an insect colony belonging to the *D.maculatus* species in the dermestidarium. Materials in the other group were subjected to a controlled chemical maceration process with 10% potassium hydroxide (KOH) at a constant temperature of 56 °C for three days. The skulls were kept in a 5% hydrogen peroxide solution for three days for bleaching in both methods. All photographs, from the cleaning of the heads to the conversion to osteological material, were taken with a digital camera (GoPro). The study observed that the heads placed in the *D.maculatus* colony were completely cleaned after four days. It was determined that there was no deformation in all skull bones. It took three days for the soft tissues to be cleared from the heads in the chemically macerated and the skull to be fully visible. In the skull bone obtained, separations and osseous fragmentation were observed in the nasal bone, the nasoincisive notch, turbinate bones, internasal suture, median palatine suture, mandibular symphysis, and teeth. In addition, the maceration process was exposed to chemicals and bad odors. As a result, the cleaning time of the *D.maculatus* colony, which was used to clean the soft tissue from bone tissue in sheep heads, was longer than chemical maceration, although it varied according to the number of insects. While all anatomical structures were obtained undamaged in heads cleaned with *D.maculatus*, separations and osseous fragmentation were observed in many anatomical structures in chemical maceration. It has been concluded that *D. maculatus* may be more advantageous than the chemical maceration method, which is frequently used in creating osteological material, and it can be easily used in routine without exposure to any chemicals as an alternative to this method.

Keywords: *Dermestes maculatus*, maceration, method, sheep, skull

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Oral Presentation

In vitro Toxıcıty Evaluatıon of Cadmium and Lithium Usıng Human Perıpheral Leukocytes as A Model System

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Abstract:
Karyotype of an individual, prepared from peripheral blood sample, is routinely used in genetic diagnostics and genetic counseling. However, karyotyping is equally useful as a model system for in vitro toxicity studies. A toxicity test is designed to generate data concerning the adverse effects of a substance on human or animal health, or the environment. The present study aims to use human peripheral leukocytes as a model system for invitro toxicity screening for metal ions namely Cadmium (Cd, Heavy meatal, environmental toxicant), Lithium (Li, Alkali metal used for treating mental disorders) and Chloroquine (Antimalarial drug). The toxicants were screened by performing Cytotoxic assays (MTT assays) and Genotoxic assay (Karyotyping and staining with Giemsa) on peripheral leukocytes. From the results it was observed that the IC_{50} values for various metal ions were 158.4893µg/ml (Cd) and 398.107µg/ml (Chloroquine). IC_{50} for Li could not be reached even at highest concentration used in the assay. For genotoxic assays Chloroquine showed complete inhibition of mitosis since no metaphase spreads were observed. Various chromosomal abnormalities were observed with Cd and Li which included numerical aberration and structural aberration (Chromosome Bridges and ring chromosome). The results indicate that Cadmium is more cytotoxic compared to Chloroquine. However, chloroquine has greater genotoxic effect. Lithium was found to be least toxic in human peripheral leukocytes. Using peripheral human leukocytes Cd and Chloroquine were shown to be significantly cytotoxic, having implications on exposure of such agents by humans.

Keywords: cadmium, Lithium, human leukocytes, cytotoxicity, genotoxicity

Funding: The study was partially funded by Mumbai University Research Grant to Dr. Priya Sundarrajan.

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Oral Presentation

Antimicrobial, Anti-Quorum Sensing and Anti-Biofilm Activities of *Elaeagnus umbellata* Methanol Extracts

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Abstract:
Unconscious and uncontrolled consumption of antibiotics has become one of the biggest threats to public health. The increasingly dysfunctional use of antibiotics, the rapidly increasing resistance problem and the inability to synthesize new antibiotics have led researchers to new studies. Plants have been consumed for therapeutic purposes since ancient times. Plants with active substances in their structures serve as raw materials for many drugs. The autumn olive (*Elaeagnus umbellata*) is a deciduous shrub commonly seen in Asia and Southern Europe and grown as an ornamental. In this study, antimicrobial activity of *E. umbellata* fruits against various Gram-negative, Gram-positive bacteria and *Candida albicans, Candida parapsilosis* fungi was investigated by agar well method. Another aim of the study is to examine the effect of *E. umbellata* on the system called quorum sensing and known as bacteria signal communication. Suppression of this system is seen as a step towards combating antibiotic resistance and prolonging the shelf life of antibiotics. Anti-quorum sensing was investigated in *Chromobacterium violaceum* ATCC 12472 isolate by agar well method. Anti-quorum sensing and antibiofilm activity were investigated with *Pseudomonas aeruginosa* PAO1 isolate. The results of the study show that the antimicrobial and anti-quorum sensing activity of *E. umbellata* methanol extract is moderate. In this direction, it is thought that different extracts and parts of the plant should be tested.

Keywords: Anti-Quorum sensing, Biofilm, *Elaeagnus umbellate*

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Oral Presentation

Iron (II) catalyzed selective hydroxylation of unsaturated hydrocarbons to secondary alcohol derivatives as pharmaceutical intermediates

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Information

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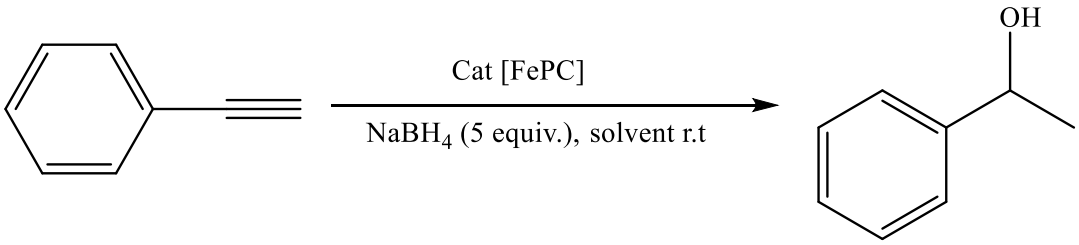
Abstract:
Transformation terminal and internal unsaturated hydrocarbons are investigated by iron (II) catalyst with excellent efficiency promotion. The production of secondary alcohols is an important intermediate fine chemical for industrials process agro-chemical and pharmaceuticals. In this work we selected alkynes as a simple of unsaturated hydrocarbons, and using Iron (II) Phthalocyanine with NaBH4 catalyst, which significantly promoted the efficient catalyzed terminal and internal alkynes to secondary alcohols following addition and elimination mechanism. Adding the $NaBH_4$ to the reaction mixture is promoted the catalytic efficiency of iron (ll) in ethanol, and in the absence of $NaBH_4$, the product of secondary alcohols was no found. The hydroxylation of terminal alkynes is led the secondary alcohols formed follow anti-Markovnikov's rule. Despite its proven evasiveness, we were compiling this reaction, indirect oxidation/reduction sequence requiring iron phthalocyanine stoichiometric of alkynes. Here, we report a more direct approach that alkynes are transformed to secondary alcohols in room temperature, under oxygen of atmospheric air, in one pot. Therefore, adding the extra oxygen has assisted hydroxylated phenyl acetylene and its derivatives producing a good yield of the 1-phenyl ethanol with excellent regionselectivity.

Keywords: Iron catalyst, alcohol, alkynes, transformation, and hydroxylation.



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Oral Presentation

Evaluation of the Relationship between the Amount and Type of Carbohydrate Consumed After the Evening Meal and Sleep Quality

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Abstract:
The aim of this study is to evaluate the relationship between the amount and type of carbohydrates consumed after evening meal and sleep quality. This study was conducted on 177 university students with an average age of 21. A general information questionnaire, 24-hour dietary recall, and Pittssburgh Sleep Quality Index (PUKI) questionnaire were applied to the participants. Body composition were determined with the TANITA DC 360 ST device using the bioelectrical impedance analysis (BIA) method. Height, waist-hip circumference was measured with a non-stretchable tape measure. Nutritional record data were recorded in BEBIS program. Final analysis of the study was done by SPSS Inc. Made with Chicago IL v21 program. The average PUKI score of the participants was 7.14. While 18.1% of the participants had good sleep quality (PUKI≤5), 81.9% had poor sleep quality (PUKI>5). No significant correlation was found between the amount of carbohydrates consumed after the evening meal and sleep quality ($p>0.05$). However, a significant correlation was observed between the percentage of carbohydrates, absorbable oligosaccharide consumption and PUKI score ($p=0.044$, $p=0.013$, respectively). Also, a significant correlation was found between protein amount, protein percentage and sleep quality ($p=0.037$, $p=0.020$, respectively). In addition, a significant correlation between the amount of water consumed after the evening meal and PUKI score was found ($p<0.05$). In this study, no relationship was observed between the amount and type of carbohydrates consumed after evening meal and sleep quality, but significant difference observed with the percentage of carbohydrates suggests the possibility that food preferences may affect sleep quality. Studies using larger samples are needed.

Keywords: Sleep quality, PUKI, carbohydrate

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Oral Presentation

Endoparasitic Prevalence, Bioaccumulation of Heavy Metals and Genotoxicity in Captive *Pavo cristatus* at Different Geographic Sites of the Punjab, Pakistan

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Abstract:
Captivity helps to conserve birds, but confined spaces make them under stress and leads to impair their fitness. Poor management conditions and environmental pollution are the major problems for captive lives. This study was conducted to evaluate and compare the endoparasites prevalence, the heavy metal accumulation and their genotoxic effects in captive Indian Peafowl (*Pavo cristatus*) kept at different regions of Punjab, Pakistan, i.e. Jallo Wildlife Park, Wildlife Park Bahawalpur and Wildlife Park Murree. Fecal samples were examined both qualitatively and quantitatively to analyze the prevalence of gastrointestinal parasites. The concentrations of heavy metals (Cr, Pd, Ni Co and Mn) were estimated in blood and feathers by using Atomic Absorption Spectrophotometer. Single-cell gel electrophoresis (comet) assay was conducted to assess the DNA damage. All the results were statistically analyzed. The result showed that Murree shows highest endoparasitic prevalence followed by Lahore's birds and then in Bahawalnagar's. The concentration of Cr was highest in samples of all the sites followed by Pb, Mn, Ni and Co. The highest metal accumulation was found in feather samples as compared to blood samples. Likewise, region-wise analysis showed that Jallo Wildlife Park Lahore appeared to be more polluted than Wildlife Park Murree and Wildlife Park Bahawalnagar. *P. cristatus* kept at Wildlife Park Murree and Jallo Wildlife Park Lahore had more genotoxicity as they faced more pollution and stress than the birds kept at Wildlife Park Bahawalnagar. This study concluded that among all the three study sites of Punjab the Wildlife Park Bahawalnagar is most suitable for housing captive animals and birds. This decision is made on the basis of least heavy metal accumulation, endoparasitic prevalence and DNA damage at Wildlife Park Bahawalnagar. Hence, the captivity helps to conserve the Indian peafowl, but it also causes stress in birds due to confined space. Proper management and control of pollutants in the environment are required in order to protect this specie.

Keywords: indian peafowl; captivity; endoparasites prevalence; heavy metals pollution; bioaccumulation; DNA damage

This research work was carried out under the financial support of the "Project No. 5656/Punjab/NRPU/R&D/HEC/2016" titled "Occurrence of Gastrointestinal Parasites and Comparative Efficacy of Albandazole and Levamisole against these Parasites in Peafowl (Pavo cristatus) Population kept in Captivity at Jallo Wildlife Park Lahore, Wildlife Park Bahawalnagar and Wildlife Park Murree, Punjab".

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Oral Presentation

Potential Use of Cornelian Cherry Fruit Extracts as an Alternative to Synthetic Preservatives

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Abstract:

Long-time exposure to ultraviolet (UV) ray from the sun has negative effects on skin health. The photoprotective creams are used to protect against UV-A and UV-B rays from the sun. The cream formulations with photoprotective effect cause allergenicity and toxicity as they contain various synthetic chemicals. People with high allergenicity prefer natural ingredients instead of these synthetic creams. Plant extracts with UV absorption and photoprotective properties can be used as natural protective agents. Plants are good natural resources with UV protection potential. Cornelian cherry (*Cornus mas* L.) is one of the important medicinal plants with nutritional and therapeutic properties. In this study, it was aimed to determine the potential usage of Cornelian cherry as a natural additive in sunscreens. For this purpose, water and chloroform extracts from Cornelian cherry were obtained by sonication method. Then, the sun protection factor (SPF) of the extracts was determined spectrophotometrically in the wavelength range of 290 nm-320 nm. Afterwards, the extracts were mixed with the commercial cream and the SPF value of the mixture was obtained to determine the effects of the cream on the sunscreen properties. SPF values of extract-cream mixtures prepared at various concentrations (10 ml, 5 ml and 2.5 ml) were determined. The water and chloroform extracts from Cornelian cherry showed an SPF of 7.46 and 10.67. The UV blocking capacity of the extracts is approximately in the range of 80-90%. The SPF value of the commercial cream (control) group was determined as 5.17 at 10 ml concentration. SPF values of the water and chloroform extract and cream mixtures were determined as 5.21 and 6.40 at 10 ml concentration. Cornelian cherry extracts increased the SPF value of the control group at a concentration of 10 ml. The water and chloroform extracts and cream mixtures have approximately 80% UV blocking capacity. The results showed that Cornelian cherry water and chloroform extracts have good UV blocking capacity. Therefore, Cornelian cherry extracts may have the potential to be used as natural sunscreen agent instead of synthetic preservatives in the cosmetic industry.

Keywords: *Cornus mas*, Sun Protection Factor, Ultraviolet, Extract, Cream

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Oral Presentation

Examination of branches of arteria carotis externa in a Anatolian wild goat

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Abstract:

Mountain goat (Capra) is a genus that includes 9 species. The domestic goat (Capra aegagrus hircus) is a domesticated subspecies of the wild goat. The study material consisted of a wild goat that was brought to Kafkas University Wildlife Rescue and Rehabilitation Center but could not be saved despite all the interventions. It was observed that arteria occipitalis emerged from the division of arteria carotis communis into arteria carotis externa and arteria carotis interna. It was determined that arteria carotis externa gave branches named arteria lingualis, arteria transversa faciei, arteria palatina ascendens, ramus massetericus, arteria auricularis caudalis, arteria occipitalis, arteria temporalis superficialis and arteria maxillaris. In this study, it was aimed to determine the course of the branches of the arteria carotis communis of the Anatolian wild goat (Capra aegagrus aegagrus) head living in the Caucasus and Northern Anatolia Region. It should not be forgotten that these findings of the extinct Anatolian wild goat may be the first or the last study. It is thought that the presented study will contribute to scientific studies and head surgery operations on similar subjects.

Keywords: Anatomy, arteria carotis externa, Anatolian wild goat

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Oral Presentation

Determination of Microbial Quality of Frozen Swordfish

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Abstract:

Fish is an important source of protein for human nutrition. Fish meat consumption is increasing due to its omega-3 rich content and its effect that helps to reduce heart diseases. It is important to evaluate fish meat, which is at risk of serious microbial contamination, both in post-capture, processing and presentation stages, in terms of public health. In this study, frozen swordfish (available on the shelf for sale) obtained from the Antalya fish market at 10-day intervals was used as material. A total of 60 samples were analyzed in 20 analysis days. The samples were brought to the laboratory without breaking the cold chain and were evaluated microbiologically after the necessary preliminary preparations. In all samples, total aerobic mesophilic bacteria (TAMB) (cfu/g), Coagulase (+) *Staphylococcus aureus* (cfu/g), coliform (MPN), *Escherichia coli* (MPN), *Listeria monocytogenes* (VIDAS), *Salmonella* spp. (VIDAS), *Vibrio cholerae* and *Vibrio parahaemolyticus* analyzes were performed. While TAMB was determined at different levels in all samples ($3x10^2$-$7x10^4$), Coagulase (+) *Staphylococcus aureus* (cfu/g) was determined as $2x10^2$-$3.4x10^3$ in 4 samples. *E. coli* and coliform group bacteria were determined in 7 and 13 samples, respectively. These bacteria could not be detected in the analyzes of *Listeria monocytogenes* AND *Salmonella* spp. performed with VİDAS. It was determined that all samples did not have any risk in terms of *Vibrio cholerae* and *Vibrio parahaemolyticus*. According to the results obtained, it was revealed that there were different levels of microbial contamination in our samples, but some pathogenic bacteria were not encountered. In order to prevent health problems caused by seafood, related studies should continue with a broad perspective. In addition, it is recommended that the people involved in the capture, production, marketing, processing and presentation stages undergo the necessary training.

Keywords: swordfish, microbiology, food, public health

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Oral Presentation

Evaluation of the Effects of 5-Fluorouracil (5-FU) on Some Surface Markers in Endothelial and Fibroblast Cells

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Abstract:

5-FU is a commonly used anticancer drug. Successful cancer treatment is limited due to the toxicity of the drug to normal cells. The cytotoxic effect of an anticancer agent often results from off-target specificity, attacking all rapidly dividing cells. Therefore, 5-FU has been shown to inhibit fibroblast and vascular cell function. Surface proteins known as clusters of differentiation (CD), which include integrins, adhesion molecules, glycoproteins and receptors, belong to many different groups. During drug therapy, due to disturbed homeostasis, the proportion of CD markers has been altered. In this study, we aim to compare some specific CD markers such as CD24, CD44, CD133, and EpCAM between human umbilical vein endothelial cells (HUVEC) and mouse embryonic fibroblasts (3T3). Also, we want to evaluate the alterations in uptake of 5-FU in cells. Therefore, HUVEC and 3T3 cells were seeded in 6 wells of $1x10^5$ cells each when they reached 80% confluence. HUVEC and 3t3 cells were followed for 14 days in separate flasks by adding 0.001, 0.01 and 0.1 µg/ml 5-FU. Meanwhile, the same content of medium was changed 1:1 (new/old) every 3 days. The remaining cells were isolated and the percentage changes of CD24, CD44, CD133 and EpCAM were calculated using flow cytometry. The changes of rhodamine123 (rho123) in the different ratios were used to measure the uptake of 5-FU into the cells. Therefore, it was recognised that 0.1 µg/ml 5-FU significantly decreased cell viability in both endothelial and fibroblast cells, resulting in more resistant cells surviving. The ratio of CD24 and EpCAM in endothelial cells did not change 14 days after 5-FU administration, but the ratio of CD44 increased twofold and the ratio of CD133 decreased by half. In fibroblast cells, there was a slight increase in CD133 and CD44 levels and a fourfold increase in EpCAM levels. The level of CD24 decreased by 50%. The proportion of rho123 increased significantly in both cell types in the drug-loaded and non-loaded groups. These results show that sensitive cells are eliminated when 5-FU is used, but the primitive cell population with stem cell markers is preserved and cells with this characteristic survive.

Keywords: 5-fluorouracil (5-FU), surface markers, rhodamine123 uptake

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Oral Presentation

Gelatin Production from Waste Rainbow Trout (*Oncorhynchus mykiss*) Skins and Determination of Its Technological Properties

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Abstract:
It is observed that there are decreases in natural resources and biodiversity with the effects of various pressures and climate change in the world and our country. In order to reduce these risks, the United Nations, the European Union, etc. Organizations have various action plans and objectives. One of these main objectives is the evaluation of waste. As a result of the processing of fish in our country, more than 50% of waste is generated from each fish. These wastes, such as skin, head, bones, and scales, contain around 30% collagen protein. It is possible to produce products such as gelatin with higher added value from these wastes. In our study, it is aimed to determine the technological properties of fish gelatin extracted from the waste skins of rainbow trout (*Oncorhynchus mykiss*). The production of gelatin was performed by an extraction method and its technological properties such as gel strength (bloom value), emulsion activity and stability, foaming and stability, and oil binding capacity were determined, and the commercialization potential of the produced gelatins was investigated by comparing them with commercially produced bovine gelatins. The gel strength of trout gelatin (95 g) was found to be lower than the gel strength of bovine gelatin (220 g). The emulsion activity and stability, foam capacity and stability, and oil binding capacity values of trout gelatin were 271.75 m^2/g, 48.71 min., 40.34%, 31.33%, and 0.58 mL oil/g protein respectively while cattle gelatin was 271.84 m^2/g, 52.5 min., 44.76%, 7.84%, 0.62 mL oil/g protein, respectively. In general, the results reveal that the technological properties of trout and commercial cattle gelatin are close to each other except for the gel strength. As a result, gelatin, a protein with high added value, can be produced from waste fish skin, which has the risk of economic loss and environmental pollution. With gelatin obtained from trout wastes, both the solution to environmental pollution problems and an alternative product opportunity for imported porcine gelatin for the food industry can be offered.

Keywords: rainbow trout, fish waste, gelatin, technological properties,

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Green Syhthesis of Waste Walnut (*Juglans regia* L.) Inner Shell Based Silver Nanoparticles

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Abstract:

Nanotechnology is a developing technology to improve the physical, chemical and biological properties of matter with the size of 1-100 nm. Nanotechnology research benefits many sectors such as medicine, automotive, electronics, food, textile, agriculture, cosmetics, equipment and materials. Silver nanoparticles (AgNP) have importance in nanotechnology applications with properties such as chemical stability, electrical conductivity, catalytic and antibacterial activity. Silver is the least toxic element compared to other elements. AgNPs could be synthesized by different methods such as physical, biological and chemical methods. The most commonly used synthesis technique is biological synthesis. Green synthesis method is the most preferred method because it is ecologically friendly, energy saving, cheap, less waste, easy scaling, sustainability, not using toxic chemicals and being biologically compatible. In addition to the use of bacteria, yeast, algae and plants could be used as a reducing and stabilizing agent. Silver nanoparticles obtained by this method has many application area such as biosensors, medicine, etc. Walnut is a versatile fruit with its leaves, dry and green fruit, timber, inner membrane and outer peel. Walnut is a widely consumed nut because it contains valuable nutrients and oils. In this study, waste walnut inner shell was used to synthesis silver nanoparticles. WS-AgNPs were synthesized and characterized using the green synthesis technique from the shell in the inner part of the walnut. The obtained nanoparticles were characterized using UV-Vis spectrophotometer and FTIR. It was determined that the obtained nanoparticles gave maximum absorbance at 460 nm.

Keywords: green synthesis, silver, nanoparticles, FTIR, UV

[#]This study is a part of Merve Can's Master's Thesis. It was supported by Bilecik Şeyh Edebali University with project number (BAP) 2022-02.BŞEÜ.01-03.

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Oral Presentation

A Cross-Sectional Survey Among Herdsmen to Explore Goat Milk Production in The Outskirts of Lahore, Pakistan

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Abstract:

Goat milk is a healthy diet for human nutrition. Among Asian countries, the largest goat population exists in China, India, Pakistan, and Bangladesh. Pakistan is one of the tropical countries rich in goat milk production, especially in the plain areas including the Punjab Plain. Goats of different breeds are available with different milk production rates. However, a centralized goat milk collection and distribution platform is missing. Like Cow's and buffalo milk fresh goat milk is not available in packed form in the markets within Pakistan. For establishing food security, there is a need to know the availability/production of goat milk. To achieve it the main objectives were to identify the goat breed distribution, the total number of milking goats, the average milk produced in (liters per day per household), and to find the average feeding cost per day per goat in suburban and rural areas. Out of the total population of 65 villages in the outskirts of Lahore, 7 villages were selected through stratified random sampling. Basic data were collected from farmers who keep the goat flocks. A total of n= 380 questionnaires (134 suburban and 246 rural) were selected by considering a 95% confidence interval. The collected data was analyzed with the help of Microsoft Excel and IBM SPSS Statistics v26. Upon analysis it was found that there were three (03) goat breeds available namely, Desi, Beetal, and Teddy. The goat breeds Desi was found to be kept mostly by the people both in suburban and rural areas. The average number of milking goats in suburban and rural were 2 and 3 per farmer respectively. The average total milk produced (liters per day per household) in suburban and rural areas were 2.45 and 3.17 respectively. On average, the feeding cost/day was worked out to be 0.27 USD per goat in Sub Urban areas and 0.28 USD per goat in rural areas. Therefore, for increasing food security, a variety of strategies need to be implemented to boost the profitability of goat farms, which play a significant social and environmental role in less established areas.

Keywords: food security, goat milk, milk production, nutrition

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Oral Presentation

Evaluation of the Resistance Profile of Fungal Infections

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Abstract:

Fungi from Candida genus are the main cause of hospital-acquired fungal infections, but other opportunistic fungi (Trichosporon and Cryptococcus) have also become a serious threat for immunosuppressed patients. Antifungal resistance is especially high in intensive care units due to increased antifungal use. Our study investigated the types and antifungal resistance of fungi isolated from patients at Biruni University Research and Application Hospital. We analysed 78 clinical samples from 67 patients between March 2020 and March 2021 retrospectively. The samples were identified by germ tube test and VITEK 2 Compact® (Biomerieux, France) yeast identification system. The antifungal susceptibilities of the samples were tested against fluconazole, voriconazole, caspofungin, micafungin, amphotericin B and flucytosine. Of the 78 clinical samples obtained from 67 patients in the study, 53 (68%) were urine samples. A total of 78 isolates were obtained from the clinical samples, 62 (79%) of which were from the intensive care unit. Candida species accounted for 92% of the samples and non-Candida species (Trichosporon and Cryptococcus) for 8%. The most common species was *Candida albicans* (n=44), followed by *Candida tropicalis* (n=9), *Candida parapsilosis* (n=8), *Candida ciferri* (n=4), *Cryptococcus laurentii* (n=3), *Trichosporon asahii* (n=3), *Candida lusitaniae* (n=2), *Candida famata* (n=1) *Candida glabrata* (n=1), *Candida kefyr* (n=1), *Candida rugosa* (n=1), *Candida spherica* (n=1). The resistance rates of Candida and non-Candida species to different antifungals were compared. fluconazole and flucytosine had the highest resistance rates among Candida species (13.8% each), while caspofungin had the highest resistance rate among non-Candida species (83.3%). *C.albicans* was most resistant to flucytosine (15.9%), while *C. lusitaniae*, *C. famata*, *C. glabrata* and *C. spherica* showed no resistance to any antifungal. *Cryptococcus laurentii* was resistant to caspofungin (66.6%), and *Trichosporon asahii* was resistant to fluconazole, caspofungin and micafungin (100% each). The increasing frequency and severity of fungal infections, along with the persistence and emergence of antifungal resistance, highlight the need for in vitro susceptibility testing for optimal and effective antifungal treatment. Moreover, non-Candida species causing fungal infections should be monitored more closely for antifungal resistance.

Keywords: Antifungal, antifungal resistance, Candida species, fungal infection, non-Candida species.

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Oral Presentation

Mutidrug resistance and biofilm formation of *Pseudomonas aeruginosa* strains in the university hospital of Batna, Noertheast Algeria

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Abstract:

Pseudomonas aeruginosa is a major pathogen in hospitals, it's involved in several severe infections besides its high antibiotic resistance. This recent problem is constantly increasing and threatens many countries around the world, especially Algeria. The purpose of this work was first to study antibiotic resistance and its genetic supports for a total of 227 strains, collected over a period of 24 months (2015-2016) from the wards of the university hospital of Batna, Algeria. And secondly assessing the formation of biofilm in isolated strains. Two identification techniques were used: Api20NE system and MALDI-TOF MS. The antibiogram was carried out by agar diffusion method and CMI using microplate assay; as well a molecular study for the resistance genes (PCR, sequencing) and molecular typing (MLST and PFGE). Biofilm evaluation was carried out using three techniques: CRA, TM and TCP. Our results reported a variable resistance prevalence of isolates to most tested antibiotics mainly for β-lactams with 34,80% of resistant strains towards ticarcillin and 15,42% of resistance for ceftazidim, aminoglycosides (rates of *28,19% and 34,36%)* and 1.76% of colistin resistant strains. 19.38% of isolates were carbapenem resistant, of which 32 strains harbored *bla*$_{\text{VIM-4}}$ carbapenemase. Genotyping revealed a diversity of sequence types with an outbreak of ST244 and a clonal relationship demonstrated in PFGE typing. Our strains have been isolated mostly from male burn victims. The rates of isolates with formation of forming a biofilm were 24%, 19% and 27% according to the CRA, TM and TCP technique respectively. Strains with MDR profile formed 28.30% of forming biofilm strains detected by CRA, 33.33% by TM and 30.64% by TCP method. These results highlight the spread of multidrug-resistant and virulent strains, which needs extremely the creation of an antibiotic resistance surveillance policy and the implementation of control strategies.

Keywords: *Pseudomonas aeruginosa*, antibiotic resistance, biofilm, the university hospital of Batna.

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Oral Presentation

Evaluation of the fatty acid composition in *Quercus pyrenaica* acorns: influence of the development stage

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Abstract:

Acorns are considered nutritionally valuable, being a reliable source of carbohydrates, proteins, and fat. In particular, the oil extracted from oak fruit has characteristics like those of common edible oils, with a composition rich in bioactive compounds and, therefore, with greater potential for industrial application. In this context, this work aims to valorize the acorn from black oak (*Quercus pyrenaica*) characterizing the fatty acid composition through the development stage.

For that, acorns were collected in black oak forests within Montesinho Natural Park, Bragança, Portugal, between July and October of 2021, in three different development stages. The total lipid content as well as fatty acids profile was evaluated in the complete fruit, cupule, seed and pericarp. Also, acorns from *Q. ilex* and *Q. suber* were analyzed for comparison. The lipid content was obtained through Soxhlet extraction. After trans-esterification reaction, the fatty acids were analyzed by gas chromatography coupled to flame ionization detection (GC-FID). The results revealed that the complete fruit and the seed are very rich in lipids, with values around 6–7 %. Also, the mature stages of the fruit presented higher lipid content with values around 3–5%. Concerning the fatty acids, results showed a rich composition, where C16:0 (palmitic acid), C18:0 (stearic acid) and C18:1n9c (oleic acid) were the main compounds. A content variation depending on the development stage and the specie was observed, with the earlier stages of *Q.pyrenaica*, showing a high amount of C16:0 (59±0.01%) when comparing with the later stages. The content in C18:0 and C18:1n9c increases through the three development stages, with values of 45±0.01% and 59±0.01%, respectively. Both the saturated fatty acids (SFA) and monounsaturated fatty acids (MUFA) increased their concentration through the development stages. When comparing with the other studied species, *Q. pyrenaica* presented higher composition in SFA, MUFA and polyunsaturated fatty acids (PUFA). The distinctive and high quantity of lipophilic compounds, and the availability of acorns, make oak fruits an interesting source of plant material for industrial applications.

Keywords: Black oak; acorn; fatty acid; vegetable oil; gas-chromatography

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Oral Presentation

Molecular docking analysis of LOX with dieckol

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Abstract:

LOX (Lipoxygenase) is an enzyme that catalyzes the oxidation of polyunsaturated fatty acids (PUFAs), such as arachidonic acid, into leukotrienes, which are involved in inflammation and other physiological processes. Dieckol is a natural phlorotannin found in brown algae that has been reported to possess various pharmacological properties, including antioxidant, anticancer, and anti-inflammatory activities. Studies have shown that Dieckol can inhibit the activity of LOX, thus reducing the production of leukotrienes and potentially mitigating inflammation. The mechanism of LOX inhibition by Dieckol is thought to involve the binding of Dieckol to the active site of LOX, preventing the oxidation of PUFAs. The LOX enzyme's was imported from the protein data bank into Chimera 1.14 with the code PDB ID: '3O8Y' (https://www.rcsb.org/). The enzymes were prepared in pdbqt file format using AutoDockTools 1.5.6 program. Ligands were drawn with the Chem3D 19.0 program, minimized, saved in pdb format. And converted to pdbqt file format with AutoDockTools 1.5.6 program. The molecular docking process was carried out with the latest AutoDock Vina program. The results were displayed in 2D and 3D with the PyMOL and Discovery Studio 2020 Client program. In this study, dieckol molecule, whose anti-inflammatory effect has been shown in the literature, was bound to the LOX enzyme with a binding energy of -8.1 kcal/mol. Conclusion, the inhibition of LOX by Dieckol may have therapeutic implications for various inflammatory disorders and diseases that involve the overproduction of leukotrienes.

Keywords: Dieckol, LOX enzyme, Molecular Docking

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Oral Presentation

External Bacterial Flora Of Domestic Cockroaches And Their Antibiotic Resistance

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Abstract:

A study was conducted to estimate the prevalence of the external bacterial flora of two domestic cockroaches (Blattella germanica and Blatta orientalis) collected from households in Tebessa (Northeastern Algeria). Three major bacterial groups were cultured (total aerobes, enterobacteria, and staphylococci) from 14 cockroach samples, and antibiotic susceptibility was tested for Staphylococcus and Pseudomonas isolates. The culture showed that the total bacterial load of cockroaches from different households were comparable ($P<0.001$) and enterobacteria were the main colonizers of the insect surface, with a bacterial load of (2.1×10^5 CFU/insect), whereas the staphylococcus group was the minority. Twenty-eight bacterial species were isolated, and susceptibility patterns showed that most staphylococcal isolates were highly susceptible to chloramphenicol, gentamycin, pristinamycin, ofloxacin, clindamycin, and vancomycin; However, Pseudomonas strains showed resistance to amoxicillin/clavulanic acid, imipenem and second-generation antibiotics such as cephalosporin and cefuroxime.

Keywords: antibiotic resistance, Blattella germanica, Blatta orientalis, environment

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Oral Presentation

Social Service After Disaster

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Abstract:
Despite technological developments, it is observed that the threat areas related to biosecurity have not decreased but also increased and diversified ironically. Natural disasters, with their uncontrollability, are still close to contemporary life. Other vital risks that occur in human social environments are also experienced at an unpredictable speed and variety, just like a natural disaster. Countries that try to turn to liberal policies by avoiding the inclusiveness of social state services, on the other hand, have to turn to social policies when faced with these disasters. While the disaster of the century in Turkey, the 6 February Earthquake, first collapsed on the country with its natural and then social dimensions, the need for social service was revealed in all its aspects. The traumatic effects of disasters are diverse and have socio-economic dimensions as well as psychological ones. The earthquake has produced consequences that affect people's displacement, death and injury, disruption of health systems, scarcity of food, water and energy resources, and their ability to cope most directly with activities of daily living. Women, children, the elderly and the disabled, who are the most vulnerable segments of the society and therefore constitute the scope of the groups to which the social work field will give direct attention and support, have come to the fore in policies because they have experienced greater victimization in this process. Priorities in making choices, which became necessary in the conditions imposed by the disaster, and the shocked behavior of segments of society who were so closely confronted with the reality of death created great difficulties in carrying out their social work duties. Service conflicts of acute period officers have also been an important problem, negatively reflected on services as coordination weaknesses. In this study, emergency response policies will be discussed from the perspective of central and local governments in meeting the post-earthquake social service needs. The study, which is in compilation format, was created by scanning official reports, press and literature review, and local government websites data.

Keywords: social service, earthquake, biosecurity, service conflicts, fragile groups

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Oral Presentation

Taxonomic study and antioxidant evaluation of an *Opuntia* plant grown in Algeria

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Abstract:

Opuntia are well known plants traditionally used in folk medicine, and which scientific reports confirmed their richness in various bioactive compounds, like : polyphenols, vitamins, and betalains. This study aims to study the taxonomy and evaluate the polyphenol content and antioxidant potential of *Opuntia* fruits grown in Béjaia, using various *in vitro* biological tests. Phylogenetic analysis confirmed the assignment of the sample to the genus *Opuntia*. The seed, pulp, and whole fruit fractions of the plant showed different amounts of polyphenols, with the highest values recorded in the whole fruit with 453.27 mg GAE/100g DM and 61.30 mg QE/100g DM for, respectively, phenolic and flavonoid compounds. The evaluation of the antioxidant activities revealed a strong potential of the pulp and the whole fruit, which demonstrated a good inhibiting potential for hydrogen peroxide, hydroxyl radicals and nitric oxide with, 31.26 ; 21.41 and 55.22% of inhibition, respectively. The statistical analysis also confirmed a significant correlation between antioxidant activities with phenolic compounds and flavonoids ($p \leq 0.001$) for all *Opuntia* extracts. Finally, the present study concluded that the fruits of *Opuntia* have a good antioxidant potential, and could be of great interest for human health, by preventing the appearance of disorders related to oxidative stress.

Keywords: *Opuntia*, fruit, taxonomy, phenolic compounds, antioxidant potential.

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Oral Presentation

Effect of Essential Oils Blend on Growth Performance, Carcass Characteristics and Total Bacterial Count in Broiler

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Abstract:

Various feed additivesincluding antibiotics are continuouslybeing usedas growth promoters in underdeveloped countries,but unfortunately antibiotic residues are posing alarming challenges of antimicrobial resistance. Efforts are being made to explore the alternative safe solutions. The present study was conducted to compare the antibiotics and commercial essential oils blend on the growth performance, carcass characteristics and total microbial count in broiler chickens. A total of 1120 broiler chickens were divided into 5 groupshaving four replicates in each group and each replicate comprised of 56 birds.Group A was provided with basal diet having antibiotics (Positive control).Group B was provided with basal diet that wasdevoid of antibiotics (Negative control). Group C,Group D,Group E was provided with diet of group B along with essential oil blend at the dose rate of0.12mL/Kg,0.25mL/Kg,0.50mL/Kg respectively. Duration of the trial was 35 days.Body weight gain as well as feed conversion ratio showed significant improvement in group C. Eviscerated weight and giblet weight were observedhigheringroupCwhiledressedweightrevealedinsignificanteffects.Antibody titer against ND remained non-significant. Maximum villus length was observed in group D as compared to control groups. Significantly lower total viable bacterial count was recorded in group E. In conclusion, essential oils manifested significant result s in case of growth performance, carcass characteristics and a total intestinal microbial count. It is recommended to use essential oil blend as safe alternate to antibiotics.

Keywords: Essential oil, broiler, gut microbial count, growth performance.

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Oral Presentation

Vimentin Immunoexpression in Cyclic Corpus Luteum of Indian Buffalo

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Abstract:

The current research work was designed to explicate the immunoexpression pattern of vimentin during development and degeneration of cyclic corpus luteum (CL). The study was performed on CL collected from healthy buffaloes (n=40), from slaughter houses; categorized into four stages i.e., stage I (1 to 5 days, early), stage II (6 to 11 days, mid), stage III (12 to 16 days, late luteal) and stage IV (17 to 20 days, follicular) phases. Tissues were fixed in 10 per cent NBF, processed further and sectioned for immunohistochemistry. The sections were incubated with Anti-Vimentin as primary antibody at 4^0C overnight followed by universal secondary antibody. In stage I, the intermediate filaments were localized in cytoplasm of developing luteal cells i.e., both small and large luteal cells and thus strongly positive for anti-vimentin antibody. The connective tissue septa had weak to nil reaction. The endothelial cells of abundant blood vessels due to intense angiogenesis at this stage had strong immunoexpression. In stage II, the cytoplasm of large luteal cells located mainly at periphery had stronger immunoexpression whereas those present within the center had moderate immunostaining. Other non-luteal cells also had strong immunostaining. In stage III, few intact luteal cells had strong whereas regressing luteal cells had moderate immunostaining. The capillaries and larger blood vessels had strong immunostaining within the endothelial cells. Also, the intermediate filaments surrounding the regressing luteal cells and blood vessels were strongly positive. In stage IV, the immunostaining was considerably reduced and occasional regressing luteal cells had strong immunostaining. Most of the strong immunoreaction was localized within the endothelial cells and smooth muscles around thicker blood vessels at this stage. However, the parenchyma had strong immunostaining in the intermediate filaments that replaced the regressing cells. Immunoexpression of vimentin was strong throughout luteal parenchyma in the initial phases of CL development and it was strong only around regressing luteal cells and endothelium of thick vessels during CL regression.

Keywords: Buffalo, Corpus luteum, Cyclic, Intermediate filaments, Vimentin

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Oral Presentation

Dough-leavening capacity of individually inoculated dry rye sourdough isolates

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Abstract:

Demand for yeast-free bread and bakery products has increased due to the establishment of the negative impact of industrial yeast on health. According to numerous studies, homemade sourdough is harmless, improves bakery products' properties, quality, and nutritional value, and extends its shelf life. The research mainly aimed to isolate heterofermentative lactic acid bacteria (LAB) from homemade dry rye sourdough to assess their prospects of dough-leavening capacity without bakers yeast. Dry rye sourdough was extracted with sterile water before sowing onto a nutrient medium. Extracts after 24h and 48 h waiting were also used to estimate the effect on the isolation of LAB. From bacterial colonies grown on appropriate growth media, 26 colonies of various shapes and colors were selected. According to morphological features, 12 belonged to yeast while 14 were bacteria; among them, 6 were hetero-, and six were homo-fermentative LAB based on the nature of the fermentation. Doughs were inoculated with heterofermentative LAB individually and incubated for 24 hours at 30 ºC. After incubation, the volume increase (ΔV, mL), pH value, and total titratable acidity were measured. The volume increase was 35 mL -80 mL, with the highest value in extract without delay. A decrease in pH value (4.12-4.35) and an increase in total titratable acidity in the range of 0.34-0.68 0.1 N NaOH/10 g sample indicated fermentation occurred. Based on the results obtained, it should be concluded that LAB isolates are suitable for dough leavening.

Keywords: rye sourdough, lactic acid bacteria, yeast-free bread, fermentation.

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Oral Presentation

Instant Mixed Herbal Tea Production with Spray Drying

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Abstract:

Herbal teas are beverages that have great importance in preventing and treating diseases with their high content of antioxidant substances such as fat-soluble vitamins A and E, water-soluble vitamin C, and phenolic compounds. In this study, the production of mixed herbal tea, which is used for medicinal purposes and consumed with pleasure in our country, as soluble tea by spray drying and its effect on quality parameters, especially total phenolic content, were investigated. For this purpose, the mixed herbal tea was extracted in water at different temperatures (70, 80, and 90 °C) and times (5, 10, and 15 minutes). The optimum extraction conditions were determined by considering the temperature-time combination that yielded the highest total phenolic content in the extracted samples. The extract was dried with spray drying by adding maltodextrin as a carrier material and soluble (instant) herbal tea was obtained. The color, brix and total phenolic content of the teas were determined. Depending on the increase in temperature and time, an increase in L value and brix was determined in the samples. FTIR spectroscopy was used to determine the effect of the production method on the phenolic compound. The tea sample with the highest total phenolic content (80°C for 15 minutes) was selected and dried in the spray dryer. Instant tea was dissolved in hot water (0.4g/100ml), and color, brix and total phenolic content analysis were also made in this tea. While the color and brix value of instant tea did not change as compared to the extracted tea, it was determined that the total phenolic content increased. The total phenolic content of instant tea was found to be 203.9±11.4 mg GAE/kg whereas that of mixed herbal tea extract was 168.34±4.22 mg GAE/kg. As a result of FTIR spectroscopy, it was determined that there was a change in phenolic content with spray drying in the tea samples. It is thought that this study will contribute to the widespread production of instant mixed herbal tea, rich in phenolic substances, and its practical use as an alternative to commercially produced filtered tea bags.

Keywords: FTIR, instant tea, spray drying, total phenolic content

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Oral Presentation

Rodents as reservoirs of Coxiella burnetii

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Abstract:

Wild rodents, which are considered to host many zoonotic diseases, are known to pose a potential threat to human and animal health. In terms of *Coxiella burnetii*, the potential of rodents to transmit to humans and other animals is currently discussed. *Coxiella burnetii* naturally infects some animals such as goats, sheep and cattle. It also causes high economic losses. *C. burnetii* is the causative agent of Q fever, known as zoonosis, which also causes infections in humans. The agent is also known as an intracellular pathogen. The aim of this study was to investigate the molecular prevalence of *C. burnetii* in rodents. For our research, 49 rodents collected from Central Anatolia, Black Sea and Marmara regions of Turkey were studied. Our aim is to analyze the possible role of rodents in the transmission of *C. burnetii*. As a result, 6 out of 49 collected rodent samples were positive as a result of molecular research using real time PCR. It was determined that *C. burnetii* had a wide distribution in terms of rodents. Considering the wide variety of hosts and their pathologies, the importance of the results of this study in terms of public health and veterinary sciences has been seen. It has been thought that rodents may act as reservoirs for Q-fever. However, their role in the geographical spread and transmission of the disease still awaits clarification. Further studies on epidemiological aspects in different hosts are needed to further optimize the control of disease caused by *C. burnetii* agents.

Keywords: *C. Burnetii*,rodent, zoonoses

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Oral Presentation

A Complicated Humeral Fracture in a Mountain Gazelle (*Gazella gazella*) Calf in Kyrgyzstan

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Abstract:
In this case report, it was aimed to present a complicated humeral fracture case in a 1.5-month-old mountain gazelle calf. A female gazelle calf in a zoo in Bishkek, the capital city of Kyrgyzstan, was brought to the clinic with the complaint of limping. As a result of the x-ray examination, it was determined that the calf had a humeral fracture in the right forefoot. Osteosynthesis underwent using a pin. The animal was placed under general anesthesia by applying dissociative anesthesia with xylazine and ketamine. The supporting bandage was applied the leg. Postoperatively, 0.4 ml (IM) penicillin and 0.4 ml (IM) ketoprofen were administered to the animal. The animal came to the control after 10 days, general examination was done and x-ray was taken. The general condition of the animal was good. The supportive bandage was removed and wound dressing was done twice a day, and ceftriaxone 0.4 ml (IM) was administered once a day for a total of 4 days. Bone union occurred 10 days postoperatively. At the one-month follow-up, the calf was free of pain and had no defect of general condition. It was concluded that the information about performing such an operation on a gazelle calf at a very early age and obtaining a successful result would be beneficial for zoo veterinarians and students.

Keywords: Mountain Gazelle (*Gazella gazella*) Calf, osteosynthesis,

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Oral Presentation

Investigation of the Effects of a Benzimidazole Compound on Prostate Cancer Cell Line

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Abstract:

Prostate cancer, which is an important health problem worldwide, is one of the most common cancer types in men. Chemotherapy, which is one of the current methods used in cancer treatment, provides limited benefit for metastatic prostate cancer and therefore new agents that can be developed for more effective treatments are needed. The benzimidazole core is a heterocyclic compound and is widely used in biological applications. It is among the important pharmacophores in medicinal chemistry. Benzimidazole derivative compounds play an important role in the development of many therapeutic anticancer drugs through different mechanisms of action. In this study, a benzimidazole derivative compound was synthesized in order to obtain an anti-prostate cancer drug, and it was tested on PC3 cell line (a highly invasive human prostate cancer cell line) and evaluated for cytotoxic activity with MTT test. It was determined that the related compound exhibited high anti-proliferative activity depending on the dose in the metastatic cell line. In future studies, it is aimed to comprehensively evaluate the metabolic effects of the synthesized structure as an effective anti-cancer agent candidate against prostate cancer.

Keywords: Anticancer, benzimidazole, cytotoxic activity, prostate cancer.

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Oral Presentation

Evaluation of Diabetes Risk of Teachers Working At Suleyman Demirel University Faculty of Health Sciences

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Abstract

This study was conducted to evaluate the diabetes risk of faculty members working at the Faculty of Health Sciences of Süleyman Demirel University. This cross-sectional study was conducted with the participation of 42 lecturers working at the Faculty of Health Sciences of Süleyman Demirel University. The risk of developing diabetes was assessed using the FINDRISK scale. The dietary habits of the instructors participating in the study were questioned, waist circumference was measured and body mass indexes were calculated. It was determined that 84% of the faculty members working at the Faculty of Health Sciences of Süleyman Demirel University participated in this study. Of the participants, 88.1% were women, 78.6% were married, 85.7% lived with their families, 73.8% had no other known disease diagnosis, 83.3% It was determined that they were non-smokers and 50% of their academic staff were research assistants. The mean FINDRISK score was determined as (8.7381±4.74), and when the socio-demographic characteristics of the lecturers included in the study and their FINDRISK score averages were compared, no statistically significant relationship was found between them and any variable ($p>0.05$). The FINDRISK score average of the academicians with a known disease diagnosis was found to be statistically higher and significant than the individuals without any additional disease ($p<0.05$). Since diabetes is a common disease in the world and in our country; It is recommended to use the FINDRISK scale to identify individuals at high risk for diabetes.

Keywords: diabetes risk, diabetes mellitus, findrisk

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Oral Presentation

Unraveling the Interactions between Paclitaxel and Graphene Nanocarriers with Antidote Nanoholes

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Abstract:

In recent years, the use of nanomaterials in drug delivery has emerged as a promising approach to overcome the limitations of traditional drug delivery systems, such as low bioavailability, poor solubility, and non-specific targeting. Among them, 2D nanomaterials such as graphene have been extensively studied due to their high surface area, mechanical strength, and unique physicochemical properties. However, the successful application of graphene in drug delivery relies on a detailed understanding of the interactions between the drug molecules and the graphene nanocarriers. In this study, we employed molecular dynamics simulations to investigate the binding of PTX drug molecules to graphene nanocarriers with antidote nanoholes. Our results demonstrated that the arrangement of nanoholes and their diameter have a significant impact on the binding energy of PTX molecules. Specifically, we found that when the diameter of the antidote nanohole was below a certain threshold, the PTX molecules lost their van der Waals interactions with the graphene nanocarriers, resulting in a reduction in the binding energy. This observation highlights the importance of carefully designing the nanocarriers for drug delivery to maximize the drug loading capacity and enhance the delivery efficiency. Additionally, we also observed that the nanohole arrangement played a role in the binding of PTX molecules, with some arrangements leading to stronger binding than others. Overall, our findings provide crucial insights into the design of graphene-based drug delivery systems and can guide the development of more effective and targeted therapies. The results of this study contribute to the advancement of nanomedicine and bring us a step closer to achieving personalized medicine. With further investigation, graphene-based drug delivery systems could be a promising platform for delivering a variety of therapeutics with improved efficacy and fewer side effects.

Keywords: Nanohole, Cancer, Graphene, Paclitaxel, Molecular Dynamics

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Oral Presentation

Serological and Virological Investigation of Border Disease Infection in Sheep in Denizli Province

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Abstract:

Border disease is one of the serious viral disease responsible for worldwide significant economic losses in sheep. The objective of this study was serological and virological investigation of pestivirus infections in sheep Denizli province of Turkey. In the study, 275 samples were collected. For this purpose, each sample (5 ml) was taken from the jugular vein using a vacutainer EDTA tube to collect plasma and a simple vacutainer tube to collect sera. Sera were separated from the clotted blood by centrifugation at 2500 g for 15 min, aliquoted into sterile eppendorf tubes of 1 ml. The specific anti-pestivirus antibodies were measured in 275 sera from sheep using a commercially available enzyme-linked immunosorbent assay (ELISA) according to the manufacturer's instructions. Reverse transcription polymerase chain reaction (RT-PCR) technique was used to detect the presence of pestivirus nucleic acid using 5'UTR primer pairs for whole blood samples. 31 (11.27%) of 275 sheep were seropositive for the presence of antibody to pestivirus with commercial ELISA. In this study, whole blood samples taken from sheep were found to be negative in terms of pestivirus antigen by RT-PCR. As a result, more animal sampling is recommended to reveal the epidemiological presence of Border disease. Further studies are needed in future to determine the prevalence of BDV infection in sheep in Turkey and its impact on sheep production.

Keywords: Border disease, ELISA,sheep, RT-PCR, Denizli

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Oral Presentation

Antioxidant Potential of *Cladostephus spongiosum* Brown Macroalgae

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Abstract:

With the increase in scientific investigation on macroalgae, the commercial importance of algae is increasing and their usage areas are expanding. In particular, studies conducted in recent years show that macroalgae are rich in compounds with high antioxidant properties. In addition, many studies have proven that macroalgae have some secondary metabolites such as phenolics and flavonoids responsible for antioxidant activitiy. Different extracts from marine macroalgae are a rich source of biologically and structurally active metabolites. For this reason, many chemical compounds obtained from different marine organisms are used in medicine and pharmacy as the main ingredient or auxiliary component of drugs, and new pharmaceuticals are developed from them. In this study, we aimed to determine in vitro antioxidant activities (DDPH$^{\bullet}$, ABTS$^{\bullet+}$, CUPRAC and metal chelating activity) ethanol, metanol, hexan and water extracts of *Cladostephus spongiosum*, which is economically important marine brown macroalgae. BHA (Butyryl hydroxy anisole),BHT (Butyryl hydroxy toluene) and EDTA were used as standard in the total antioxidant activity determination methods we applied to *C.spongosium* extracts and the highest ABTS activity values were determined in methanol extract of *C.spongosium* (IC50: 333,16±0,74µg/ml).metal chelating activity of *C.spongosium* were obtained in hexane (IC50: 327,15±0,63 µg /ml), in methanol extract (IC50:343,27±0,58 µg /ml) and water extract (IC50: 710.25±0.73 µg/ml) at different values. The highest CUPRAC activity value was observed in the methanol extract (IC50: 207,69±0,10 µg/ml). DPPH radical scavenging activity tests did not show any significant activity in any extract of *C.spongosium.* As a result of the evaluations, it was thought that the differences in the antioxidant, activities of macroalgae were caused by the secondary metabolites of different structures of the algae extracts. We believe that this study can constitute a new step in understanding the health benefits of macroalgae and can be accepted as an important alternative for functional components in food and medicinal drugs.

Keywords: antioxidant activity, DPPH$^{\bullet}$, ABTS$^{\bullet+}$, CUPRAC, macroalgae.

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Oral Presentation

Screening of *Dunaliella salina* moieties for Myocardial Infarction: A Computational Study

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Abstract:

Either of the prime causes for death embrace cardiovascular complications that flexes from adolescence to senescence, irrespective of the age anticipated due to unhealthy lifestyle of a sole. The adverse reactions of currently marketed medications need to substitute by novel optimistic therapeutics for its superior mechanism of action than that of the noxious antidote. One of the Noncommunicable, Cardiac complication disease/disorder is Myocardial Infarction which occurs due to integration of genetic and environmental factors along with physiological and behavioral factors. Recent studies have shown promising results in using algae as an effective form of medication for cardiac complications. The present study aims explore the possible mechanism of *Dunaliella salina* for the treatment in Cardiac complications. Molecular docking a standard procedure where the favored orientation of one molecule to another is predicted by this technique where a ligand and a target are bound to one another to form a stable complex. The isolated moieties of *Dunaliella salina* - Zeaxanthin, Camphol, β-carotene, 2,6-Diethypyrazine, α-Ionone, β-Ionone, β-Cyclocitral were docked against targets: Integrin AlphaIIbBeta3, Coagulation Factor II Thrombin Receptor, Lymphotoxin Alpha and Complement component 5. The results showed that *Dunaliella salina* moieties Zeaxanthin and β-carotene had highest binding affinities when compared to other moieties against the selected targets. The target Complement component 5 manifested as better than the other selected targets for Zeaxanthin and β-carotene moieties. The docking score and the amino acids interactions of the test moiety were compared to the standard drug. ADMET properties of the test moiety were predicted using SWISSADME. Molecular dynamics simulation of 100ns was carried out for the selected complex which revealed the selected drug retains its stability. This indicates, the selected *Dunaliella salina* moieties has the potential to mimic the standard drugs action. Consequently, this *Dunaliella salina* may be a suitable form of treatment for Myocardial Infarction. It is possible to assess the *Dunaliella salina* moieties medicinal efficacy in Myocardial Infarction disease/disorder using *in vitro* and *in vivo* models.

Keywords: Myocardial Infarction, *Dunaliella salina*, Beta-carotene, Zeaxanthin, Molecular docking

Third International Congress on Biological and Health Sciences
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Oral Presentation

Identification of Potential Lead for Aldose Reductase Enzyme in the treatment of Cataract: A Computational and Experimental Approach

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Abstract:
Aldose reductase (AR) is a vital enzyme involved in the polyol pathway responsible for the development and progression of diabetic cataracts by the accumulation of excess sorbitol. It is one of the leading causes of visual impairment and blindness globally. Despite the variety of drugs that have been developed to inhibit the aldose reductase enzyme; however, they are associated with numerous adverse effects and poor pharmacokinetics. Thus, there is a need for a new drug to inhibit the aldose reductase enzyme to treat diabetic cataracts. Drug repurposing was carried out to identify a potent lead to treat Diabetic cataract based on the docking studies 10 FDA-approved drugs was found to show high binding affinity with AR. ADMET studies were carried out for all 10 drugs all the compound satisfies the Lipinski rule of 5 except a few drugs. Diatrizoate, Lipoic acid, Caffeine, and Torsemide were the top 4 drugs with high binding affinity and standards were selected to carry out the MD simulations. Caffeine was found to be more stable in AR enzyme. Quercetin and caffeine were further evaluated for *in vitro* efficacy. In vitro study indicates that caffeine possesses anti-cataract activity due to its antioxidant activity by increasing the level of antioxidant enzymes and also by preventing protein aggregation and accumulation of sorbitol in glucose-induced cataract lenses which might be useful in the prevention of cataracts. The present study shows that Caffeine was able to prevent cataracts by preventing opacification and the formation of polyols these drugs developed as a potent therapeutic agent against diabetic cataracts and other diabetic complications by inhibiting the AR enzyme. Hence, Caffeine can be further evaluated for its anti-cataract potential by using an *in-vivo model*.

Keywords: Cataract, Molecular docking, Molecular dynamics, caffeine

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Oral Presentation

Are Eating Behaviors Associated with the Premenstrual Syndrome Among Students of the Health Sciences Faculty?

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Abstract:
Premenstrual syndrome (PMS) is a prevalent disorder in reproductive age and is associated with eating behaviors. Current literature indicates that dietary behaviors are significantly related to PMS and body composition. This descriptive cross-sectional study aimed to determine the relationship between premenstrual syndrome and eating behavior. We recruited 189 undergraduate female students aged 18-24 years at the health sciences faculty of a state university in Turkey. We excluded students with chronic diseases, psychiatric diseases, or a history of severe childhood trauma, following a special diet, or taking hormone therapy in the last two months. We determined PMS using PMS Scale-2006. We recorded students' sociodemographic characteristics and used a three-factor eating scale. We measured the weight, height, waist, and hip circumference. In addition, we used the bioelectrical impedance to assess their body composition. In this study, the prevalence of premenstrual syndrome was 66.7%. The mean age and BMI of individuals among groups were similar ($p>0,05$). Of the 189 university students, uncontrolled eating (21.3±6.48, 17.1±5.98 scores, respectively) and emotional eating behaviors (14.3±5.62, 10.6±4.80 scores, respectively) were significantly higher among the group with PMS than the group without PMS ($p = <0.001$). We determined that body fat percent, waist, and hip circumferences were positively related to uncontrolled eating, cognitive restriction, and emotional eating behaviors ($p<0,05$). In conclusion, we suggest that premenstrual syndrome is common among health science students and associated with eating behavior. We recommend raising awareness among female students that lifestyle, especially maintaining healthy body composition, controlling body weight, and reducing unhealthy eating behaviors, can affect PMS.

Keywords: body composition, eating behavior, premenstrual syndrome, university students

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Oral Presentation

Exploring the possible mechanism of Capsaicin in the treatment of Breast Cancer: A Computational Approach

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Abstract:

Breast cancer is one of the most malignant neoplasms worldwide and the second leading cause of cancer death in women, exceeded only by lung cancer. This study aims to explore the possible mechanism of the selected phyto-constituent Capsaicin moiety in treating Breast Cancer through a Computational approach. Target proteins in complex with the standard drugs which are related to Breast Cancer were retrieved from PDB. The retrieved proteins were preprocessed and the docking was performed using AutoDock 4.2. The docking score and the amino acid interactions of the test moiety were compared to the standard drug. ADMET properties of the test moiety were taken using SWISSADME. Out of all the selected proteins C-Src Kinase, Progesterone Receptor and Estrogen Receptor proteins have shown the closest docking scores compared to the standard drugs and have retained the key amino acid interactions. A molecular dynamics simulation of 500ns was carried out for the C-src Kinase complex which revealed the Capsaicin drug retains its stability throughout the stimulation, but the other two receptors are not stable at 200ns stimulation. This interaction of Capsaicin on the C-Src Kinase receptor indicates the selected Capsaicin moiety has the potential to mimic the action of standard drugs' protein pathways. Thus, may be a possible candidate for the treatment of Breast Cancer. The Capsaicin moiety can be further tested for its therapeutic activity in Breast Cancer using *in vitro* and *in vivo* models.

Keywords: Breast Cancer, C-src Kinase, Molecular Docking, Molecular Dynamics, Capsaicin

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Oral Presentation

Evaluation Biochemical Parameters in Cattle Vaccinated with Foot and Mouth Disease Vaccine and Lumpy Skin Disease Vaccine

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Abstract:

Foot-and-mouth disease (FMD) is the most economically important viral disease of cattle, caused by FMD virus (FMDV) and is characterized by fever, depression, anorexia, and excessive stingy or foamy salivation with vesicles or blisters appearing on the tongue. Some infected animals remain symptomatic, but they carry the virus and can transmit it to other animals. The disease is generally not fatal. Lumpy skin disease (LSD) is a highly infectious disease of cattle caused by a virus belonging to the Capripoxvirus genus of the family Poxviridae. LSD is an emerging viral disease of cattle, which is characterised by fever, enlarged lymph nodes, and nodules on the skin, mucous membrane and internal organs. The aim of this study was to determine the serum levels of vitamins A, C, and E in cattle with FMD and in cattle that vaccinated with FMD and LSD vaccine. The study material consisted of 10 cattle previously diagnosed with FMD, 15 cattle that received FMD vaccine and LSD vaccine, and 15 cattle that received only FMD vaccine. It was tested by taking serum samples from 0-1 and 1-3, <3-year-old cattle between 2018-2020 in Afyonkarahisar province cattle farms. Animals were grouped according to their sex, vaccination status and health or previously diagnosed with FMD. Results of the biochemical analysis of blood sera were analysed statistically and evaluated. As a result of the study, serum Vit E levels were significantly lower in 0-1-year-old animals in vaccinated FMD vaccine. Serum Vit A and C levels in 1-3-year-old animals with a previous FMD history were significantly lower than those determined in healthy animals. A significant difference was detected in serum Vit A values of animals vaccinated with LSD and FMD vaccine.

Keywords: Foot-and-mouth disease (FMD), Vit A, C and E, LSD vaccine, FMD vaccine

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Oral Presentation

Evaluation of antiurolithiatic activity of *Illicium verum* HOOK. F. fruit by in-vitro methods

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Abstract:

Urolithiasis is a polygenic disorder with complex etiology and complicated treatment outcomes. Urolithiasis is a common urological disorder responsible for serious human affliction. It is a condition where excessive oxalate is present in the urine. Aim of present study is **t**o evaluate antiurolithiatic activity of *illicium verum* Hook. f. fruit by in vitro methods. objectives include to collect, identify, and authenticate the selected herbal drug, to perform phytochemical screening of extract and fractions, To prepare ethanol extract followed by fractionation. Methods include nucleation and aggregation assays, in this the effect of extract to CaOx crystal aggregation was determined. Ethanol extract displayed antilithiatic activity in nucleation, aggregation assay while residual aqueous extract displayed antilithiatic activity only in aggregation assay. Hence, based on the numerical values of various *in-vitro* assays performed, it can be concluded that *Illicium verum* Hook.f. possess antilithiatic activity.

Keywords: *Illicium verum*, Antiurolithiatic activity, Urolithiasis, Star anise

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Oral Presentation

Isolation and identification of *Listeria* spp. from brain tissue samples of slaughtered cattle in Afyonkarahisar

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Abstract:

Listeria monocytogenes is a foodborne human pathogen responsible for invasive infections, overall presenting a high mortality. A wide variety of animal species can be infected with *L.monocytogenes*, but clinical listeriosis is mainly a ruminant disease, with occasional sporadic cases in other species. It is a sporadic disease of ruminants that causes meningoencephalitis, septicemia and abortion. The purpose of the study of microbiological and histopathological the presence of *Listeria* spp., in fifty brain tissue samples collected from cattle in Afyonkarahisar and its region. In this study; a total of 50 brain tissue samples were collected to different age from cows in slaugterhause in Afyonkarahisar provinces. The samples were incubated at 30 °C for 4 hours before adding the inhibitory substance to the Listeria Enrichment Broth. At the end of this period, inhibitory substances were added and incubation was continued for 44 hours at 30 °C. Chromogenic media such as Oxford Agar, PALCAM Agar were used as selective agar media for isolation. After 24 hours incubation at 35 °C, suspicious colonies were transferred to Tryptone Soy Agar with Yeast Extract. Typical colonies were used in identification tests. The isolates were identified with the Listeria latex agglutination test kit, using the VITEK-II compact automatized system device and classical biochemical tests. Two of the brain (4 %) tissue samples from were identified as *L.monocytogenes* by standard microbiological and biochemical methods. Histopathological examination was also performed. Focal mononuclear cell infiltration was observed in the brain tissue by microscopic evaluation of the sections stained with Hematoxylin-Eosin. The antibiotic susceptibility profiles of each isolate were determined by the disk diffusion method using. Kirby Bauer method was applied to study *L.monocytogenes* sensitivity against 6 antibiotics. The isolates were found susceptible against ampicillin, gentamicine, ciprofloxacin and Penicillin G. One isolates were found to be resistance to tetracycline and erythromycin.

Keywords: *Listeria* spp., cattle, brain, identification, antimicrobial resistance

[#]This study is supported by Afyon Kocatepe University Scientific Research Projects Coordination Unit. Project Number: 17.MYO.06

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Oral Presentation

Evaluation of Enzyme Inhibition and Antioxidant Properties of the Samples of Propolis Collected from Bayburt Region

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Abstract:
Propolis is a substance that contains a mixture of different parts of wax and resin collected by honey bees. Propolis contains many compounds with a wide variety of biological and pharmacological activities. Studies on total phenolic substance level, total flavonoid level and total antioxidant levels in its content are evaluated in many studies in the world and in our country.In this study, 23 propolis samples collected from the Bayburt region were used, and total phenolic (TP) and total flavonoid (TF) profiles and antioxidant activities were evaluated. For this purpose, 2,2'-azinobis (3-ethylbenzothiazoline)-6-sulfonate (ABTS) test and ferric reducing antioxidant potency (FRAP) test and 1,1-diphenyl-2-picrylhydrazy (DPPH) test were used, and angiotensin converting enzyme inhibitory activity (ACE-I) and Hyaluronidase inhibitory activity levels were measured. The values determined in the analysis of propolis samples taken from the Bayburt region were 36.98±7.1 mg GAE/mL for TF, 65.99±6.55 mg QE/mL for TP and 581.91±56.24 mM TE/mL for FRAP and 28.87±3.92 mM TE/g for ABTS and 11.93±0.78 mg/mL for DPPH IC50 and 92.12±4.52% for ACE-I activity and 13.02±0.7% for hyaluronidase inhibitor activity. As a result, in our evaluations of the bioactive properties of propolis samples, it was concluded that these propolis samples taken from the Bayburt region may be a useful option for the use of food, pharmaceutical and cosmetic companies and may reduce the possibility of disease that may occur due to oxidative damage.

Keywords: Propolis, Bayburt, Enzyme Inhibition, Antioxidant Properties

[#] This study supported by TUBİTAK 2209 Scientific Activities Support Program (Project no: 1919B012208939).

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Oral Presentation

HORSE EVALUATION FORM TO BE USED IN HIPPOTHERAPY APPLICATIONS [#]

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Abstract:
The positive results of hippotherapy practice sessions are known with academic studies that are beneficial on disabled individuals and individuals in need in the world. Achieving positive and successful results in hippotherapy applications can be achieved through the proper use of horses in sessions. In recent years, there has been a noticeable increase in the opening and implementation of hippotherapy centers in private and public institutions in Turkiye. With these increases, the importance of the horse to be used with the increase in the need for horses in hippotherapy applications depends on choosing the right horse and determining its suitability. Choosing the right horse and determining its suitability increase the efficiency of horse trainers and work team working in the field of hippotherapy and can minimize the risks that may arise. Having an evaluation form for horses used or to be used in hippotherapy centers in private and public institutions in Turkiye, it can be ensured that the practice sessions of disabled individuals and individuals in need receive healthy and safe service. In this study, an evaluation form was used to determine the characteristics of the horse to be used in hippotherapy practice sessions for horse trainers, veterinarians, farriers, side handles, tow trucks, grooms, volunteers and health personnel working together in order to provide comfortable service to the disabled and needy individuals from hippotherapy centers.

Keywords: assessment form, hippotherapy, health, horse, trainer

[#] Let's Develop Networks and Create opportunities for Hippotherapy (Hippotherapy Türkiye) project center funded by European Union 30.12.2019-IPA/2019/413-002

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Oral Presentation

EXAMINATION OF LONGEING AREAS IN HORSE TRAINING AND HEALTH [#]

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Abstract:

In equestrian sports activities, it is important for individuals to spend their free time productively and for individuals with special needs and needs to complete their equestrian activities in safety and confidence in hippotherapy sessions. Individuals who practice on horses should not encounter any accident on or near the horse. For this, it is essential to ensure the continuity of the training and health of the horses. Ensuring this continuity is among the duties of the trainers and veterinarians in equestrian clubs and hippotherapy practice facilities where individuals perform their equestrian practices. In order for the horses to complete their initial and basic training safely, there must be a longer area. In order to plan and arrange the long areas in the riding club and hippotherapy practice facilities and to ensure the continuity of the service in a quality way, the long area must meet certain standards. For this reason, as a research subject, it has been tried to determine the characteristics of the longing areas for horse training and health in the equestrian club and hippotherapy practice facilities in Turkiye.

Keywords: equestrian facility, hippotherapy, horse, longeing, rider

[#] Republic of Turkiye Ministry of Foreign Affairs European Union Education and Youth Program within the scope of the Project "Training Young Horse Practitioners with Innovative Methods" 2022-1-TR01-KA220-YOU-000089126.

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Oral Presentation

Can Stem Bromelain, a Pineapple Waste Product, Be Used As a Drug Alternative? A Mechanistic Insight Into Protein–Protein Interactions

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Abstract:

Stem bromelain (SB) is a mixture of cysteine protease and non-protease components that is extracted from the pineapple plant (Ananas comosus). It has several therapeutic applications, such as antithrombotic, anti-inflammatory and anticancer. It also relieves osteoarthritis, diarrhea and various cardiovascular disorders. Bovine serum albumin (BSA), a blood plasma protein, is used as a model transport protein for studying protein folding and ligand binding mechanisms. We investigated the interactions between SB and BSA using fluorescence, isothermal titration calorimetry (ITC), circular dichroism (CD) techniques. The fluorescence results indicate that the fluorescence intensity of native BSA was quenched with increasing concentration of SB, with a blue shift in its wavelength maxima. The binding constant (K_b) was found to be on the order of 10^6 , which is greater than that of protein–drug interactions; this reflects that SB can be used as an alternative to drugs in treating various diseases. The thermodynamic parameters obtained from isothermal titration calorimetry suggest that hydrophobic interactions play a major role in the association process, and it is an entropically driven process. The CD spectroscopic result confirmed conformational alteration in BSA in the presence of SB resulting in unfolding of the native structure of BSA. This study is expected to provide important insight into the binding mechanism of SB with BSA, which may be useful in the pharmacology and clinical medicinal fields.

Keywords: Stem Bromelain, BSA, ITC, Fluorescence, CD

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Oral Presentation

Protective Effect of Magnolin on Oxidative Stress in Rats Caused by Acute Cyclophosphamide Exposure [#]

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Abstract:

The chemotherapeutic agent cyclophosphamide (CP) causes oxidative stress and tissue injury. In the current study, the protective effect of magnolin (MAG) against CP-induced oxidative stress and its role in *Nrf2/HO-1* signaling was investigated. Rats were treated with MAG (1 mg/kg, ip.) for 14 days and received CP (75 mg/kg, ip.) on day 14. CP increased tissue damage manifested by an elevation of transaminases (aspartate and amino), alkaline phosphatase, and kidney parameters (blood urea nitrogen and creatinine). Also, 8-hydroxy-2-deoxyguanosine and malondialdehyde levels were increased and glutathione and activities of antioxidant enzymes (superoxide dismutase and catalase) were decreased in CP-administered rats. In addition, CP upregulated the inflammatory markers (*Nrf2*, *HO-1*, *NQO-1*, *IL-6*, *iNOS*, *Cox-2*, *TNF-α, IL1-β,* and *NFκB*), along with the pro-apoptotic (*Bcl-2*, *Bax*, and *Cas-3*). CP also caused histopathological alterations in tissues. MAG treatment ameliorated parameters of biochemical and oxidative stress and prevented histopathological changes in CP-treated rats. Moreover, MAG suppressed the expression of inflammatory cytokines and apoptosis. In conclusion, MAG is effective in preventing CP toxicity by attenuating oxidative stress, inflammatory response, and apoptosis. Therefore, the protective efficacy of MAG was associated with the upregulation of *Nrf2/HO-1* signaling.

Keywords: Cyclophosphamide, magnolin, oxidative stress, *Nrf2/HO-1*, apoptosis, rat.

[#]This study was financially supported by the Afyon Kocatepe University Scientific Research Council, Afyonkarahisar, Turkey (Project no: 21.VF.01).

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Oral Presentation

The Investigation of Potential Protective Effect of Resveratrol Against Dichlorophenoxyastic Acid Herbicide (2,4 D)-Induced Rats

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Abstract:

This subchronic toxicity study was aimed to determine the effect of resveratrol (RES) against dichlorophenoxyacetic acid herbicide (2,4-D) induced oxidative stress and histopathological changes in blood, liver, kidney, heart, and brain tissues of rats . Twenty-eight male Wistar rats were divided randomly into four equal groups. Group I (control group) was given standart rodent diet and water ad libitum for eight weeks. Group II, RES group (20 mg/kg), group III (2,4-D), 50 mg/kg 2,4-D, group IV (2,4-D+RES), RES (20 mg/kg) and 2,4-D (50 mg/kg). The treatments were administered orally by gastric gavage once daily for eight weeks. 2,4-D significantly increased malondialdehyde levels in blood, liver, kidney, heart and brain tissues while reduced glutathione levels in the tissues. Also SOD and CAT activities of blood, liver, kidney, heart and brain tissues were decreased. In contrast, RES administration reversed 2,4-D induced oxidative stress and lipid peroxidation. Moreover, RES also exhibited protective action against the 2,4-D induced histopathological changes in rat tissues. It was concluded that RES is effective in protecting rat tisuues against 2,4-D induced oxidative stress and increase the activity of the antioxidant defence system as well as an inhibition of lipid peroxidation and regenerated liver, kidney, heart and brain tissues in Wistar rats.

Keywords: 2,4 D (Dichlorophenoxyacetic acid), herbicide, resveratrol, oxidative stress, rat

*This study was supported by Afyon Kocatepe University Scientific Research Council, Afyonkarahisar, Turkey (Project no: 16.MYO.03)

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Oral Presentation

Comparative study of Vertebral Column of Emu and Domestic Fowl

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Abstract:
The present research was conducted to compare vertebral column of emu and domestic fowl. The study revealed that cervical vertebrae were 14 in fowl and 17 in Emu. The cervical ribs were present ventrally with pointed free ends in fowl which were comparatively thickened in emu. Thoracic vertebrae were nine and freely movable in emu whereas these were seven in fowl, out of which 1st and 6th were free, and second to fifth were fused to form notarium. First thoracic vertebrae had bifid spinous process which gradually increased from first to last in Emu. The ventral spinous was well developed in the first two thoracic of Emu and in all the thoracic vertebrae in fowl. The lumbosacral mass was formed by 18 vertebrae (last thoracic, six lumbar, ten sacral and first coccygeal vertebrae) in emu. The synsacrum was formed by fusion of 16 vertebrae (last thoracic, 14 lumbar and sacral and first coccygeal vertebrae) in fowl. There were five coccygeal vertebrae in emu out of which the last three were fused and boat shaped whereas there were seven coccygeal vertebrae in fowl and last four were fused together to form triangular pygostyle. There were ten pairs of ribs in Emu and seven in fowl. The first, second, third, ninth and tenth were floating ribs and fourth, fifth, sixth and seventh and eighth were true ribs with a vertebral and a sternal in Emu whereas only first and second are floating ribs in fowl. The sternum of emu was large broad and bowl shaped located at antero-ventral aspect of the body cavity. The dorsal surface was concave and ventral surface was convex without keel in Emu, but boat shaped with prominent keel in fowl. Antero-lateral process was directed upward in Emu but was divided in two parts in fowl. There were five pairs of articular facets on either side for attachment of sternal ribs in emu and four pairs in fowl. The uncinate processes present in rib of fowl was absent in Emu. There was pneumatic foramen between head and tubercle in emu but not in fowl

Keywords: domestic fowl, emu, vertebral column
*Presenting author

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Oral Presentation

Multiresidue analysis of anabolic hormones in urine with method LC-MS/MS

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Abstract:

Steroids are anabolic hormones that are prohibited by law under the European Commission Directive 96/22/EC. Also, the use of steroids in sports and sports activities is prohibited. For this reason, methods have been validated for the identification of these compounds in different instrumental methods. Gas-chromatography-Mass spectrometry was the most traditional analysis, but with the new studies, the most practical, more precise, and faster identification is achieved with the LC-MS/MS method. One of the methods is QuEChERS ('Quick, Easy, Cheap, Effective, Rugged and Safe'), for which concluded that it is reliable for detecting prohibited anabolic agents in red meat tissue. For the identification of 17β-boldenone using boldenone-d3 as an internal standard, for the validation of anabolic hormones, the decision limit (CCα) and detection ability (CCβ) were determined according to the regulations of the European Union (European Union Decision 2002/657/EC). CCα and CCβ are two performance characteristics for banned substances. Based on the achieved results, a method will be validated for the identification of A3 steroids in urine from animals with multiresidue isotopic markers, the presence of which can threaten the lives of citizens in the Republic of North Macedonia.

Keywords: steroids, hormones, LC-MS/MS,

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Oral Presentation

Sero-prevalence and Risk Factors of Toxocariasis in Nomadic Communities of Multan-Pakistan

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Abstract:

Toxocariasis is an important but neglected tropical disease affecting both animals and human beings globally. It is highly prevalent in tropical and subtropical regions, particularly in developing countries with a close relationship between human beings, soil, and dogs. In Pakistan, epidemiological studies on toxocariasis are scarce among the general public especially in socio-economically deprived communities. Keeping in view, this study was conducted to rule out the seroprevalence and associated risk factors of toxocariasis in nomadic communities of Multan, Pakistan. For this purpose, a total of 184 blood samples were collected from target nomadic communities. The descriptive epidemiological data was collected from all participants, using pre-designed questionnaires. Prior consent was also sought from all the participants to use their data for research purpose. All the samples were analyzed for the detection antibodies against *T. canis* by using commercial ELISA kits (Bordier Affinity Products, Switzerland). Results revealed an overall 27.7% (51/184) seroprevalence rate of toxocariasis in target communities of study area. Risk factors including age, known disease history, nutritional status, contact with dog, consumption of unwashed vegetables, body mass index and drug abuse/addiction were found to have significant association ($P<0.05$) with seroprevalence of toxocariasis in nomads of study area. On the other hand, some factors such as sex of participant, marital status, educational status, awareness about zoonotic diseases, drinking water source, occupation, location, hand washing after contact with soil and dogs, and personal hygiene did not show any significant association ($P>0.05$) with seroprevalence of toxocariasis. Based upon findings of this study, it was concluded that toxocariasis is endemic in nomadic communities of Multan, Pakistan. Therefore, it is recommended that large scale surveys should be conducted to assess the exact load of disease at national level and to include nomadic communities in regional and international disease control programs through awareness campaigns and provision of better healthcare facilities.

Keywords: Seroprevalence, Toxocariasis, Nomadic communities, Multan-Pakistan

POSTER PRESENTATIONS

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Antibacterial activity of essential oils of *Thymus vulgaris* and *Syzygium aromaticum* on the digestive carriage of *Escherichia coli* producing extended spectrum β-lactamases and multi-resistant in poultry in Algeria.

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Abstract :

The emergence of bacterial resistance is a real problem in veterinary and human medicine, and can pose serious threats to public health. The search for new alternatives is of great importance in human and animal health. This work aimed to evaluate the antibacterial activity of essential oils of Thymus vulgaris and *Syzygium aromaticum* on ESBL-producing and MDR *Escherichia coli strains* from poultry. A total of 100 cloacal swabs of broilers and broiler breeders were collected in different farms in the province of Batna. Isolation was performed on Hektoen agar and identification by API 20E gallery. The antibiogram was performed according to the disc diffusion method against 12 antibiotics and the results were interpreted according to the CLSI guidelines (2021). The search for ESBL strains was carried out by the synergy test according to Jarlier and confirmed by the double disc test. The antibacterial activity of essential oils was tested by the aromatogram on all MDR and ESBL strains.
A total of 70 *E.coli* strains were isolated. Our results show high levels of resistance to tetracycline, amoxicillin,nalidixic acid. Medium percentages are reported for sulfamethoxazole, chloramphenicol and low frequencies of resistance for cefotaxime, Amoxicillin-clavulanic acid, Aztreonam. On the other hand, The highest sensitivity was recorded for Gentamycin, Streptomycin, Imipenem and Ceftazidime. Therefore, 30 of the 70 isolates (42.85%) had a multidrug resistant (MDR) phenotype. 4 *E. coli* isolates (5.71%) were confirmed as ESBL producers. The essential oils tested show strong antibacterial activity on the strains tested with the highest activity revealed for *tymus vulgaris*.
The essential oils tested showed a high antibacterial activity and could be an effective alternative to prevent bacterial resistance.

Keywords : *E. coli*, Avian, Essential oil, Antibiotic resistance, MDR, ESBL.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Unexpected cross-reactıon wıth *Honıgbergıella*-like DNA ın a PCR for detectıon of bovıne *Trıtrıchomonas foetus*

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Abstract:

The prevalence of bovine Tritrichomonas foetus infection has decreased almost to zero in most of the European countries, such as Poland, which has been Tritrichomonas foetus-free since 1997. Nevertheless, trichomonosis is a notifiable disease and is one of the diseases listed by the WOAH. Due to the unspecified symptoms, it is very difficult to diagnose bovine trichomonosis based on clinical signs only. The standard diagnostic methods are: microscopic observation (with or without prior cultivation on media) and molecular tests.

However, correct T. foetus microscopic identification based only on the morphology of the parasite and its characteristic "rolling motion" has its limitations, such as relatively low sensitivity and accuracy. The major disadvantages of the molecular tests are cross-contamination and carry over of amplicons which can lead to the misinterpretation of results. Moreover, PCR can also amplify fragments from the other microorganisms, and thus false-positive results had been noted. In this context, here we present a case of an unspecific reaction with Honigbergiella-like DNA identified during a routine microscopic examination and identified using molecular methods. The bovine sample was submitted to Department of Parasitology National Veterinary Research Institute (NVRI) for confirmatory testing after examination at the Regional Veterinary Laboratory, during a routine T. foetus diagnosis. In our study we used conventional PCR according to Felleisen which amplified the fragment specific to T. foetus (347bp). Positive results from microscopic observation and cultures were confirmed. Noteworthily, parasites grow on Diamond's medium only after seven days of incubation, while optimal growth of trichomonads is generally observed after two to four days. Moreover, by using PCR we obtained positive results for the presence of T. foetus.

However, sequencing of the amplification product revealed 99.62% identity with Honigbergiella sp. Our data suggest that false-positive results may occur in commonly used PCR tests. Thus, unexpected results should be carefully interpreted. Therefore, it is important to share the research involved in the diagnosis of trichomonosis, especially in relation to the possible use of non-specific PCR products.

Keywords: false positive results, PCR, microscopic examination, identification, *Tritrichomonas foetus*

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Lethal and sublethal doses of imidacloprid alter the expression of genes related to circadian rhythm in *Apis mellifera*

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Abstract:

Bees are important pollinators for ecosystems and agriculture, but their populations have suffered a decline that may be associated with several factors, including habitat loss, climate change, increased vulnerability to diseases and parasites, and use of pesticides. Neonicotinoids are nicotinic cholinergic receptor agonists and lethal and sublethal exposures are linked to reduced survival and various negative effects on bees. Honeybees are highly dependent on circadian clocks to regulate essential behaviors such as: foraging orientation and navigation, memory for food sources, sleep and learning processes, and neonicotinoid pesticides can cause alterations in the circadian rhythm of insects. Neonicotinoids interrupt circadian rhythms and sleep in bees, probably by abnormal stimulation of biological clock neurons, potentially impairing navigation, temporal memory, and social communication in bees. In this study Africanized *Apis mellifera* bees in the foraging phase were fed syrup contaminated with lethal dose 0.1079 µg/bee or sublethal 0.0011 µg/bee of imidacloprid from formulation SIGMA® (nº 37894) for 4 hours. After this period, the brain transcriptome of these individuals was performed, and the results were contrasted with the control group. The results showed that lethal and sublethal doses after exposure for a period of 4 hours altered the regulation of the circadian clock-controlled protein gene that is related to circadian rhythm processes. It is possible to conclude using genomic analysis techniques that neonicotinoid pesticides such as imidacloprid alter the expression of genes linked to the circadian rhythm in Africanized *Apis mellifera* bees.

Keywords: circadian Rhythms; honeybee; neonicotinoid; transcriptome

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Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Expression of the catalase gene in honey bees exposed to sublethal doses of the insecticide fipronil

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Abstract:

Brazil is one of the largest consumers of pesticides in the world, such as fipronil, which, despite being banned in several countries, presents a growing consumption in the country. Its indiscriminate use can favor the contamination of bees, both directly (when the foragers bees at the same time of spraying) and indirectly (when they collect contaminated resources and take them to the colony). The contamination of bees by pesticides can lead to oxidative stress, negatively affecting the enzymes of the antioxidant system, such as catalase, responsible for breaking down free hydroxyls. Thus, the objective of this study was to evaluate the expression of the catalase gene in bees exposed to a sublethal dose of the insecticide fipronil by means of an ingestion test. For the study, bees were collected in the forager phase from 10 different colonies, previously marked in the region of the pronotum. These bees were taken to the laboratory, anesthetized at low temperature, kept fasting to empty the contents of the nectary vesicle and distributed in petri dishes perforated for ventilation. Then they received honey syrup contaminated or not with the sublethal dose of the insecticide fipronil (0.0019 µg/bee) for a period after 1 hour, and were then removed and prepared for transcriptome analysis. According to the results, an increase in catalase gene expression was observed in bees exposed to a sublethal dose of the insecticide fipronil, compared to the control. The insecticide was able to induce oxidative stress in foragers bees, which explains the increase in the expression of the catalase gene, considered as a biomarker of oxidative stress, besides being responsible for converting hydrogen peroxide into water and oxygen and promoting cell detoxification, therefore the increase in its expression demonstrates the action of the antioxidant system against the stressor agent. Thus, fipronil was able to negatively affect the antioxidant system of bees.

Keywords: Antioxidant system, beekeeping, pesticide and transcriptome.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

A Sublethal Dose of the Insecticide Fipronil Affects Olfactory Genes of Africanized Honey Bee

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Abstract:

The objective of the study was to identify the differential gene expression related to olfaction of africanized *Apis mellifera* bees at the foraging stage after acute exposure to sublethal dose of the insecticide fipronil. The bees were collected from their respective colonies and conditioned in petri dishes perforated for ventilation and kept fasting for a period of three hours to empty the contents of the nectary vesicle; subsequently, they were subjected to ingestion of honey syrup contaminated with the sublethal dose (DSub) of the insecticide fipronil (0.0019 µg/bee) for one hour (acute insecticide exposure). The control treatment received only honey syrup. Afterwards, syrup consumption per bee was measured and the bees' brain tissue used for transcriptome analysis. Bees of the control treatment consumed a greater amount of the syrup (38.49 ± 3.24 µL/bee), when compared to bees that consumed syrup with fipronil DSub (21.41 ± 6.43 µL/bee). Regarding gene expression, changes in nine genes associated with bee olfaction were observed. Excepting *CSP1* gene, the other genes associated with bee olfactory receptors belong to the odorant binding protein (OBP) family. Relating to gene expression, only *Obp14*, *Obp16* and *Obp21* were upregulated; the other genes showed a downregulation. The decreased expression in most bee's olfaction genes shows that sublethal doses of fipronil cause decreased odor uptake by bees, which may affect food recognition and foraging activities. Acute exposure via ingestion of a sublethal dose of the insecticide fipronil affected nine genes responsible for olfactory perception of Africanized *A. mellifera* in the foraging phase.

Keywords: pesticides, acute-exposure, transcriptome.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Obtaining the Extracts from *Schisandra chinensis* Fruits from Different Geographical Locations in China and Poland

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Abstract:

Schisandra chinensis is a plant whose fruits have high potential and beneficial health effects. Research has demonstrated that the pharmacological effects of *Schisandra chinensis* are attributed to its bioactive components. *Schisandra chinensis* and *Schisandra sphenanthera* both belongs to *Schisandra* genus, but the bioactive components of the two species are quite different. However, research on the bioactive components of *Schisandra* genus are still insufficient and deserve further studies, especially the factor of the geographical location of the growth on the bioactive components of *Schisandra chinensis*. Polysaccharides are the main kind of bioactive components and also are important biomacromolecules for life's activities, whose structure is closely related to biological activity. The objective of this work was to prepare *Schisandra chinensis* extracts (SCE) from fruits growing in different geographical locations in China and Poland and compare their chemical constituents and contents of the main bioactive components. The fruit of *Schisandra chinensis* were extracted with 1:10 (liquid to solid ratio) distilled water at 90 ℃ for 5 h for three times. The SCE was dried using freeze vacuum drying. Ultrasound-assisted extraction of polysaccharide from *Schisandra chinensis* using water extraction and alcohol precipitation method. The active constituents were compared and analyzed with UV detection and acid-base titration. The extraction yield of SCE in different provinces from China were 10.17%, 9.04%, 8.42%, respectively. The extraction yield of SCE from Poland was 6.30%. Results indicated the polysaccharides were the highest contents of bioactive components. The extraction yield of *Schisandra chinensis* polysaccharides was 13.12%. The chemical constituents will be tested using HPLC–UV in further experiments. These results point out the slightly differences in bioactive components between 4 kinds of *Schisandra chinensis*. All our preliminary results throw light on the relationship of bioactive components of SCE with geographical locations in which *Schisandra chinensis* grows.

Keywords: *Schisandra chinensis* extract, polysaccharides, bioactive components, extraction.

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Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Standards of Honey Quality in Serbian Legislation

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Abstract:

According to the European Union Legislation and the *Codex Alimentarius*, honey is defined as natural sweet substance produced by honey bees from the plants nectar or from secretions of plants living parts or excretions of plant sucking insects on the living parts of plants, which the bees collect, transform by combining with specific substances of their own, deposit, dehydrate, store and leave in the honeycomb to ripen and mature. The quality of honey and bee products depends on its origin. Active components in plants depend on various factors and climatic conditions in different geographical locations, botanical origin etc. *Codex Alimentarius* presented that chemical characteristic and element concentration of honey must meet the criteria of honey quality. Also, in some counties issued national legislation, decisions and guidelines which correlate with European and International standards. In Serbia honey and other honey bee products must meet criteria according to Official Gazette RS: Rulebook on quality of honey and other bee products, No. 101/2015. Official Gazette RS defined the physicochemical parameters of natural honeys, such as moisture, reducing sugars, sucrose, hydroxymethylfurfural (HMF), free acidity, diastase activity, water-insoluble content and electrical conductivity, and constitute the quality indicators which characterize individual honey varieties. In this paper, we discuss the rules governing regulation of honey in national provisions of different countries taking into account suggestion of the EU.

Keywords: honey; legislation, Codex, EU standards, quality.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Varicocele and Infertility

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Abstract:

Varicocele, which is among the most common causes of male infertility, is the enlargement of the veins in the spermatic cord above the physiological limits. While in some cases it does not cause any problems, in some cases it can damage the testicular tissue and cause infertility. While the rate of male factor in infertility is between 50-60%, this rate is around 35% in varicocele alone. It has been reported that varicocele causes adverse effects on fertility and leads to the production of sperm with damaged chromatin, which can endanger the future health of the offspring. In addition to causing problems in testicular functions, it also creates some problems on the hypothalamo-pituitary-gonadal axis and blood-testis barrier. It has been determined that the testicular temperature of patients with varicocele is higher than that of fertile individuals, and it has been emphasized that this situation increases the number of free radicals and impairs the spermatogenesis process. It has also been suggested that varicocele increases apoptosis and impairs Leydig cell function by suppressing the expression of StAR protein. Considering the importance of testosterone levels for spermatogenesis and fertility, and the decrease in testosterone levels in cases of varicocele, the importance of varicocele in male reproduction will become very striking. It is suggested that hyperthermia, apoptosis, oxidative stress, testicular blood flow, changes in venous pressure, hormonal disorders and renal-adrenal reflux predispose to all these problems. However, there is still no clarity on this issue. Varicocele may decrease sperm quality over time, but it should be noted that not every man with varicocele is infertile. In addition, it is not correct to conclude that all men with varicocele will be hypogonadal. However, it may be correct to say that men with varicoceles are more at risk for hypogonadism.

Keywords: hypogonadism, infertility, sperm, testosterone, varicocele.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Phenolic compounds in honey: A review

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Abstract:

Honey is a natural food, mainly composed of sugars, enzymes, amino acids, organic acids, carotenoids, vitamins and minerals, aromatic substance, flavonoids and phenolic compounds with high biological effects. The aim of this review is to describe the phenolic compounds in honey, their stability and potential as antioxidants. Phenolic compounds are defined as secondary plant metabolites with protective mechanism. Different studies presented a various profile of phenolic compounds in honey as vanillic acid, caffeic acid, syringic acid, þ-coumaric acid, ferulic acid, quercetin, kaempferol, myricetin, pinobanksin, pinocembrin, chrysin, ellagic acid, galangin, 3- hydroxybenzoic acid, chlorogenic acid, 4-hydroxybenzoic acid, rosmarinic acid, gallic acid, hesperetin, benzoic acid and others. In general, the phenolic acids are divided in two subclasses: the substituted benzoic acids and cinnamic acids. The flavones and flavanones present some flavonoids in honey, with high effects to colour, taste and flavor of honey. Behind honey, bee bread is second honey bee products rich in phenolic compounds, the mostly kaempferol, myricetin, luteolin, isorhamnetin, and quercetin. Different studies have described a higher positive correlation between total phenol content and the antioxidant activity of honey, while the color of honey has a stronger correlation with the total flavonoid content. This paper contributes to the knowledge of the phenolic compound of honey.

Keywords: honey; antioxidants; polyphenols; antimicrobial activities, phenolic compounds

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Propolis: physico-chemical characteristics, biological activity and galenic formulation

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Abstract:

Propolis (bee glue) is a beehive product and its biological properties properties have made it exceptionally useful in medicine. The present study was undertaken with the aim to extract biologically active compound such as polyphenols and flavonoids in order to estimate their biological activity, in particular: antioxidant and antibacterial activity in order to obtain a balm based on propolis extracts. This study undertook a physico-chemical analysis to evaluate several physico-chemical properties including, pH and free acidity, moisture content, ash content in propolis extract. Propolis and propolis balm were examined for chemical composition, phenolic and flavonoid content, and antioxidant and antimicrobial potential. Phenolic and flavonoid contents were 242.39 ± 1.116 ug EAG/mg and 79.64 ± 0.140 µg EQ/mg. Propolis and propolis balm showed 90,62 % inhibition of DPPH radical and significant antibacterial activities against target bacteria. It is concluded in this study that several bioactive compounds are present in propolis extract, having good antioxidant, antimicrobial potential which makes propolis an important candidate for pharma applications.

Keywords: Antioxidant activity, Balms, Flavonoids, Polyphenols, Propolis

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Some Enzymes and Oxidative Stress Markers Used in the Diagnosis of Mastitis in Ruminants

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Abstract:

Mastitis, in general terms, is trauma in cows and inflammation of the udder tissue caused by various microorganisms. Mastitis is manifested by physical, chemical, and often bacteriological changes in milk, as well as pathological changes in the breast, such as swelling, sensitivity to touch, fever, edema, and inflammation. Mastitis causes changes in certain enzyme activities and markers of oxidative stress in milk and blood. Many enzyme activities that are naturally present in the structure of milk increase during inflammation. These enzymes are linked to both a decrease in milk yield and an increase in the inflammatory response. Oxidative stress is a disorder caused by an imbalance between the formation of free radicals and the antioxidant system. Oxidative stress is critical in the occurrence of many diseases. In mastitis, during the inflammatory response, neutrophils, macrophages, and other inflammatory cells produce ROS to kill pathogens, and oxidative stress may develop as a result of ROS accumulation. It is an accepted fact that effective treatment of mastitis depends on the correct diagnosis. Determining the effects of the disease, especially on blood and milk serum enzyme parameters, has an important place in the diagnosis, treatment, protection, and follow-up of the course of the disease. In our research, the importance of changes in certain enzymes and oxidative stress markers in milk and blood in animals with mastitis is emphasized. Thus, it is aimed to use these parameters actively in the diagnosis of mastitis and in determining the effectiveness of mastitis treatment in the field of veterinary medicine.

Keywords: mastitis, oxidative stress, enzyme

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ONLINE 14-15-16 APRIL 2023

Poster Presentation

Can marine microorganisms help us fight the influenza virus? - review

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Abstract:

The Orthomyxoviridae family of RNA viruses is responsible for influenza. Both influenza A and B strains induce seasonal influenza illnesses, whereas influenza C typically only results in minor respiratory sickness. Coughing and sneezing can spread the disease, and direct touch can transmit the virus. Although a few authorized anti-influenza drugs accessible such as oseltamivir, amantadine, and rimantadine, are available, due to the expanding drug resistance, they are becoming less efficient and effective. Microorganisms living in the marine environment can produce very unique chemical compounds with potent biological activity, including antiviral. Natural antiviral substances can be used against various viruses pathogenic to humans, including influenza. This review aimed to search for potential anti-influenza properties of different substances derived from marine microorganisms. The literature review was conducted using the PubMed scientific database. All researched studies were published until 5th January 2023. The authors propose a great variety of substances that could be potentially helpful in the fight against influenza. Starting from abyssomycins, polysaccharides, and spirostaphylotrichin, through violapyrones, polyketides indole diterpenoids, finishing with microalgae and cyanobacteria extracts and others. Some of them directly target the viral adsorption and internalization processes, inhibit viral polymerase activity, or stimulate the immune system of the host. In the future, potential drugs that could be used to improve the treatment of influenza are believed to be obtained from marine sources, which could be used for the creation of innovative pharmaceuticals. The authors of the studies strongly advise additional in vitro and in vivo research on substances with potential antiviral properties.

Keywords: marine, influenza, microorganisms

Third International Congress on Biological and Health Sciences
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Poster Presentation

Evaluation of the use of marine-derived compounds in the development of drugs against SARS-CoV-2

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Abstract:

Natural sources are known as abundant in various active compounds, being concerned as an origin of many development directions in medicine. Oceans are an underexplored, rich source of bioactive, marine-derived compounds. The global SARS-CoV-2 pandemic revealed the need for new antiviral drugs that may be used for the successful treatment of patients with COVID-19. This review evaluates the use of marine-derived compounds in the development of drugs against SARS-CoV-2. The literature review was conducted using the PubMed database. All selected studies were published until 5th January 2023. The main evaluated possible pharmaceutical targets are the spike protein, main protease (Mpro), and RNA-dependent RNA polymerase. Human serine protease, membrane glycoprotein, methyltransferase, nucleocapsid phosphoprotein, non-structural protein 10, and papain-like-protease were considered pharmaceutical targets as well. In silico studies were one of the methods used for the assessment of antiviral potential. To assess the possibility of using substances as drugs, pharmacokinetic properties, the free energy of binding with targets, the stability of conformation, and toxicity of the tested compounds to host cells were assessed. The authors highlight stachyfylin, callophysin A, terpenoid from marine sponge Cacospongia mycofijiens, three representatives from the onnamides family, and batzelladines as especially promising Mpro inhibitors. Bioactive compounds originated from marine red and brown algae, sponges, fungi, hemolymph of the oyster, and fish proteins. Marine-derived compounds and their synthetic equivalents are important sources for developing new drugs and are considered possible pharmaceuticals to improve COVID-19 treatment. Authors of in silico studies emphasize the need for further in vitro and in vivo testing of promising compounds. Hopefully, intensive analysis and research may one day lead to the identification of new advanced medicines that could be used in the fight against COVID-19.

Keywords: marine, natural products, COVID-19, SARS-CoV-2

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Poster Presentation

Breastfeeding Practice of Saudi Women Attending Primary Health Care Centres

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Abstract:

The World Health Organization and The United Nations International Children's Emergency Fund recommend breastfeeding initiation within the first hour of birth and exclusive breastfeeding for the first six months of the infant's life. However, breastfeeding rates have been declining in Saudi Arabia, even among primiparas. Therefore, we aimed to investigate the breastfeeding practices of primiparous women during the first six months of the infant's life and identify the associated factors. The quantitative descriptive study was conducted on 401 primiparous women selected from 15 primary health care centres in Riyadh, Saudi Arabia. Data were collected using a self-administered demographic questionnaire and a breastfeeding practice questionnaire. The mean age of the women was 26.23 years (SD = 3.38); almost two third (65.1%) had a bachelor's degree, and more than half (55.4%) were homemakers. Their primary source of breastfeeding information was media (59.6%), followed by family and friends (55.1%), while less than a third (30.2%) received information from healthcare staff (30.2%). Data regarding practice showed that over a third (36.9%), or every four in 10 women, initiated breastfeeding within an hour of birth, and almost half of that figure (17.2%) or around two in 10 women, exclusively breastfed their infants for the first six months of life. Furthermore, partial (mixed) feeding was popular (65.8%), and so was the use of prelacteal feeds (43.4%). Interestingly, almost all (99.8%) breastfed their infants in the first month. However, that figure declined to 76.3% in the sixth month. Comparatively, the use of formula feeds increased from 31.7% in the first month to 53.1% in the sixth month. Findings showed that those with high family income had higher odds of initiating breastfeeding within an hour of birth (AOR=0.33, 95%CI=0.18-0.59), and so were those with natural birth, compared to cesarean section delivery (AOR=0.357, 95% CI=0.18-0.71). Media as a source of information was the only factor associated with the exclusivity of breastfeeding. Our findings of suboptimal breastfeeding practice are comparable with previous reports and will form a basis for future educational interventions to improve breastfeeding practices in primiparous women.

Keywords: Breastfeeding practice, exclusive breastfeeding, breastfeeding initiation, primary health care centres, Saudi women.

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Poster Presentation

The occurrence of potentially zoonotic lungworm infections of *Eucoleus aerophilus* in red foxes in selected regions of Poland – preliminary study[#]

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Abstract:

Eucoleus aerophilus (syn. *Capillaria aerophila*) is a nematode with a worldwide geographical distribution. It parasitizes the respiratory tract of carnivores causing lung capillariosis. Among wild animals, foxes are believed to be the most common host and reservoir of this parasite, but it also affects domestic animals and even humans. In Europe, the infection rate of *E. aerophilus* in foxes varies greatly, which may be the result of using different detection methods, such as examination of lung specimens and microscopic or polymerase chain reaction (PCR) methods, which differ in sensitivity and specificity. In Poland, so far, apart from random data, there are no studies on the occurrence of this parasite in red foxes lungs. From an epidemiological point of view, research into the occurrence and spread of this infection is very important, as it is a potential source of human infection. The aim of this study was to evaluate the occurrence of *E. aerophilus* in red foxes in selected regions of Poland. The lung samples were collected from red foxes (*Vulpes vulpes*) came from the selected regions of Poland (Podkarpackie voivodship). The samples were collected during necropsy by veterinarians, frozen and sent to the National Veterinary Research Institute for further investigations. After that, every sample was opened longitudinally and inspected for nematodes. The lung lobes were dissected by opening all visible pulmonary vessels down to the narrowest practicable point (about 1 mm diameter). After that it was rinsed with water over the sieve of 150 μm aperture. The residues of each sieve were examined using a stereomicroscope with magnification of 12.5x – 80x in search of *E. aerophilus*. 52 lung tissue samples were tested for lungworm infestation. The potentially zoonotic nematode *E. aerophilus* was detected in 33 lung samples (63,5%). This preliminary research confirmed the status of red fox as the main reservoir and transmitter of the *E. aerophilus.* From an epidemiological point of view, research into the occurrence and spread of *E. aerophilus* in red foxes is very important, as it is a potential source of pet animals and also human infection.

Keywords: *Eucoleus aerophilus, Capillaria aerophila*, lungs, prevalence.

[#]The study was financially supported by statutory programme (S/517) from the National Veterinary Research Institute, Puławy, Poland.

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Poster Presentation

Powerful Plant Antioxidant: Rosmarinic Acid

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Abstract:

For a long time, secondary metabolites produced by plants have attracted attention with their beneficial effects on human health. One of the valuable secondary metabolites found in various plant families is rosmarinic acid. Rosmarinic acid was first extracted from rosemary (*Rosmarinus officinalis*), an aromatic perennial herb. It is an important phenolic compound, generally found in species of plant families Lamiaceae and Boraginaceae. In addition to rosemary, it is found especially in sage, oregano, marigold, and lemon balm. Rosmarinic acid is an ester of 3,4-dihydroxyphenyllactin acid from the esters of caffeic acid. This active ingredient, which is naturally found in plants, can also be biosynthesized through enzyme-catalyzed reactions. Rosmarinic acid has many pharmacological and biological activities and is a potential agent in the cosmetics, food, and pharmaceutical industries. In addition to its strong antioxidant activity, it has positive effects against diabetes, cardiovascular diseases, apoptosis, and kidney diseases. It is stated that rosmarinic acid, which has antimicrobial and antihypertensive properties, prevents lipid peroxidation and cell damage caused by free radicals. It has a positive effect on Alzheimer's disease and contributes to the improvement of cognitive performance. This polyphenol, which has an anti-inflammatory effect against diseases such as atopic dermatitis, is also used as an anti-aging agent. In this study, it is aimed to present a general perspective on rosmarinic acid.

Keywords: polyphenol, rosemary (*Rosmarinus officinalis*), rosmarinic acid, secondary metabolite

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Poster Presentation

The World's Super Grain: Fonio

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Abstract:

There are two species of Fonio, white (*Digitaria exilis*) and black (*Digitaria iburua*). Fonio, also called "findi" and "acha", is grown in parts of West Africa. They are small grain millets. Fonio, which has an important place in West African regions, is a traditional grain. It contributes to many socio-cultural, nutritional and economic aspects of the region. Fonio, the fastest growing grain in the world, is used in bakery products and beer production in the region where it is grown. West African agricultural systems are being severely challenged by climate change. Sustainable development agendas for the region are supported. In order to improve their value chains, increase their use and social benefits, growers work to turn uncommon products into opportunities. Fonio was approved by the European Union as a new food product in 2018. Efforts continue without slowing down to make it suitable for the taste in Europe. Today, the name of the most sold product under the packaged product is pasta containing fonio flour. Being a good source commercially, it is mostly exported to the United States. White fonio (*Digitaria exilis*) is highly nutritious. It is a subject of interest to researchers in terms of being gluten-free. It also contains high levels of dietary fiber, vitamins, minerals, and protein. Since it is gluten-free, it is a food suitable for the diets of celiac patients. White fonio flour is used to improve the nutritional and textural quality of many foods, such as bread, pudding, crackers, breakfast cereal, biscuits, and beer. It also has many health effects with its nutritional composition. In this study, it is aimed to present a general point of view about fonio, which is a current topic.

Keywords: fonio, gluten-free, nutritious

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ONLINE 14-15-16 APRIL 2023

Poster Presentation

The Effects of *Malva Neglecta* on The Probiotic Bacterium *L. rhamnosus* GG

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Abstract:

Traditional herbs are products that are used as folk medicine. Worldwide, medicinal plants and plant products have been widely used. One of these herbs is *Malva neglecta* (common mallow), which is used to treat a variety of ailments including stomachaches, wound healing, muscle pain, respiratory system inflammation, and diarrhea. Probiotic microorganisms, which are important in the intestinal flora, have been shown to prevent intestinal disorders. They can prevent pathogen colonization and reproduction, boost the immune system, and have antimicrobial properties. Probiotic-enriched foods are products that, when consumed in sufficient quantities, benefit the host. *Lacticaseibacillus rhamnosus* GG is the most extensively studied probiotic strain. Thus, the aim of the present study is to investigate antibacterial and antioxidant properties, as well as auto-aggregation of *L. rhamnosus* GG when grown with *Malva Neglecta* extract. The results showed that *L. rhamnosus* GG probiotic bacteria grown with *Malva Neglecta* extract demonstrated better auto-aggregation and antibacterial activity but not antioxidant activity.

Keywords: Antioxidant, Auto-aggregation, Antibacterial Activity, Plant extract, Probiotics

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Poster Presentation

Nurses'Perception of Clinical Handover: A Descriptive Survey

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Abstract:

Clinical handover is a routine part of nursing practice where nurses from one shift communicate patient care information to nurses in another shift. Aim: This study aimed at determining the perception of nurses regarding clinical handover and identify relationship between perception and experience of nurses. Methods: A descriptive cross-sectional survey, was conducted on a convenience sample of 286 registered nurses in a tertiary care hospital in Saudi Arabia. Data were collected using the Handover Evaluation Scale (HES), developed by O'Connell et al, and a demographic questionnaire. Registered nurses with at least six months of experience and were willing to participate were included. Findings: Most of the nurses had a bachelor's degree (50.7%), were females (88.1%) with a mean experience of 13.1years. Items on perception were ranked according to the agreement on the 7-point HES scale. The three top-ranked items showed that nurses had a positive perception towards being provided with sufficient information about patients (M=6.1, SD=0.78), being educated about different aspects of nursing care (M=6.1, SD=0.87) and having had the opportunity to ask questions about things that they did not understand (M=6.1, SD=0.85). On the other hand, the least ranked item was related to handover taking too much time (M=3.5, SD= 1.6), followed by nurses often being given information during handover that is not relevant to patient care (M=4.5, SD=1.7). A positive correlation was found between the nurses' perception regarding clinical handover and their experience (r=0.125; p=.042), indicating that those with more experience, perceived the clinical handover more favourably.Conclusion: Nurses had a positive perception toward the clinical handover, when they were provided with relevant information. Information that was not relevant and when handover was too time-consuming it was perceived less favorably. Policy regarding change in handover techniques is essential, which should be followed by evaluation to identify the effectiveness of such changes.

Keywords: Clinical Handover, Nurses, Perception

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Poster Presentation

Application of by-products agroindustries for the production of vinegar

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Abstract:

Agribusiness by-products have the potential to be used in the food industry and generate employment and income through the production of vinegar. Vinegar or fermented acetic acid is consumed all over the world, it has interesting compounds, and every day the interest in organic, living products with functional appeals increases, which is why a search was carried out in the CAPES, Science Direct and Web databases. of Science regarding articles published on by-products, or other edible wastes, being applied in the production of vinegars. Functional effects of vinegars in rodents have been increasingly evaluated, in addition to their preservative effect, it has been shown that the consumption of vinegar prevents and treats diseases in rodents, and the compounds formed are variable depending on the raw material used in fermentation. The world has been concerned with giving a smarter and healthier destination to the by-products that are generated in its processes. Vinegars have antioxidant, antitumor, antihypertensive effects, among others, and their effects in mice are explained on a larger scale, but more studies are needed to demonstrate their functional effect in humans.

Keywords: Fermentation, Food, Economy.

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Poster Presentation

Effects of subinhibitory vancomycin and gentamycin concentrations on biofilm formation by *Staphylococcus aureus*

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Abstract:

To examine the effect of sub-inhibitory concentrations (sub-MIC) of antibiotics on biofilm formation by *Staphylococcus aureus* (*S. aureus*) clinical isolates. Twenty *S. aureus* isolates were investigated using conventional microbiological methods. The susceptibility of uropathogenic staphylococci to vancomycin was performed by broth microdilution following the recommendations of the Clinical and Laboratory Standards Institute (CLSI). The biofilm-forming ability of *S. aureus* isolates treated and untreated with vancomycin and gentamycin sub-MICs was assessed in vitro using the tissue culture plate (TCP) method combined with a crystal violet staining assay. According to the tissue culture plate approach, all strains of *S. aureus* have shown the capacity of biofilm formation, 29% of the isolates were strong biofilm producers, 57% of the isolates were moderate biofilm producers, and 10% of the isolates were weak biofilm producers. Different changes in the ability to form biofilms were detected in *S. aureus* isolates treated with vancomycin and gentamicin sub-MIC concentrations. MIC/4 concentration of vancomycin had an inhibitory effect on biofilm formation in 92.96% of isolates, while biofilm formation increased in 31.3% of isolates at the MIC-16 concentration. MIC/4 and MIC/8 concentrations of gentamycin had inducing effects on the rate of biofilm formation in 54.55% and 83.33% of isolates, respectively. The findings of this research demonstrated that the reduction and induction effects on biofilm formation ability are antibiotic-dependent and even vary from strain to strain.

Keywords:

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

First Detection of *Mycobacteroides abscessus* from Discus Fish (*Symphysodon aequifasciatus*) in Samsun, Turkey[#]

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Abstract:

Mycobacteriosis in aquarium fish is caused by several species of bacteria from the Mycobacteriaceae family, described as nontuberculous mycobacteria (NTM) some of which have zoonotic character. They can be a source of risk for public health, especially for people engaged in aquarium fish breeders. Discus fish are one of the most popular and expensive aquarium fish favoured by aquarium hobbyist. In this study, a discus fish that was sent to our laboratory from a farmer who breeds discus fish as an amateur in Samsun was microbiologically analysed for NTM. For this purpose, tissue samples taken from the internal organs (spleen, liver and kidneys) of the fish were homogenized and exposed to the decontamination process. Following that 10 µl of decontaminated homogenate were inoculated into Lowenstein-Jensen medium and incubated at 30 ± 1 °C. The media were checked daily for 2 months. Suspicious colonies were examined microscopically by Ziehl-Neelsen (ZN) staining and subcultured. For molecular identifications, the hsp65 (heat shock protein) gene region were amplified using Tb11 (ACCAACGATGGTGTGTCCAT) and Tb 12 (CTTGTCGAACCGCATACCCT) primers and sequenced with the same primer pair. The white colonies were observed on the Lowenstein-Jensen medium and these colonies were positive for acido-resistant bacilli (ARB) by ZN stain. In PCR assay targeting the hsp65 gene, a PCR product of the expected sized (439 bp) was observed and isolate was evaluated as *Mycobacterium sp*., The sequencing of the hsp65 gene region of the isolate was found to be 100% similar to *Mycobacteroides abscessus* strains with accession numbers AY859675, AP018436, EU266576, DQ987724 and AB548605 in the GenBank database. As a result, the isolate was identified as *M. abscessus* and deposited in GenBank database with accession number OQ540499.

Keywords: Discus fish, hsp65 gene, *Mycobacteroides abscessus*

[#] This research was supported by the Research Fund of Ondokuz Mayis University (Project Number: PYO.VET.1904.21.027)

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Poster Presentation

Monitoring of sheep oak's poisoning in North-east area of Albania.

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Abstract:

The objective of this paper was to investigate the suspected poisoning cases in local breeds of sheep from the consumption of oak leaves and branches (*Quercus spp*) during 2015-2019. The study was carried out in north-eastern part of Albania, where the oak forests and shrubs occupy over 20% of the total territory. Traditionally, the farmers use oak leaves and branches for dry feed purposes as well as for grazing throughout the year. The study was done jointly by veterinarians, students and farmers in the area by administering a questionnaire and analyzing a database for clinical signs, detailed anamnesis, nutritional diets, laboratory analyses and differential diagnosis on the poisoned animals, so as to arrive at the right diagnosis. Based on our findings, 143 sheep or 2.71% of a total of 5268 animals monitored on average per year showed definite clinical signs of oak poisoning and 33 sheep or 0.63% died. The average morbidity and mortality rate in the winter season was at 0.63% and 0.192% respectively. In spring there was a jump in the morbidity and mortality rates at 1.66% and 0.50% respectively. The mortality from the treated sheep was 23.1%. High concentration of tannins is responsible for oak poisoning when animals consume oak leaves and branches in the absence of other feeds. The tannins and their metabolites irritate the mucosa of the digestive system, denature proteins, and damage the liver, kidneys and digestive system of ruminants. Case-by-case treatments were performed on sheep based on relevant protocols. Our recommendation for areas under oak forests and shrubs is to provide farmers with assistance for a right nutritional program which should comprise a balanced mixture of oak intake with other feeds in order to avoid economic losses in ruminants.

Keywords: Poisoning, sheep, oak, tannins, Quercus spp.

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Poster Presentation

Computer 3D modeling of articulatio genus in Wistar albino rat

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Abstract:

Laboratory animals have been used in research as model organisms for many years. Knowing the anatomical structures in these animals is essential for determining the pathological changes in trauma or disease states and applying the appropriate treatment protocol. 3D computer-aided visualization can enhance the teaching of complex anatomical areas. The knee joint has a very important role in the transportation and movement of the body and has been the subject of many morphological and functional studies due to its complex structure and frequently observed dysfunctions. Furthermore, the knee joint is one of the most injured joints besides being one of the most complex joints in the body. Studying the structure of the mentioned part of the body is quite challenging because experimental rats used in studies have quite small knee joints. In this study, CT images taken from four adult rats (Wistar albino rats) were utilized to improve the comprehensibility of the knee joint. The relevant DICOM images were rendered in 3D using the 3D Slicer program and then converted to ".stl" format after they were finalized in Cinema 4D software. Anatomical structures were marked on the created 3D models resulting in the region being more understandable through the visualization of the knee joint, which is quite small in the rat. It is thought that the visual models obtained from the study will contribute to the description and interpretation of the knee joint for researchers who will work with laboratory animals.

Keywords: Anatomy, Articulatio genus, object modeling, Wistar albino rat

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Poster Presentation

Effect of Vegan Diet on Health, Evaluation of Animal Protein and Plant Protein

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Abstract:

Although vegetarianism is a very old practice that emerged with the idea of not applying violence to animals, it is accepted as a practice that provides many benefits in terms of health. Exclusion of certain foods from the diet is the main difference between the various forms of vegetarianism. Vegetarianism categories in general include, vegans, who exclude foods of animal origin and their derivatives from their diet, and other categories of vegetarians, lacto-vegetarians, ovo-vegetarians, lacto-ovo-vegetarians and pescatarians. Recent studies have emphasized that changing the dietary pattern by reducing animal protein intake and increasing the consumption of plant-based foods may reduce the cardiovascular risk profile, high hypertension, type II diabetes, and mortality rate. In other respects, another reviewed study shows that a vegan diet, which is high in dietary fiber and vitamins, is associated with improved mood and cognitive processing speeds. Apart from these, according to one another study, it was concluded that plant proteins are not as high quality as animal proteins. Due to the fact that plant-based proteins are not as rich in content as animal proteins, vegetarians may suffer from iron, B12 and zinc deficiencies. The decrease in long-chain n-3 fatty acids, vitamin B12 and iron supply and the risk of osteoporosis in vegetarian diets have been reported as negative aspects of these diets. This review article summarizes the characteristics and benefits of vegetarian diets in the general population, possible deficiencies that may occur in the body, and the potential beneficial effects of such a diet in chronic kidney disease (CKD) patients, cardiovascular disease, and high hypertension.

Keywords: vegetarian, animal protein, plant protein, b12 levels, iron levels

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Poster Presentation

Molecular Identification of *Anisakis pegreffii* (Nematoda: Anisakidae) in the European Anchovy (*Engraulis encrasicolus*) from the Aegean Sea

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Abstract:

The European Anchovy (*Engraulis encrasicolus*) is a high commercial value marine fish species along the Aegean coasts of Turkey. Anisakiasis is a fish–borne parasitic zoonoses caused by *Anisakis* larvae in consumers. To date, there is no report of molecular identification of *Anisakis* larvae infecting *E. encrasicolus* in the Turkish marine coasts. Therefore, the aim of the preliminary study was to investigate the presence of *Anisakis* larvae in *E. encrasicolus* from the Aegean Sea coasts of Turkey (FAO area 37.3.1) and molecularly identify the *Anisakis* larvae at the species level for the first time. A total of 13 *E. encrasicolus* captured from the Turkish Aegean coasts (FAO 37.3.1) were examined for *Anisakis* larvae in the March 2023. Fish were carefully dissected and examined for the presence of *Anisakis* larvae in the viscera based on the incubation method. Eviscerated fish was filleted, yielding two dorsal and two ventral fillets, and then a standard UV–press method was used for checking *Anisakis* larvae. All detected larvae were counted, washed in saline solution, and stored in ethanol for further morphological and molecular identification. The collected all larvae were individually cut into three parts. Middle parts were used for molecular identification. Anterior and posterior parts were cleared in Amman's lactophenol and morphologically identified under the light microscope according to identification keys. Genomic DNA was extracted from the individual middle part of larvae using the DNA extraction kit. The rDNA ITS region was amplified using the primer sets NC5/NC2. The species identification of all *Anisakis* larvae was carried out by restriction fragment length polymorphism (RFLP) analysis of the amplified rDNA ITS region using *Hha* I and *Hinf* I restriction enzymes. The prevalence, mean intensity and mean abundance of *Anisakis* larvae were 38.4% (5/13), 1.0, and 0.38, respectively. All *Anisakis* larvae were collected from the viscera and body cavity of *E. encrasicolus*. No larvae were found in the fish muscles. *Anisakis pegreffii* was genetically identified by RFLP analysis of the ITS region. In conclusion, this preliminary study presents the first molecular identification of *A. pegrefii* in *E. encrasicolus* from the Turkish marine coasts.

Keywords: aegean sea, anchovy, anisakis, PCR-RFLP, zoonoses

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Poster Presentation

Effect of *Peganum harmala* total alkaloid extract on sexual behavior and sperm parameters in male mice

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Abstract:

Peganum harmala L. (Zygophyllaceae), is a well-known plant used in popular medicine. It is a plant distributed all over the world. It has a wide variety of pharmacological activities, due to its composition of various chemical ingredients such as alkaloids. The study was designed to evaluate the effects of the total alkaloid extract of *P. harmala* Algerian seeds on sexual behaviour and male reproductive function. The extract was administered orally to groups of male mice at the dose levels of 6.25, 12.5, and 25mg/kg body weight per day to the respective group of animals and normal saline daily for the control group for 35 days. On day 28th, sexual behaviour parameters were recorded. At the end of the trial, the reproductive organ weights, sperm quality, seminal fructose, and testosterone hormone levels were also evaluated. The results show that the extract affected a range of measured sexual parameters such as mount latency (ML), intromission latency (IL), mount frequency (MF), intromission frequency (IF). Moreover, Increase in the Gonadosomatic index in all groups compared to the control group was noticed. However, There was a significant ($p<0.01$) decrease of sperm counts in the groups treated with 12.5 mg/kg and 6.25 mg/kg. Whereas, there was any significant difference in motility, membrane integrity, and total antioxidant capacity of sperm cells compared to control. The extract treatment also brought a non significant increase in fructose content of the seminal vesicle and serum testosterone level. Overall, findings from this study demonstrate that the extract acts in a dose-dependent manner, and it affects the studied reproductive parameters of male mice in different manners.

Keywords: *Peganum harmala*, sperm count, motility, membrane integrity, mice.

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Poster Presentation

Parasite infections in rainbow trout (*Oncorhynchus mykiss*) farm from the Rize Province of Turkey

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Abstract:

The availability of suitable freshwater resources in Turkey allows for the growth of commercial rainbow trout aquaculture, with an annual production of 134.174 tonnes in 2021. Parasite infections may negatively affect fish welfare, cause mortality, and lead to significant economic losses in aquaculture production. The important parasite species in rainbow trout (*Oncorhynchus mykiss*) farms in Turkey are *Chilodonella* sp., *Ichthyobodo* sp., *Ichthyophthirius multifiliis*, *Trichodina* spp., *Spironucleus* spp., and *Gyrodactylus* spp. The present study was to examine cultured rainbow trouts from a freshwater farm in the Rize province of Turkey for parasites between February and March 2023. In the present study, sixty rainbow trout (*Oncorhynchus mykiss*) were randomly sampled from a fish farm in the Rize province of Turkey and examined for ectoparasites and endoparasites. Fresh mucus smears were collected from the skin and fins to identify parasites by microscopic examination. Gills, liver, spleen, digestive tracts, and muscles were examined for parasites by the naked-eye and stereo microscope. Parasitological examination was carried out on smears of the posterior part of the intestine at 40x magnification for protozoan parasites. Giemsa-stained blood films were also examined for blood parasites. The protozoan parasite *Ichthyobodo* sp. was found on the skin and fins of rainbow trout, and its prevalence was 15% (9/60). Diplomonad flagellate *Spironucleus salmonis* (formerly *Hexamita salmonis*) was detected from smears of the intestine contents. The prevalence of *S. salmonis* was 20% (12/60). The present study is still continuing, and rainbow trout obtained from a fish farm will be examined monthly for parasites in the Rize province of Turkey.

Keywords: parasite, rainbow trout, Rize, Turkey

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Poster Presentation

Chaya reduces the damage caused by exposure to Arsenic

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Abstract:

In many cities throughout the world, water is consumed normaly, but, this water may contain high levels of arsenic (As). In fact, this is a public health problem. Although As is an essential element for life, in excess it is highly toxic. As can trigger several conditions, the main ones being cancer and damage to the genetic material of cells in different organs. In this work, the daily consumption of aqueous extracts of chaya is proposed as an alternative to reduce genotoxic damage. Chaya (*Cnidoscolus aconitifolius*) is a shrub of Mayan origin but that has spread to different regions of the world due to its ease of cultivation and the peculiar flavor of its leaves. In southern regions of Mexico it is used to make drinks, salads and various dishes typical of regional cuisine. In the assay, two groups of Long Evans rats were exposed to As, in the drinking water, for one month and then they were administered aqueous (G2) and methanolic (G3) extracts of chaya for another month. Another group (G1) served as a control and was not exposed to As. The damage was measured by counting micronucleated erythrocytes. This methodology has proven to be a good benchmark for genotoxic damage because during cell division the formation of micronuclei is directly related to damage to genetic material. The results show that during the period of exposure to As there is an increase in micronucleated erythrocytes, but at the end of the treatment the count decreased by 70% on average in both treated groups. In conclusion, the daily use of chaya as an infusion can help reduce the damage caused by exposure to As.

Keywords:

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Poster Presentation

A Comprehensive Review on Therapeutic Potential of Prebiotics and Probiotics in Various Diseases and Disorders Including COVID -19

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Abstract:
In these days various effective medications and therapies are available for treatment of Gastrointestinal, Mental, Autoimmune, Cardiovascular and Respiratory diseases and disorders, but there are lots of side effects of these medications. Prebiotics and probiotics have various pharmacological actions and useful in treatment of various Gastrointestinal, Mental, Autoimmune, Cardiovascular, Respiratory diseases and disorders, including COVID 19. Probiotic is derived from the Greek word meaning "Life", Probiotics are live microorganism, which help to keep body healthy and working well and prebiotics are nondigestible food ingredients that stimulate the growth or activity of bacteria, which are beneficial to health. As per the current scenario COVID-19 is the biggest challenge in front of whole world, Scientist and researchers worldwide are finding the effective treatment and Vaccination to prevent and cure COVID -19, but no effective treatment and vaccination has been found till yet. Fewer scientists are focusing on Probiotic as possible effective treatment of COVID 19. This review article work analyze the all possible beneficial effects of Probiotics and Prebiotics by concluding various Journals in the field of Probiotics & Prebiotics medication and review the pharmacological effects of Prebiotics and Probiotics for treatment of various diseases and disorders.

Keywords: Prebiotics, Probiotics, COVID 19, cardiovascular, Respiratory disease

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Poster Presentation

An Overview of Anatomical, Histological and Stereological Studies on the Nervous System in Poultry

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Abstract:

Poultry have relatively larger brains compared to other vertebrates. Many functions regulated by the brain in mammals are localized in the spinal cord in birds. The increased volume of poultry brains is largely due to the enlarged cerebellum and mesencephalon, which are associated with exceptional motor control abilities and visual perception. In domestic birds, the hemispherium is separated from each other by a long and median slit from the dorsum and does not include the sulci and gyri. It is known that the bulbus olfactorius of birds is much smaller than the bulbus olfactorius of mammals. This indicates that the sense of smell is underdeveloped in the birds. As a result of the literature review, many anatomical, histological and stereological studies on the nervous system of poultry were found. Cunha et al. (2021), they calculated the surface area of the cerebellum and the number of Purkinje cells with the Cavalieri method applied in the Stereo Investigator software. In this study, it was found that although parrots and songbirds have a smaller cerebellar volume, the surface area of the cerebellum and the number of Purkinje cells do not decrease compared to the rest of the brain due to the higher degree of foliation. The variation in volume of cerebellum layers, the number and size of Purkinje cells and granule cells were investigated by Boire and Baron (1994). The size and number of Purkinje cells and the number of granule cells were positively correlated with the degree of cerebellar foliation, but granule cell size was found to decrease with higher degrees of foliation. Another study on the cerebellum was done on golden-capped parrots by Sherman and Mahmoud (2008). It has been determined that golden-capped parrots have large and highly curved cerebellum, which is inconsistent with seabirds, parrots, hook up birds, crows and woodpeckers. It has been emphasized that domestic pigeons and chicken-like birds also do not have a large and highly folded cerebellum. It was concluded that the expansion/reduction of individual foliation is related to certain behavioral differences between taxa and cognitive abilities of modern birds. Racicot et al. (2021), using the Cavalieri method using six male white Leghorn chickens and six male red forest chickens, it was confirmed that chickens have both relative and absolute larger cerebellum than forest chickens. It has been determined that the enlargement of the chicken cerebellum is due to both coordinated increases in the number of neurons and larger granule cells. As a result, the research has revealed the existence of various anatomical, histological and stereological studies on the nervous system in poultry. Based on these studies in which reference information was determined, it was concluded that stereological studies related to the nervous system in poultry could be directed.

Keywords: Cavalieri principle, nervous system, poultry, stereology, volume

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Poster Presentation

Comparative osteometric study of metapodial bones in roe deer (*Capreolus capreolus*), sheep (*Ovis aries*), and goat (*Capra hircus*)

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Abstract:

Skeletal systems in mammals show morphological changes depending on many factors, especially genetic factors. It is known that the shape and size of metapodial bones are used as a distinguishing feature in species identification. With this preliminary study, it was aimed to obtain osteometric data of metapodial bones in 3 different species of ruminantia, sheep, goat and roe deer, to compare them with each other and to determine their similarities and differences. In the study, a total of eight metacarpal and eight metatarsal bones belonging to three adult roe deer, three sheep, and two goats were used in the bone collection of our department. After macroscopic examination, morphometric measurements of 13 parameters (GL, Bp, Dp, SD, DD, Bd, Dd, DIM, DEM, DIL, DEL, WCM, WCL) was taken with a digital caliper (Mitutoyo, Japan). Data of metacarpal and metatarsal bones measurements were analyzed with full factorial design included and gender x species effects were investigated with Tukey's tests. All data were summarized with descriptive statistics such as means and their standard error of means. All statistical analyses and calculations were executed Via SPSS (2020) statistic program. The fact that the GL and SD values for metacarpal bones and GL, SD, Bd values for metatarsal bones were significantly different in roe deer, goat and sheep showed that these parameters were distinctive for the species. In addition to these parameters, for metacarpal bones Bp, Bd, Dd, DIM, DIL, WCM and WCL values for roe deer and for metatarsal bones Bp, Dp, Dd, DIM, DIL, WCM, DEM and WCL values for goats, DD, DEL values for sheep were determined to be other distinguishing parameters. Also, for metacarpal bones, DD, DEL, Dp and DEM values were statistically in not significant, indicating that these parameters were not identifical parameters for the three species. As a result with this study, measurement parameters that can be used to distinguish roe deer, goat and sheep metapodial bones from each other were revealed.

Keywords: Metacarpal bones, Metatarsal bones, Osteometry, Variability

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Poster Presentation

The morphologic study of the sternum in red fox (*Vulpes vulpes*)

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Abstract:

The shape and anatomical structures of bones differ between animal breeds and species. Until today, there are many studies have been made on various bones that make up the skeletal system in different carnivorous species. Knowing the anatomical structures of bones is essential for species identification. This study aimed to examine the sternum of the red fox (*Vulpes vulpes*), the most widely distributed carnivore in the world, macroanatomically and morphometrically and to reveal its anatomical features. Four red foxes which were brought to our department as dead as a result of various accidents in the Gümüşhane region were used in the study. Macerations of the sternum, which was separated from the ribs and their muscles, were performed by the boiling method and then cleaned and whitened with hydrogen peroxide. The sternum which contained three main parts manubrium sterni, corpus sterni, and proccessus xiphoideus consisted of a total of 8 sternebrae and its total length was 16.2±05 cm.The first and last sternebrae were different from the others. The manubrium sterni up to the second incisura costalis was measured as 3.32±08 cm. The cranial half of this sternebra was seen to be enlarged and have lateral protrusions for attachment of the first ribs. Corpus sterni consisted of 6 sternebrae and the length of each sternebra was greater than its width. Although the length of the sternebra, which was approximately 1.72±01 cm at the beginning, was seen to decrease from cranial to caudal, there was no difference between the widths of the sternebrae. The most caudal sternebra measured approximately 1.43±0.2 cm in length. The last sternebra which is called the proc. xiphoideus was 3.04±04 cm long. The leaf-shaped formed cartilago xiphoidea was located on the posterior part of this sternebra. In the light of these findings, the general characteristics of the sternum in the red fox were similar to those reported for carnivore sternum. However, the fact that the sand fox (*Vulpes rueppellii*) has 7 sternebrae constituted the difference from the red fox used in our study.

Keywords: Anatomy, Morphometry, Red fox, Sternum

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Determination of Zeralenone in liver by LC-MS/MS Method, in the Republic of Albania.

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Abstract:

Zearalenone (ZEA) is frequently produced by Fusarium species growing on maize but also on barley, oat and wheat. Animals could be at high risk of being exposed to ZEA through the intake of contaminated feed. They can cause a variety of adverse health effects and pose a serious health threat to humans and livestock. ZEA has anabolic properties and estrogenic resulting in severe disorders of the reproductive system of mammalian species, despite its relatively low acute toxicity. The liver is one of the target organs for the accumulation and metabolism of ZEA. As no data exist on the occurrence of Zearalenone in liver, in Republic of Albania we have analyzed them by LC-MS/MS. Nineteen (n=19) ovine, caprine and swine liver samples were taken in the study during the year 2022. The samples were taken from different regions of Albania. All samples were collected using official sampling methods. The compound was extracted from liver tissue using ethyl acetate. The purification was performed by solid-phase extraction (SPE) with sorbents C18, primary secondary amine and magnesium sulphate. Using an isotope labelled internal standard ($^{13}C_{18}$-Zearalenone), high recovery were achieved and the overall recovery was 99%. The results are not corrected for recovery, because the compound ZEA is quantified using an internal standard and a matrix matched calibration curve. The Limit of Quantification (LOQ) value for ZEA was determined 25 µg/kg. No carry-over factors from feed to liver were determined. The Zearalenone contents in liver were demonstrated that was below the LOQ for all the samples analyzed. The levels of Zearalenone found in this study indicate that the presence of this compound in liver is not hazard for public and animal health.

Keywords: zearalenone (ZEA), liver, LC-MS/MS.

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ONLINE 14-15-16 APRIL 2023

Poster Presentation

The Effect of *Allium Schoenoprasum* L. (Sirmo) on Caspase Levels Against Acrylamide Toxicity

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Abstract:

Allium schoenoprasum L. (Sirmo) is a member of the Liliacea family . Recently studies on Allium schoenoprasum L., it has been reported that the plant has anti-inflammatory, antibacterial, antifungal, antihelmintic, antihypertensive, anticancer effects as well as a strong antioxidant effect. Acrylamide causes degeneration in peripheral nerves, degeneration of neurons in regions of the brain where tasks such as memory and learning are carried out (hippocampus, thalamus, cerebral cortex) and adversely affects their morphology. The aim of this study was to investigate the protective effect of *Allium schoenoprasum* L. (Sirmo) plant against acrylamide toxicity. 32 Wistar-Albino female rats were used as study animal material. Rats were divided into 4 groups. No application was made to the first group. The second group was given 25 mg/kg of Acrylamide daily by gastric gavage. The third group was given 200 mg/kg *Allium schoenoprasum* L. (Sirmo) ethanol extract by gastric gavage. The fourth group was given 25 mg/kg Acrylamide and 200 mg/kg *Allium schoenoprasum* L. (Sirmo) ethanol extract by gastric gavage. The working period was planned as 15 days. On the 16th day, all rats were sacrificed by high volume blood collection method. Liver tissues from rats were homogenized using the appropriate procedure. Commercial ELISA kit was used to determine Caspase levels in homogenized liver tissues. In the analyzes performed, an increase in Caspase levels was observed in the group given acrylamide. Reductions in Caspase levels were observed in the groups given *Allium schoenoprasum* L. (Sirmo). This increase shows that there are disruptions in apoptotic steps as a result of the disruption of endogenous enzyme balance in apoptotic cells. In studies with *Allium schoenoprasum* L. (Sirmo), it has been determined that this plant has protective effects. In order to see all the effects of this plant we use, it would be appropriate to plan a long-term study in the future. As conclusion; *Allium schoenoprasum* L. (Sirmo) may provide therapeutic benefit when used in conjunction with acrylamide.

Keywords: Acrylamide, *Allium schoenoprasum L.*, Caspase, Rat.

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ONLINE 14-15-16 APRIL 2023

Poster Presentation

Fluorosis: causes and effects on human health

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Abstract:
Fluorosis is a disease caused by deposition of fluoride in the hard and soft tissues of the body. It is a slow, progressive and crippling disease and is characterized into three types-dental fluorosis, skeletal fluorosis and non-skeletal fluorosis. Fluorosis is endemic in 25 countries of the world, where more than 200 million people are affected. In India more than 66 million people are affected mainly due to high concentration of fluoride in groundwater. An in- depth study was conducted in Gaya district of Bihar, where Public Health and Engineering Department (PHED) of Bihar had reported that the entire Gaya district was endemic with respect to fluorosis. Our study confirmed only two out of 24 blocks were endemic with respect to fluorosis. During this study fluoride was measured in water, soil, crops grown, blood and urine samples. It was found that people were taking in fluoride both through water and food. Health survey indicated that more than 50% people were suffering with non-skeletal fluorosis, 60-70 % people suffered with dental fluorosis and 30-55% suffered with skeletal fluorosis. Neurological, gastro-intestinal problems, anaemia and thyroid problems were detected among non-skeletal fluorosis. Dietary supplementation with amla (*Emblica officinalis*) showed some improvements. Further, laboratory studies also indicated that dietary supplements may help in alleviating fluoride toxicity.

Keywords: Fluorosis, Gaya district, Bihar, dietary supplements

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

An Uncommon Interaction Between *Dermanyssus gallinae* (De Geer, 1778) (Mesostigmata: Dermanyssidae) and Domestic Cat (*Felis catus*)

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Abstract:

Dermanyssus gallinae, also known as the poultry red mite, is a mesostigmatic mite of cosmopolitan distribution that mainly infests poultry such as chickens, turkeys, and occasionally domestic mammals. In affected hosts, it has been reported that a range of symptoms that insomnia, dermatitis, irritation, itching, anaemia, anorexia, decrease in feed efficiency, suppression of immunity, and death as a result of all these. In addition, it has been reported to cause cannibalism in some studies. Besides symptomatic damage, these mites are vectors for bacterial and viral pathogens. The infestations of *Dermanyssus gallinae*, which also have zoonotic potential, are also called dermanyssosis and gamasoidosis. In this study, mite samples (n: 2) were collected from a kitten in Turkiye, and then mite samples were preserved in 70% ethanol. Then, mite specimens were cleaned for 24 hours with lactophenol, mounted in slides with Hoyer's medium, and finally identified as *D. gallinae* using the relevant literature under the light microscope. In fact, *D. gallinae* infestations are mainly associated with avian hosts, but in many countries in the world, infestations/attacks have been also reported from nonavian hosts such as human and domestic mammals. In previous studies in Turkiye, *D. gallinae* infestations have been reported on avian hosts such as chicken, pigeon, turkey, swallow, and parrot, as well as on nonavian hosts such as humans, horses, donkeys, cattle, and rabbits. Together with this study, *D. gallinae* interaction (infestation/attack or opportunistic/accidental) was reported for the first time in cats from Turkiye. Specific non-host interactions can be interesting parasitologically, but strong and reliable evidence is needed to decide whether the relationship with the cat is a parasitic phenomenon (it is unknown whether it feeds on the cat, and also, it does not have any parasitological symptoms). Therefore, conducting more comprehensive molecular-based studies will help us to understand the relationship of *D. gallinae* mites with nonavian hosts (e.g. comparing host blood with engorged mites with host blood in addition to symptoms).

Keywords: *Dermanyssus gallinae*, host-parasite interactions, poultry red mite,

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Effects of Milk Fat and Carbohydrate Composition on Nutrition and Health

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Abstract:

The aim of this study is to examine the effects of milk fat and carbohydrate composition on nutrition and health in the light of literature information. Published reviews and randomized controlled trials involving the words "milk", "milk's carbohydrates" and "milk's fat" between 2019 and 2023 were reviewed in PUBMED. Milk has an important place for human health in terms of macro and micronutrients. The process that starts with breast milk leaves its place to different milks in the future. The macro and micronutrient composition of milk varies according to the type. However, fat and carbohydrate, which are macronutrients of milk, can have positive or negative effects on human health. Because cow's milk is high in saturated fat, it has been associated with risks of cardiovascular disease and cancer in some studies. However, there are studies indicating that conjugated linoleic acid in milk has positive effects on obesity. Lactose intolerance, the main carbohydrate of milk, is higher in certain populations. There are also studies in the literature that lactose metabolism may cause carcinogenesis. In conclusion, there are contradictions in the literature on the benefits and harms of milk, which is important for human health. Further research is needed on the fat and carbohydrate composition of milk.

Keywords: milk, carbohydrate, fat

Third International Congress on Biological and Health Sciences
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Poster Presentation

The Immune System: Role of Vitamin E

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Abstract:

The aim of this study is to compile the potential mechanisms related to the effects of vitamin E on the immune system. Review researches which contain the words "immune system" and "vitamin e" between the years 2020-2023 were reviewed in the PUBMED database. Vitamin E, a fat-soluble vitamin, is in high concentration in immune cells compared to other cells in the blood. Vitamin E has many potential effects, especially as a powerful antioxidant and modulation of immune function. Vitamin E deficiency appears to impair the normal function of the immune system in animal and human studies. The immune system plays a critical role in the body. Basically; it has important tasks such as defense against infectious diseases, response to injury, identification and elimination of tumor cells. Vitamin E plays an important role in the metabolism of T cells, which are among the immune cells. Vitamin E in T cells; it directly affects cell membrane integrity, signal transduction and cell division. Vitamin E is thought to have potential roles in removing reactive oxygen species and reducing oxidative stress. In these roles; protecting membrane integrity, reducing inflammation, regulating signal transmission. Vitamin E has many regulatory effects on the immune system through the modulation of proinflammatory cytokines and inflammatory mediators. Further research is needed to have a detailed understanding of all the mechanisms involved.

Keywords: antioxidant, immune system, vitamin e

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Quality nutritional stability, bioactive compounds and antioxidant activity of apple jam: impact of storage time and temperature

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Abstract:

The fruits and derivatives are products known for their excellent energy intake and their beneficial health effects. Jam is an effective and tasty way of preserving fruit. Storage conditions like duration and temperature are important factors for jam quality. The present work aimed to study the evaluation changes of nutritional characteristic (total sugar (TS), free amino acids (FAA), hydroxymethylfurfural (HMF) and ascorbic acid (AA)), phytochemical composition (carotenoids, total phenolics (TPC) and flavonoids compound TFC)) and antioxidant ability (DPPH and ferric reducing power (FRP)) of apple jam commercially available in the Algeria market during storage. For that purpose, the jam samples were stored during 30 days at 25 and 35°C. In the current study, the results show that at the end of storage under 25 °C and 35 °C, respectively, the decreasing levels for sample were 11, 13% for TS, 63, 68% for FAA, 6, 7% for AA; likewise, the increasing were 127, 143% for HMF, respectively. In the same, significant losses of bioactive compounds and antioxidant activity have been observed in samples stored. The results of the present study allow concluding that the storage conditions and the reactions initiated during storage have an influence on the nutritional quality and antioxidant potential of apple jam. Therefore, the practical implications of this work could be very useful to optimize storage conditions in order to maintain and improve the quality of jam.

Keywords: Nutritional characteristic, storage conditions, bioactive compounds, antioxidant activity.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

CHITOSAN–SODIUM ALGINATE PARTICLES CONTAINING ROSMARINUS OFFICINALIS ESSENTIAL OIL: FORMULATION, OPTIMISATION AND CHARACTERIZATION

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Abstract:
The toxicity risks, instability of essential oil, and complex composition are principal obstacles to using essential plant oil for clinical applications. Solving stability-related problems, providing targeted drug delivery, and decreasing plant essential oil toxicity, encapsulation can be used successfully. Rosemary (Rosmarinus officinalis) is a perennial plant of the Lamiaceae family with various healing properties. However, the rosemary essential oil (REO), as volatile oil, is fast evaporated, which limits its applications. The aim of this study was to investigate pharmaceutical potentialities of a polymeric Alginat (Al)-Chitosin (Ch) particules (Ps) particulate drug delivery system for modulating the drug profile and assessing the effect of (AlChPs) on the (REO) efficacy. In this research work two cost effective polymers sodium alginate and chitosan were used for entrapping the REO through ionic cross-linking method [(4)] and the optimization carried out by box benhken experimental design.The optimum solution was characterized by high performance liquid chromatography(HPLC), Swelling index, Fourier Transforms Infrared spectroscopy (FTIR). Finely, the impact on sperm motility protection was studied by the cold technic of bovine sperm using a Computer Aided Semen Analysis (CASA). The optimum solution was obtained when using 1 g Al, 1.05 g Ch, and 150 µl REO. The results of HPLC and FTIR conformed the complex creation by the presence of the camphor peak in the rosemary oil and in the AlChPs, However, the non-presence of the peak in the placebo sample (absence of the oil in the placebo formulation). The alginate acts as a gastric dressing (pH=2.5), thus at pH=7.5 the REO-AlChPs acts as a matrix for the controlled release of the incorporated drug. The results showed a significant positive impact on sperm motility after hours of preservation. It can be concluded that rosemary plant can be used as the core inside the AlChPs due to its medicinal properties and other properties. Based on the stated content, it is clear that in the future, by conducting more extensive research, the necessary platform can be provided for the use of this medicinal plant as much as possible in the pharmaceutical industry.

Keywords: sodium alginate, chitosan, rosmarinus officinalis, essential oil.

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

AURONES AS AN IMPORTANT SCAFFOLD FOR ANTICANCER RESEARCH - A COMPUTATIONAL APPROACH

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Abstract:

Aurones, a class of flavonoidscompound signifies some of the less studiedsecondary metabolites of natural compounds,Aurones are a type of plant-based flavonoid that have been used for centuries in traditional medicine for a variety of purposes such as to treat certain skin disorders, promote wound healing and reduce inflammation. They are also used to treat fever and headaches, and to reduce the severity of asthma, and to treat depression and anxiety.Aurones have shown promising results as potential anticancer agents. This paper presents a computational approach to study the potential of aurones as anticancer drugs. Various drug-likeness studies, molecular docking, ADMET and QSAR studies were conducted on reported synthesised and isolated aurones. The results of these studies indicate that aurones possess a high potential as a scaffold for anticancer research. The molecular structure of aurones was found to be suitable for binding to various cancer-related targets such as co-crystal structure of BRAF(V600E) (pdb id: 6P3D), CSF1R signalling (pdb id: 6WXJ), HER2 complex (pdb id: 7JXH), while their ADMET properties enabled the development of drug candidates with an improved pharmacokinetic profile. The QSAR studies indicated a good correlation between the aurone scaffold and potential anticancer activity. Moreover, these studies have shown that the structures of aurones can be modified to optimize their potency, selectivity, and efficacy. This review summarizes the current understanding of the anticancer activity of aurones, focusing on the computational approaches that have been utilized to explore their potential and these studies suggest that Aurones could be used as novel therapeutic agents for the treatment of cancer in the future.

Keywords: Aurones, Molecular docking, ADME/T studies, 6P3D, 6WXJ, 7JXH, QSAR

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Poster Presentation

Novel Identification of Kinase Inhibitors Targeting PI3Ka Against Non-Small Cell Lung Cancer: A Computational Study

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Abstract:
Non-small cell lung cancer (NSCLC) is an obscure disease whose incidence is increasing worldwide day by day, and PI3Kα is one of the major targets for cell proliferation due to the mutation. Since PI3K is a class of kinase enzyme, and no *in silico* research has been performed on the inhibition of PI3Kα mutation by small molecules, we have selected the protein kinase inhibitor database and performed the energy minimization process by ligand preparation. The key objective of this research is to identify the potential hits from the protein kinase inhibitor library and further to perform lead optimization by a molecular docking and dynamics approach. And so, the protein was selected (PDB ID: 4JPS), having a unique inhibitor and a specific binding pocket with amino acid residue for the inhibition of kinase activity. After the docking protocol validation, structure-based virtual screening by molecular docking and MMGBSA binding affinity calculations were performed and a total of ten hits were reported. Detailed analysis of the best scoring molecules was performed with ADMET analysis, induced fit docking (IFD) and Pharmacophore modelling. The ZINC245126 molecule was considered lead molecules and showed better results than the PI3K inhibitor Copanlisib in the docking assessment, ADMET analysis. Furthermore, the synthetic accessibility of the compound obtained from the ZINC database was investigated using SwissADME, and the lead molecules are easier to synthesize than the PI3K inhibitor Copanlisib. Computational drug discovery tools were used for identification of kinase inhibitors as anti-cancer agents for NSCLC in the present research.

Keywords: Kinase enzyme, Pharmacophore Modelling, ZINC database, ADMET, Copanlisib.

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Poster Presentation

The Wound That Won't Quit;Acral Lick Dermatitis In A Dog

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Abstract:

Dogs often suffer from a skin condition called acral lick dermatitis (ALD), also known as acral lick granuloma or acral pruritic nodule. This condition is characterized by frequent biting, licking, and scratching of certain skin areas, often leading to severe inflammation or infection. ALD can be a frustrating and painful condition for both dogs and their owners, and it can significantly impact their quality of life. There are several primary organic causes that can contribute to the development of ALD, including atopic disease, cutaneous adverse food reactions, flea allergic dermatitis, bacterial or fungal infections, parasite disorders (such as demodicosis or scabies), prior trauma, joint disease, foreign bodies, neoplasia, neuropathy, or hormone abnormalities. On the other hand, primary psychogenic disorders such as anxiety, boredom, attention seeking, stress, stereotypic or obsessive-compulsive disorder (OCD), and others can also contribute to the development of ALD. In this presentation, we will discuss the case of a 4-year-old unneutered female Doberman with ALD, who constantly licked her front paw, leading to significant injury. After extensive physical and laboratory examinations, no somatic disorder was found, and a wood lamp examination ruled out fungal infection. Scraping for scabies was negative, and medical treatment was initiated with systemic antibiotics for the deep bacterial infection, as well as Rilexine 600 mg and fluoxetine 1 mg/kg/day for behavior modification. In addition to medical treatment, environmental enrichment and puzzle feeding were used to address the underlying psychogenic disorder. After one month of treatment, the patient's condition significantly improved. It is important to note that ALD has behavioral and organic components and can be effectively treated with multimodal approach. Therefore, a thorough evaluation of the patient's medical history, physical examination, and behavioral assessment should be conducted to determine the underlying cause of ALD and the appropriate treatment plan.

Keywords: dog,behavior problems,acral lick,dermatitis,skin disease

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Poster Presentation

Investigation of phenolic, flavonoid, ascorbic acid, tannin, total antioxidant levels in different colored Hawthorn (Crataegus) fruits[#]

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Abstract:

Aim: The wild fruits are useful in the treatment of various ailments because they contain phytochemicals. Crataegus species are one of the most commonly used herbal medicines owing to their rich phenolic ingredients. In this study, it was aimed to investigate the antioxidant, phenolic components, flavonoids and ascorbic acid content of yellow (semi-ripe) and orange (ripe) hawthorn fruits in different colors. Yellow (semi-ripe) and orange (ripe) hawthorn fruits, which naturally grown by themselves, were collected from 10 different sources in the autumn season in Çorum. Extracts of hawthorn berries were prepared. The amount of antioxidant, phenolic components, flavonoids and ascorbic acid in hawthorn fruits were determined by spectrophotometric method. Dark colored hawthorn fruits had higher phenolic, flavonoid, total antioxidant and total protein content, but this was not statistically significant ($P>0.05$). It was determined that the tannin level was higher in light colored (semi-ripe) hawthorn than dark (ripe), but this was not statistically significant ($P>0.05$). Ascorbic acid level was found to be significantly higher in light colored (semi-ripe) hawthorns ($P<0.05$). It was determined that the amount of total phenolic substance, flavonoid, total antioxidant and total protein increased with the progression of maturation, while the amount of tannin and ascorbic acid decreased. In conclusion, due to have bioactive component and antioxidant capacity, hawthorn fruits might be recommended for using as alternative therapy.

Keywords: ascorbic acid, antioxidant, hawthorn, flavonoid, phenolic.

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Poster Presentation

Evaluation of a Methyl cellulose-based Hydrogel Matrix as a Potential Insulin Carrier

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Abstract:

Aim: Hydrogels are an alternative to conventional ointment bases. They have the advantage of compatibility with human tissues, absorption of large amounts of water, and mucoadhesive properties. They show efficacy in the treatment of chronic wounds and exudative lesions. Hydrogel matrices have also found application in the development of hormone therapies. Intensive research is currently underway to develop a hydrogel form of insulin. This hormone has been found to influence the wound-healing process by reducing the inflammatory response. A positive effect of insulin on healing mechanisms in diabetic foot syndrome has also been observed. Currently, there is no available hydrogel preparation of insulin in the pharmacy market. The aim of our study was to develop a methyl cellulose-based insulin hydrogel carrier for topical application. The hydrogel matrix was prepared from methyl cellulose (Fluka Chemie GmbH, Switzerland). Two insulin formulations were used: Actrapid® Penfill® and Insulatard® Penfill® (Novo Nordisk, Denmark). The concentration of insulin in the polymer matrix was 1 mg/g hydrogel. The effect of the type of insulin on its pharmaceutical availability was analysed in vitro. The rheological parameters of the formulations developed (methyl cellulose - Actrapid® Penfill®/formulation F1; methyl cellulose - Insulatard® Penfill®/formulation F2) were investigated. 75% of the insulin was released from the F1 hydrogel after 9 h, whereas 90% of the insulin was released from the F2 hydrogel after 9 h. Insulin release from both formulations occurred in a prolonged manner, providing a prolonged effect of the hormone over time. The release profiles are best described by the Korsmeyer - Peppas model. Rheological studies confirmed that the hydrogels belong to pseudoplastic, shear-thinning liquids with yield stress. The obtained test results indicate good application properties of the developed formulations. Hydrogels are a promising direction for the development of an insulin carrier.

Keywords: hydrogel, insulin, methyl cellulose.

This research was funded by the Medical University of Silesia in Katowice No. PCN-1-053/K/2/F.

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Poster Presentation

Mixture of bee bread with honey - nutritional and microbiological characterization

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Abstract:

Bee bread is a bee product prepared within honeycombs, through the fermentation of bee pollen collected and partially processed by bees. The nutritional composition of this product enhances its market value. It is rich in proteins, essential amino acids, simple sugars and fatty acids and is seen as a functional food. Despite these interesting properties, bee bread is not properly valued by beekeepers, partly due to the limited access to scientific information and to the difficult extraction process. In addition, its nutritional richness, together with the existing microbiota, can hinder the process of preservation of bee bread, particularly when handling practices are not adequate. This work aims to contribute to a greater valorization of bee bread, through its use in the design of a differentiated product with increased stability, resulting from the mixture of bee bread with honey. The bee bread and honey mixture, as well as the raw materials, were characterized through the analysis of their physical-chemical (water activity, moisture, ash, protein, and fat contents) and microbiological (aerobic mesophiles, yeasts and molds, lactic acid bacteria, sulfite-reducing clostridium spores, coliforms, *E. coli* and *Staphylococcus aureus*) parameters. Major nutritional differences were observed between honey and bee bread in the protein and fat contents. Bee bread showed high contents of both components (20.3±0.3% protein and 3.9±0.4% fat), against very low or undetected levels in honey (0.29±0.02% of protein and undetected fat). The mixture showed a balanced content of both components, considering the proportion of each raw material (6.2±0.2% protein and 1.2±0.2 fat). Thus this approach seems an interesting option in terms of nutritional parameters, when compared to the highly consumed honey. Microorganisms were detected at very low levels, except for coliforms and *E. coli*, which were not detected. The low water activity of the mixture (0.5±0.2) is an important preservation parameter.

Keywords: beekeeping, bee products, innovative product, preservation

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ONLINE 14-15-16 APRIL 2023

Poster Presentation

Ethanolic extract of Polish propolis as a cariostatic agent - a preliminary study

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Abstract:

Dental caries is a chronic, endogenous infection that poses a major healthcare problem worldwide. It is caused by commensal oral microflora that forms biofilms on the surface of teeth, as well as the intake of carbohydrates, primarily sucrose. The development of caries is also influenced by the susceptibility of the tooth surface and, importantly, time. Dental plaque, a natural biofilm that contains oral bacteria and their metabolic products, can contribute to caries formation. The main causative agent of dental caries in humans is *Streptococcus mutans*, which produce lactic acid through the bacterial fermentation of sucrose and other carbohydrates in the diet. This acid directly destroys the enamel layer by dissolving tooth minerals, resulting in caries. Selected pharmaceutical raw materials of natural origin, including propolis exert inhibitory effects on biofilm formation and caries development. The bacterial oral strains engaged in biofilm-forming – used in this study – obtained from the American Type Culture Collection (ATCC, Manassas, VA, USA): *Streptococcus mutans* ATCC 33535, *Streptococcus salivarius* ATCC 13419, *Streptococcus mitis* NC IMB 13770, *Streptococcus oralis* ATCC 6249. Bacteria were grown on blood agar with 5% CO_2 at 37^{o}C. To evaluate the antimicrobial activity of the ethanolic extract of Polish propolis we used the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC). Our experiment has shown that the MIC was 25 µg/mL - 50 µg/mL EEP for strains, however, the MBC was 50 µg/mL - 100 µg/mL EEP for tested strains. The obtained results convincingly indicate the bacteriostatic and bactericidal effect of propolis on selected species of streptococci responsible for the formation of a biofilm on the tooth surface and the development of caries.

Keywords: propolis, dental caries, bacteriostatic effect, bactericidal effect, biofilm

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Poster Presentation

Novel Molecule Identification For UNC-51 LIKE KINASE 1 (ULK -1) role In Heart Regeneration Via Autophagy -Computational Study

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Abstract:

MI is an acute cardiac injury caused by blockage of the coronary blood supply, usually due to the rupture of an atherosclerotic plaque. Studies have shown that in humans and adult mice, cardiomyocytes can regenerate, but the regenerative capacity is very low, i.e., < 1% annually. This is, therefore, a very ineffective way to replace the diseased tissue. In contrast to mammals, zebrafish possess a highly efficient adult heart regeneration capacity, and so they are a valuable model organism for studying the regenerative response following myocardial damage due to resection of the ventricular apex, or cryoinjury, or genetic cardiomyocyte depletion. It is also possible that the membrane source may vary depending on the site of autophagosome formation in the cell in addition to the target substrate. Initiation begins with the de-repression of Unc-51 like kinase 1 (ULK1), which is maintained in the inactive, phosphorylated state (pULKI-Ser-757) by mammalian target of rapamycin (mTOR). Inhibition of mTOR allows ULK1 to activate a Class III PI3K complex, consisting of Beclin-1, Vps15 and Vps34. Once active, the PI3K complex initiates phagophore nucleation with assistance from other autophagy proteins. Here some standard drugs considered they responsible for active in heart regeneration by blocking ULK1 enzyme those are – metformin ,resveratrol and rapamycin .Based on this I approached computational docking and modelling two molecules have a better affinity towards above enzyme.

Keywords: Kinase enzyme, Pharmacophore Modelling, ZINC database, ADME,Metformin, and Rapamycin.

Third International Congress on Biological and Health Sciences
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Poster Presentation

Effects of Recreational Horse Assisted Activities to Overcome Animal-Fear on People with Special Needs [#]

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Abstract:

It is the whole of activities that are based on entertainment and recreation, which are done voluntarily without being subject to any rule, gain, or continuity, and that increase and refresh the cognitive, physical, and social health, quality of life of the person. Hippotherapy is a form of physical, occupational and speech therapy in which a therapist uses the characteristic movements of a horse to provide carefully graded motor and sensory input. Under the scope of Hippotherapy Turkey project, we have been implementing recreational/introductional activities with horses with special needs kids, and adults as pre-therapy activities. The children who participated in the activities were also the children who applied to our project for hippotherapy. They participated in horse-assisted activities in our therapy center for 2 hours a week. The activities were organized according to the disability status and level of the children. Children who regularly participated in the activities did activities on topics such as meeting horses, how to approach horses, and horse care. As a result of our observation, regular exposure to horse-assisted recreational activities in our center helps children who are afraid of big animals such as horses. They participated in horse-assisted activities, then participated in therapy sessions. It was observed that children who participated in the activities beforehand adapted to the sessions faster.

Keywords: Recreation, hippotherapy, adaptation.

[#]The project, and the activities within the project are funded by EU Delegation to Turkey under “Reach to Health” title of “Support to Civil Society Networks in Türkiye, 2019” call.

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Poster Presentation

Outbreak of Foot-and-Mouth Disease (FMD) Serotype South African Territories 2 (SAT2) in Turkey

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Abstract:
Foot-and-mouth disease (FMD) is one of the most contagious and acute animal viral infection affecting cloven hoofed mammals such as cows, pigs, sheep, and goats. Rather than the mortality, the most important impact of this globally distributed viral disease is economic including productivity loss, fertility drop, diminished milk and meat production as well as restrictions on international trade in animals and animal products from the affected areas. FMD virus has seven distinct strains (O, A, C, Asia 1, SAT1, SAT2 and SAT3) with the C serotype that is thought as extinct and not seen in the world for almost 20 years. Except C, other serotypes immunologically worldwide where they can be subdivided into several numbers of topotypes, lineages and sublineages. The virus is endemic in some parts of the Africa, Middle East, Asia and South America regions also, outbreaks of the virus can occasionally occur in countries where it is not thought to be endemic. FMD is also endemic in Anatolia region of Turkey and current circulating viral strains were O, A and Asia 1. However, in March 2023, in Turkey, the first case of SAT2 strain of FMD infection has been detected in a cattle. In following period, provincial livestock markets are closed down and inter-city animal transport is prohibited until further notice. After a short period of time, Şap Institute Directorate has produced a vaccine against the SAT2 serotype. In this poster presentation, it is aimed to describe the current situation of SAT2 outbreak in Turkey; to explain the epidemiology of SAT2 and preventive measures that can be taken against this strain in a globally accepted way specified by World Organization of Animal Health (WOAH), European Commission for the Control of FMD (EuFMD) and Food and Agriculture Organization (FAO); and to make future predictions about the SAT2 outbreak and general FMD situation in Turkey.

Keywords: FMD, SAT2, epidemiology, WOAH, EuFMD

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Poster Presentation

Sustainable Nutrition and Its Importance in Reaching Sustainable Development Goals

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Abstract:
The aim of this study is to explain importance of sustainable nutrition and the scope of sustainable nutrition models in achieving sustainable development goals. All titles containing the word "sustainable nutrition" were scanned on the PUBMED database. The compilations between 2016-2023 were reviewed. Sustainable nutrition is defined by the Food and Agriculture Organization of the United Nations and the World Health Organization as diets that have low environmental impact, are accessible, affordable, safe, fair, culturally acceptable, and that support the health and well-being of individuals in all its dimensions. Sustainable nutrition is important in achieving goals such as protecting the environment and a healthy and quality life, which are among the Sustainable Development Goals, which are aimed to be achieved by 2030. By 2050, it is estimated that the world population will reach 10 billion on average. It is thought that protecting planetary well-being while providing a nutrient-dense diet for everyone will become a global issue. At this point, sustainable nutrition and sustainable food systems come to the fore. The European Commission's statement titled “A Clean Planet for All” highlights the importance of changing consumers' food choices in order to improve health and neutralize greenhouse gas emissions by 2050. Many stages, especially food production, transportation and storage of food, cooking and waste management, contribute significantly to the formation of greenhouse gas emissions and thus carbon footprint. Most of the greenhouse gas emissions occur during the agriculture phase; In order to achieve a significant reduction in greenhouse gas emissions, people need to change their food choices and reduce food waste and food loss. It is known that food production has an important place in the use of water resources. 92% of the water used worldwide is used for food production. 29% of the water used in agriculture is used directly or indirectly for the production of animal foods. In particular, animal products require more water per energy unit than plant-derived products. Finally, it is noteworthy that the number of studies on sustainability in our country is low. It is thought that more research and compilation is needed on this subject.

Keywords: sustainable nutrition, sustainability, footprint

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Poster Presentation

Contribution of the Sidi M'Hamed Ben Taïba "SMBT" dam to irrigation and drinking water supply in the Wilaya of Ain Defla (Algeria)

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Abstract:
The Sidi M'Hamed Ben Taïba dam of the wilaya of Ain defla is located on the Ebda valley immediately at the meeting of two valleys located to the north, valley Ferhat and valley El Had (ANBT 2020). The location represents an important resource for agricultural irrigation and drinking water supply (AEP). The objective of this work is to determine the role of the water of the dam in the improvement of agriculture in the region by the irrigation of large areas of the perimeters on the one hand, on the other hand in the improvement socio-economic through drinking water supply. The results of the study showed that this watershed has an area of 273 km ^{2} that it will mobilize a total volume of 75 million m3 for an annual adjustable capacity of 56 million, the dam successfully responds each year to the agricultural needs of the perimeters of El- Amra and El- Abadia with a net area of 8500 Ha (41hm ^{3}). And with the presence of a waste water treatment plant, it will also provide additional drinking water for the agglomeration of Ain Defla, and the towns of Khemis Miliana, Sidi Lakhdar, Arib, Mekhatria and Al - Amra (15hm ^{3}) of a number of 250,000 inhabitants. The dam occupies a strategic place in the socio-economic development of the Wilaya and the country in general.

Keywords: Dam, Sidi M'Hamed Ben Taïba, agricultural needs, drinking water supply.

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Poster Presentation

Optimization of phenolic compounds recovery and antioxidant evaluation from prickly pears using response surface methodology

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Abstract:

Opuntia ficus indica is a *Cactaceae* plant rich in many bioactive compounds, and grows generally in arid and semi-arid regions of the world. The extraction of bioactive compounds from plants could be done by numerous methods according to the economic aspects, means, and method suitability for targeted compounds. This study aimed to optimize the conditions for extraction of phenolic compounds by decoction and to evaluate antioxidant activities from prickly pears edible parts (seeds, pulp, and fruit) using response surface methodology. The highest total phenolic compound (TPC) results for seeds, pulp, and fruit were 335, 568, and 524 mg GAE/100 g DM, respectively. The highest scavenging activities of ABTS were 1822, 4208, and 3174 µmol TE/100 g DM, while the reducing power (RP) was 210, 201, and 239 AAE/100 g DM, for seeds, pulp, and fruit, respectively. According to the statistics, with an exception of time with the TPC and RP responses, all the investigated parameters had a significant effect on the extractions. The Response surface analysis determined the values of 90 °C, 1 g/100 mL, and 30 min as the optimums for temperature, sample/solvent ratio, and time, respectively (except a ratio of 1.8 g/100 mL for the fruits). In conclusion, the decoction method appears to be a great way to extract antioxidant compounds from prickly pears, whose compounds were found to be heat resistant.

Keywords: Prickly pears, Decoction, Extraction conditions, Phenolic compounds, Antioxidant activity.

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Poster Presentation

Evaluation of the Synergistic Potential of Mixtures of Yerba Mate and Cocoa Husk Extracts with Antioxidant Power

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Abstract:
Phenolic compounds are a diverse group of natural compounds that exhibit a range of biological activities, including antioxidant, anticancer, antimicrobial, cardioprotective, and modulatory effects on intestinal microbiota. Two sources of polyphenols, yerba mate (*Ilex paraguariensis*) and cocoa husk (*Theobroma cacao* L.), were studied in this research. The objective was to assess the synergy between different combinations of yerba mate aqueous extracts and cocoa husk hydroalcoholic extracts, as well as the effect of lyophilization on the extracts' properties. The study evaluated the total polyphenol content (TPC) using the Folin-Ciocalteu method and antioxidant capacity by measuring the ABTS radical scavenging capacity assay (TEAC). Results indicated that an increase in the concentration of cocoa extract in the fresh extracts resulted in higher antioxidant capacity. The highest value was obtained from the 40:60 mixture of cocoa husk and yerba mate extracts (2203.69 ± 0.99 µmol Trolox®/g dry sample). However, a different trend was observed for lyophilized extract mixtures. The higher the concentration of yerba mate extract, the higher the TEAC value. The 80:20 and 75:25 combinations (1308.35 ± 56.4 and 1298.16 ± 85.7 µmol Trolox®/g dry sample, respectively) showed greater anti-radical effects compared to the other mixtures. These two combinations did not differ significantly in their TEAC values at the significance level ($p<0.05$). These findings suggest that combining cocoa extract in amounts between 20 and 25% with yerba mate extract increases the antioxidant capacity of the mixture. In terms of TPC, lyophilization decreased TPC values for both fresh and lyophilized extracts of yerba mate and cocoa husk. However, the different mixtures of these lyophilized extracts showed an increase in TPC and antioxidant capacity. The 80:20 and 75:25 mixtures had the highest TPC values, 206.08 ± 1.44 and 224.40 ± 3.46 TPC (mg EAG/g extract), respectively. The research findings contribute to understanding the potential use of yerba mate and cocoa husk extract mixtures in functional food formulations that promote bioavailability in the intestine. Additionally, the use of an agro-industrial residue such as cocoa husk could enhance the anti-radical response and total polyphenol content of a mixture with yerba mate extract as the main component.

Keywords: yerba mate, cocoa husk, polyphenols, functional foods

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Poster Presentation

Pollen as a Novel Ingredient for Functional Foods: Characterization and Antioxidant Properties

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Abstract:

Human health depends on many factors such as people lifestyle, genetic, and nutrition, among others. The consumption of functional foods (foods containing health-giving additives) is mandatory for managing health through nutrition. A healthy diet is often based on natural products that contains bioactive compounds like antioxidants, those capable of reducing the oxidative stress derived from the biochemical reaction within the cells. Bee pollen has been underestimated as a functional ingredient for a long time. However, numerous studies place pollen as a natural promising ingredient for functional foods due to its nutritional composition. The objective of this work was to characterize bee pollen from "pampeana" Argentinian region and determine its antioxidant properties. Multiflora pollen samples were obtained from beehives located in Balcarce (Buenos Aires province, Argentina). Color of the pollen grains was determined with a Chroma meter, and their morphology was observed by scanning electron microscopy (SEM). FTIR spectroscopy was performed on pollen powdered samples. The composition was carried out using the protocol of the AOAC and Argentine regulation. The total phenolic and flavonoid content, antioxidant activity ($DPPH^{\bullet}$ and $ABTS^{+}$), vitamin C, and β-carotene were determined on pollen extracts (1g/10 mL ethanol). Color coordinates values (L*=59.62±1.48, a*=5.33±1.14, b*=31.23±1.91) indicate that the yellow pigment was predominant, and it could be attributed to carotenoids. The visual observation of the pollen grains at naked eye allowed to infer different botanical origin of the pollen samples. This result was confirmed by SEM. Percentage values of moisture content (16.29±0.06), water activity (0.341±0.004), ash content (2.84±0.11), proteins (21.88±0.02) and lipids (6.59±0.36) are all of them within the Argentinian regulations, except the moisture content. Composition results of the vitamin C (7.07±2.87 mg ascorbic acid/100g), β-carotene (51.64±3.79 μg/g), total polyphenols (69.28±2.47 mg gallic acid/g), flavonoids (0.62±0.07 mg quercetin/g), $DPPH^{\bullet}$ (EC_{50}=3.35 mg/mL) and $ABTS^{+}$ (33.46±1.00 μg Trolox/g) suggest that bee pollen is an interesting source of phytochemicals with biological activity. The FTIR spectrum shows the typical absorption bands of the chemical groups from polyphenols, organic acids, sugars, and proteins. These results indicate that pollen could be included in the list of functional ingredients with positive effects on human health.

Keywords: pollen, bioactive compounds, antioxidants, functional food

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Poster Presentation

Effects of defenses on the preservation and rehabilitation of medicinal plants in the Algerian steppe (case of the Wilaya of Djelfa).

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Abstract:

Medicinal plants are a precious heritage for humanity, they are natural chemical factories, producing biochemical active substances: alkaloids, essential oils, flavones, tannins, and make them available to humanity who can use them for his health and satisfy his vital needs. In Algeria exactly in the steppe zones the medicinal plants are endangered because of the degradation of the rangelands which is the result of anthropogenic pressure combined with adverse climatic hazards. As part of a national strategy to combat desertification and silting, the Algerian state has undertaken various restoration and rehabilitation actions, namely; The defensive of steppe, and pre-Saharan rangelands. The present work aims to study the effect of defensing on the conservation, rehabilitation and restoration of medicinal plants, compared to floristic diversity to undeveloped rangelands in the Wilaya of Djelfa. From the studies, we can perceive the interest and the positive effect of the defense that records ecological advantages. It promotes the natural regeneration, and the biological rise of medicinal plants, and the increase of the vegetal cover, and consequently increase of the phytomass. While several pastoral (medicinal) species threatened with extinction have made their return and resettlement such as: *Artemisia campestris, Artemisia herba-alba, Hammada scoparia, Gymoncarpos decander, Peganum harmala, Ziziphus lotus, Juniperus phoenicea L. Artiplex halimus L. …*

Keywords: Algerian steppe, defens, medicinal plants, Algeria.

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Poster Presentation

Prevention of Individuals Mental Health Problems and The Effects on Mental Health Through Hippotherapy.

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Abstract:

Approximately 970 million people worldwide struggle with mental health problems, and one in every four individuals is affected by mental health issues at some point in their lives. Mental, neurological, and behavioral illnesses account for 12.3% of all diseases. Each year, 800,000 people die by suicide, with a significant portion of them being young people. One in every four young people spends their life with a parent who has a mental health disorder. These individuals experience problems such as anxiety, depression, personality disorders, substance abuse, and schizophrenia. Between 2009 and 2020, antidepressant use in Turkey increased by 70%, and early measures are not being taken to address these issues. Hippotherapy treatments offer positive contributions to the mental and psychological health of individuals. In low- and middle-income countries, more than 75% of people do not receive treatment for depression. In Turkey, only 4.7% of adults seek treatment. Hippotherapy treatments support individuals' mental health, enabling the early screening and detection of mental health issues before they become more significant problems and ensuring that therapies are received regularly. As a result, mental and psychological problems can be prevented from escalating, reducing suicide rates, the incidence of mental health issues, and more.
Hippotherapy is a complementary treatment that significantly increases the success rates of other treatments. It can be used in coordination with other psychological therapies, all aiming towards the same health objectives."

Keywords: mental health, individuals, hippotherapy, psychological problems

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Poster Presentation

Histological description of the gonads in smooth scallops (*Flexopecten glaber*) caught in Black Sea waters near Cape Shabla

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Abstract:

Assessing the possibility for cultivation of the smooth scallops (*Flexopecten glaber*) along the Bulgarian Black Sea coast requires very-well knowledge of the reproductive tissues and the changes occurring during reproductive processes. Thus, the study`s aim was to investigate and evaluate the histological structure of reproductive organs and anatomy of the *Flexopecten glaber* caught in Black Sea. The samples were collected in June 2022 from commercial fishing in Black Sea waters near Cape Shabla. The shell length and weight of each mussel were measured and recorded. The study was carried out by making histological preparations of gonads in adult smooth scallops. Hematoxylin and eosin (H&E) staining procedure was used for overview of tissue structures. The histological structure of the gonads of scallop was identified and described. The results of current investigation expand the field of knowledge on anatomy and histology of the smooth scallops.

Keywords: Histology, Reproductive organs, Scallop

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Poster Presentation

The effect of *Lactobacillus acidophilus* probiotic administration on amyloid protein and TNF-α levels in testicular tissue in rats fed a high-fat diet

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Abstract:
Overweight and obesity are chronic and costly inflammatory diseases. The aim of the study was to investigate the effects of *Lactobacillus acidophilus* probiotic supplementation on cholesterol, triglyceride and amyloid (TBP) protein and TNF-α levels in testicular tissue in obese rats induced by high-fat diet (HFD). Male Sprague-Dawley rats (n = 28) were randomly divided into four groups: Group-1, the control group given standard rat chow (SD); Group-2, high-fat diet (HFD) fed group; Group-3; consumed SD and administered *Lactobacillus acidophilus* probiotic; Group-4; consumed HFD and applied *L. acidophilus* probiotic. After 12 h of fasting, the testis tissues were removed by sacrification/euthanasia using the cervical dislocation method under general anesthesia and anesthesia/tranquilizer. Total cholesterol and triglyceride levels in testis tissue of rats were measured by spectrophotometric method. TNF-α and total beta amyloid protein (TBP) levels in testis tissue were determined by ELISA. Total cholesterol levels were found to be higher in HFD groups (Group-2, and -4) compared to control and probiotic groups (Group-1, and -3) ($P<0.05$). The triglyceride levels were found to be significantly higher in the HFD groups (Group-2, and -4) compared to the control group ($P<0.05$). It was observed that the levels in Group-4 decreased compared to Group-2, but this was not statistically significant ($P>0.05$). TNF-α levels were found to be significantly higher in Group-2 compared to the other groups ($P<0.05$). TBP levels weres the highest in Group-2 and decreased in the probiotic supplement ($P>0.05$). It has been observed that *L. acidophilus* probiotic supplement could be used as a supportive supplement with a positive effect on reducing cholesterol and triglyceride levels, inflammation and amyloid protein levels in the testicular tissue of obese male rats induced by HFD.

Keywords: amyloid protein, *Lactobacillus acidophilus*, TNF-α, testicular tissue

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Poster Presentation

Glugea sp. infecting *Sardinella aurita* in Algeria

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Abstract:

Parasitological examination of the commercially important pelagic fish *Sardinella aurita* Valenciennes, 1847 (Clupeidae) from the Eastern coast of Algeria revealed xenomas in the peritoneal cavity, suggesting a microsporidian infection. The prevalence of the disease was approximately 30% on average, higher in smaller individuals and showing significant seasonal variation. The xenomas contained numerous ellipsoidal spores, surrounded by a dense layer of connective tissue. Spore sizes were 6.10 ± 0.38 µm length and 3.54 ± 0.43 µm width. Ultrastructural examination by transmission electron microscopy showed various development stages of the parasite, including meronts, sporonts, sporoblasts and mature spores. The internal organization of the mature spores, with a single nucleus, prominent posterior vacuole, a lamellar polaroplast and an isofilar polar tube arranged in a single row, was typical of the genus *Glugea*. The DNA sequence of the small subunit ribosomal RNA gene confirmed that this parasite belongs to the genus *Glugea*. Genetic and morphologic comparison with *G. sardinellensis*, a species previously described in the same host from Tunisia shows many similarities, although some molecular and morphometric inconsistencies precluded the unambiguous assignment of our samples to *G. sardinellensis*. At the same time, we do not find sufficient grounds to erect a new taxon for our parasite. We discuss the implications of our findings for the current state of the systematics of *Glugea*.

Keywords: *Sardinella aurita*, *Glugea*, Ultrastructure, SSU rDNA, Algeria.

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Poster Presentation

Ethnobotanical Study Of Medicinal Plants In The Tiaret Region (Algeria)

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Abstract:

Since antiquity, man has used various plants present in his environment, for his medicinal and nutritional needs in order to treat and cure all kinds of diseases. In Algeria, we have always had recourse to traditional medicine thanks to the richness and diversity of flowering in our country, which constitutes a real reservoir of the plant. In this context, this work is devoted to the study of plants medicines used in traditional herbal medicine in the treatment of diseases in the region of Tiaret, Algeria. A series of surveys was carried out in the study area with herbalists, inhabitants, to acquire as much information as possible concerning the therapeutic uses of medicinal plants practiced by the local population. After analyzing the information received, the most used medicinal plants are those belonging to the Lamiaceae family. The results of the ethnobotanical study showed that the leaves and stems are the most widely used part. The preparation of medicinal plants is done in various ways, namely infusion (38.5%), decoction (35.2%). These results can be considered as a source of information for scientific research in the field of phytochemistry and pharmacology.

Keywords: Tiaret, herbal medicine, surveys, ethnobotany.

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Poster Presentation

Detection of Co-Infection in Diseased Guppy (*Poecilia reticulata*)

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Abstract:

The guppy (*Poecilia reticulata*) is one of the world's most popular freshwater aquarium fish. The aim of the present study is to determine the cause of mortality in guppies obtained from the ornamental fish farm in Istanbul province and to detect the tissue damage that occurred. Externally diseased guppies showed sloughing scales, large ulcerative skin lesions on the body surface. Bacteriological inoculation from internal organs were made onto Tryptic Soy Agar (TSA). After incubation, isolated bacteria were identified as *Aeromonas hydrophila* and *Vibrio parahaemolyticus* according to their psychological, morphological and API 20E profile. As a result of the parasitological examination, *Tetrahymena* sp. were found on skin of the diseased guppy. Histopathologically, cytoplasmic vacuolation in the liver, degeneration and necrosis of the tubular epithelium and granuloma-like structure in the kidney, hyperplasia of the gill and also *Tetrahymena* sp. between necrotic muscles and even enterocytes were observed. Co-infection of guppy was determined to cause severe disease and tissue damage. The synergistic effects of pathogens may cause more damage to diseased guppy.

Keywords: guppy, *Tetrahymena* sp., *Aeromonas hydrophila, Vibrio parahaemolyticus* histopathology.

Third International Congress on Biological and Health Sciences
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Poster Presentation

Study Of The Physico-Chemical Characteristics Of Raw And Purified Wastewater From The Sewage Treatment Plant Of The City Of M'sila

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Abstract:

Urban waste water is one of the main sources of environmental contamination, and treatment becomes mandatory. Our study was conducted at the treatment plant of urban waste water from the city of M'sila, whose purpose is to determine the physico-chemical characteristics of these waters as well as the performance appraisal process this station in order to make an estimate of the potential danger that treated wastewater presents to the receiving environment. The samples were taken at the entrance and exit of the wastewater treatment plant, we analyzed 6 samples, the physico-chemical parameters analyzed are: temperature T°, pH, biological oxygen demand BOD_5, chemical oxygen demand COD, suspended matter M.E.S, hardness TH, nitrate NO3. The results obtained showed that the raw wastewater is characterized by high levels of BOD_5, COD and M.E.S as well as a greenish gray color, due to the presence of a high load of organic matter, an average temperature of around 18°C and a slightly basic pH favorable to biological treatment in the wastewater treatment plant. Conversely to treated wastewater, which has physic-chemical characteristics (BOD_5, COD, M.E.S and NO_3) generally in accordance with Algerian regulations on wastewater discharges. This shows the effectiveness of the treatments used, therefore the positive performance of the urban wastewater treatment plant in the city of M'sila.

Keywords: urban wastewater - organic materials - M'sila - environment - wastewater treatment plant.

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Poster Presentation

Parasitofauna of red mullet *Mullus barbatus* (L, 1758) caught in the Gulf of Bejaia, Algeria.

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Abstract:

Red mullet *Mullus barbatus*, Linnaeus, 1758 is an important component of the Mediterranean demersal resources exploited by bottom trawl and small-scale fisheries. It is a benthic fish living on sandy and muddy bottoms, showing a marked preference for shelf bottoms (5–250 m), although a wider bathymetric range has been reported in some Mediterranean areas. It is a species whose exploitation is of strategic importance for Algeria in economic and social terms. Parasitism is one of the stressors that can negatively impact the condition of these fish; therefore, marine parasitology can be an essential tool that provides important information on the state of aquatic ecosystems. The composition of the parasitic fauna was determined from the examination of 95 specimens caught in the Gulf of Bejaia, between the months of July and September 2018. Samples were examined in the laboratory for their parasites. All parts of the fish body have been thoroughly examined. The study allowed us to identify 9 species of parasites in *mullus barbatus*, *Hysterothylacium sp*.; *Hysterothylacium aduncum*; *Hysterothylacium fabri*; *Anisakis simplexe* (nematoda); *Anilocra physodes*; *Anilocra frontalis*; *Nerocila maculata* (crustacea); *Lernaeolophus sultanus*; *Hatschekia mulli* (Copepoda). Our results show a variation in parasite infestation of *mullus barbatus*.

Keywords: *Mullus barbatus*, gulf of Bejaia, parasitofauna, identification.

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Poster Presentation

Exploring the possible mechanism of a cystine moiety in the treatement of Parkinson's Disease – A Compuational Approach

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Abstract:

Parkinson's disease (PD) is a progressive neurodegenerative disease with roughly 6.1 million individuals affected globally. Currently there is no cure for PD, medications are only available for symptomatic alleviation. This study is aimed to test the therapeutic potential of the selected cystine moiety in the treatment of PD using *in silico* methods. Target proteins in complex with the standard drugs which are related to PD were retrieved from PDB. The retrieved proteins where preprocessed and the docking was performed using AutoDock 4.2. The docking score and the amino acids interactions of the test moiety were compared to the standard drug. ADMET properties of the test moiety were taken using SWISSADME. Out of all the selected proteins MMP3 (matrix metalloproteinase-3) and DJ-1 proteins have showed the closest docking scores compared to the standard drugs and have retained some of the amino acid interactions from the standard drugs. Molecular dynamics simulation of 100ns was carried out for the selected complex which revealed the selected drug retains its stability in comparison with the apo protein. This indicates, the selected cystine moiety has the potential to mimic the standard drugs action in two protein pathways. Thus, may be a possible candidate in the treatment of PD. The cystine moiety can be further tested for its therapeutic activity in PD using *in vitro* and *in vivo* models.

Keywords: Parkinson's disease, Molecular Docking, Molecular Dynamics, Cysteine

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Poster Presentation

Physıologıcal And Molecular Responses of Strawberrıes Plants to Abıotıc Stress

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Abstract:

The most widely cultivated strawberries (Fragaria x ananassa Duch.), is a low-growing herbaceous perennial, known for its delicate fragrance, flavor, and rich vitamin and mineral. Plants are subjected to a wide range of environmental stresses which reduces and limits the productivity of agricultural crops. Abiotic stress is the negative impact of non-living factors on living organisms in a specific environment. Salinity, Drought and temperature (high or low) are the major abiotic stresses that affects the growth and Productivity of plants. Because of the year-round production of strawberry plants, they are often exposed to extreme environmental conditions. As plants are sessile in nature, they have no choice to escape from these environmental cues. Plants have developed various mechanisms in order to overcome these threats of abiotic stresses. Strawberry plants show a grate variation in their environmental responses. To decrease the effects of abiotic stresses, the resistance of cultivated strawberry to abiotic stress needs to be increased. While genetic resources within domesticated varieties are limited, wild genotypes are predicted to show high heritable variation in useful resistance traits. The diploid strawberry F. vesca has been an attractive model plant for genomic analysis because of its small genome size.

Keywords: *Fragaria x ananassa* Duch., abiotic stress, salinity, drought, temperature, growth, response

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ONLINE 14-15-16 APRIL 2023

Poster Presentation

Identification of Carbonic Anhydrase IX Selective inhibitors: An AI based Computational approach

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Abstract:

Cancer is a disease in which body's cells grow uncontrollably and spread to other parts of the body. Breast cancer originates in breast tissue and occurs when breast cells mutate and grow out of control, creating a mass of tissue. Carbonic anhydrase (CA) IX is one of the proteins that are involved in carcinogenesis in hypoxic breast tumours. It is present in high amounts in hypoxic tumor cells, where it plays a crucial role in metabolic reprogramming due to the scarcity of oxygen, triggered by the hypoxia inducible factor 1 transcription factor. The current treatment for the breast cancer has side effects such as fertility issues, alopecia, heart failures etc., Hence, new drugs have to be identified for carbonic anhydrase IX enzyme for the better treatment of breast cancer. Computer-aided drug design (CADD) includes finding, developing and analyzing medicines and related biological active compounds by computer methodologies for the speeding up drug discovery. Machine learning (ML) techniques improve the decision-making in pharmaceutical data across various applications like QSAR analysis, hit discoveries, de novo drug architectures to retrieve accurate outcomes. ML tools and techniques are enforced in every phase of drug development to accelerate the research process and deduce the risk and expenditure in clinical trials. Here, we applied different supervised ML algorithms like Random Forest, Neural Network, Tree, SVM and KNN to develop ML model. We found out that Tree model has showed the best predictive activity with the r^2 value of 0. 952. Hence, the developed ML model can be utilized to identify potent molecules which will be further evaluated for anticancer activity using *in vitro* and *in vivo* models.

Keywords: Breast Cancer, Carbonic Anhydrase IX, Machine Learning

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Poster Presentation

Identification of Poly Adp-Ribose Polymerase-1 (PARP-1) inhibitors: An AI based Computational approach

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Abstract:

Cancer is a disease in which body's cells grow uncontrollably and spread to other parts of the body. Cancerous cells may break away from tumors, using lymphatic system or bloodstream to travel to other areas of your body. Breast cancer occurs when breast cells mutate and grow out of control, creating a mass of tissue (tumor). The most common type of breast cancer begins in the milk producing ducts but cancer may also begin in the lobules or other breast tissue. Poly (ADP-ribose) polymerases (PARPs) are a family of cell signaling enzymes present in eukaryotes, which are involved in the poly(ADP-ribosylation) of DNA binding proteins. PARP-1 works as DNA damage nick sensor, stimulated by DNA strand breaks, and PARP-1 activation is required for initiation of DNA repair. Proficient DNA-repair in cancer cells constitutes a major factor responsible for tumor resistance to radiotherapy. Therefore, inhibiting DNA repair in tumor cells by interfering with PARP-1 function is a rational therapeutic strategy to enhance the effects of radiation. Computer Aided Drug Design (CADD) is a modern computational technique used in the drug discovery process to identify and develop a potential lead. Large-scale screening of chemical libraries can aid in the identification of bioactive lead compounds. However, the effectiveness of screening these libraries is impeded by associated expenses and limited chemical diversity. To address this problem, we trained a machine learning (ML) model, highly diverse virtual library of natural products. We took supervised ML models such as Random Forest, Neural Network, Tree, SVM and KNN models to test on train data and model have been developed. We found out that Tree model has showed the best predictive activity with the r^2 value of 0. 92. Hence, the developed ML model can be utilized to identify potent molecules which further evaluated for anticancer activity using *in vitro* and *in vivo* models.

Keywords: Breast Cancer, Machine learning, PARP-1, CADD

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ONLINE 14-15-16 APRIL 2023

Poster Presentation

Antioxidant And Anti-hemolytic Activities Of *Lavatera cretica*

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Abstract:

Lavatera cretica is a plant that belongs to Malvaceae family. It is used in folk medicine to combat various health issues such as inflammations. Few studies were conducted on the antioxidant activity of the plant, while, no works were established to check its anti-hemolytic potential. The aim of the present study is to make phytochemical screening of the ethanolic extract constituents of *Lavatera cretica* leaves and to study its antioxidant and anti-hemolytic activities. The quantification of total phenols and flavonoids were performed using Folin-Ciocalteu and aluminium chloride colorimetric method, respectively. It was noted that the ethanolic extract contains a content of 3.85±1.85 mg GAE/g DM in total phenols and a rate of 17.25±0.57 mg QE/g DM in flavonoids. The study of the antioxidant power of the extract revealed a trapping rate of 70.23 ± 2.92 % for the DPPH radical, 50.73 ± 4.51% for the ABTS and 94.74 ± 2.24 % for H_2O_2. The highest percentage of hemolysis inhibition induced by a hypotonic solution was recorded in red blood cells treated with the extract at a concentration of 0.5mg/ml with an inhibition of 97.52 ± 1.04 %. Thus, the study concludes that *Lavatera cretica* showed antioxidant and anti-hemolytic properties that could be used for the isolation of therapeutic compounds and for the development of pharmaceuticals.

Keywords: *Lavatera cretica*, ethanolic extract, antioxidant, anti-hemolytic, phenolic compounds.

Third International Congress on Biological and Health Sciences
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Poster Presentation

Aggression Toward Reflective Surfaces in a Dog

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Abstract:

Aggression is a prevalent problem that prompts dog owners to seek behavioural support. Dogs may exhibit different types of aggression, including fear, conflict, predation, owner-directed, and inter-dog aggression. In our study, we observed a 7-year-old castrated male Rottweiler presenting with a unique form of aggression. The dog displayed aggressive behaviours upon seeing its own reflection on a reflective surface, such as a mirror, glass, or puddle. Behavioural examination revealed that the dog was socially compatible with conspecifics and humans, and the owner reported no previous instances of aggressive behaviour towards living beings. Treatment has been initiated with risperidone at a daily dose of 1mg/m^2 and a systemic desensitization therapy program, supplemented with a comprehensive environmental enrichment plan. A week after the initiation of treatment, the owner reported a significant decrease in the dog's aggression towards mirrors; however, the animal continued to exhibit a persistent staring behaviour towards reflective surfaces. A month after the onset of treatment, the dog had become entirely unresponsive to such surfaces and drug therapy has been seized at the end of the second month. To date, there have been no documented occurrences of dogs demonstrating selective aggression towards reflective surfaces within the extant literature. The rapid and effective treatment response to risperidone support to the idea that this abnormal behaviour may be caused by a perceptual aberration.

Keywords: Aggression, Dog, Risperidone

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ONLINE 14-15-16 APRIL 2023

Poster Presentation

Liraglutide Treatment in an Obese Male Cat

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Abstract:

Liraglutide, a GLP-1 analogue, is commonly used to treat type 2 diabetes and is now being used to adjust obesity and weight loss. This poster presentation will describe a liraglutide treatment experience in an obese male cat. Liraglutide is a drug that increases insulin secretion and reduces appetite by increasing satiety. Recent studies suggest that liraglutide may also be effective in treating obesity in cats, regulating blood sugar levels, and reducing insulin resistance. Some of the potential benefits of using liraglutide in cats may include promoting weight loss, regulating blood sugar levels, reducing insulin resistance, and suppressing appetite. A 4-year-old neutered male cat weighing 16 kg with a body condition score of 9 was treated with 0.6 ml subcutaneous injections of liraglutide twice weekly for two weeks. On the day of admission, total biochemistry and hemogram tests were performed, and glucose was measured as 285. The measured values were found to be within the reference ranges based on the conducted examinations. Ultrasound examination revealed no pathology in the liver or pancreas. At the end of the treatment, the cat's weight decreased to 13.750 kg, and there were no changes in liver parameters. These findings suggest that liraglutide may be a safe and effective treatment option for feline obesity, although further studies are needed to determine its long-term efficacy and safety in cats.

Keywords: GLP-1 analogue, Liraglutide, Obese cat

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Poster Presentation

Isolation of Obligate Intracellular Bacteria in vivo Conditions

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Abstract:

The parathrophic bacteria such as *Chlamydia* spp. and *Rickettsia* spp. obtain the carbon and energy necessary for their life from the biosynthetic events of the host cell. Bacteria are of two types: extracellular bacteria that live freely in the environment and intracellular bacteria such as *Salmonella* spp., *Francisella* spp., *Legionella pneumophila, Listeria monocytogenes*, and *Yersinia* spp. that establish infections in the host cell cytoplasm or specialized vacuoles. The obligate intracellular bacteria usually require an obligate host cell for replication, including *Chlamydia* spp., *Anaplasma* spp., *Ehrlichia* spp., *Rickettsia* spp., and Coxiella burnetii. The isolation of obligate intracellular bacteria for serological tests or bacterial stocks under laboratory conditions for diagnostic or experimental purposes can only be carried out in living environments. In vivo conditions such as cell culture, experimental animals, and embryonated chicken eggs are used to produce obligate intracellular bacteria. Cell cultures are more advantageous in terms of suitability for laboratory studies due to the absence of care-feeding problems, immunological reactions, sterility, etc. as in experimental animals. This review aims to present brief information about the in vivo conditions that are widely used in medical and biological research and to provide quick details about these conditions.

Keywords: obligate intracellular bacteria, cell cultures, experimental animals, chicken eggs embryos,

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Poster Presentation

Estimation Of Stray Dog Population in One Health Context as A Baseline for Rabies Control in Lahore, Pakistan

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Abstract:

Rabies is a zoonotic disease with severe issues in developing countries. Stray dogs share a major contribution to human rabies mortalities every year. To control rabies, the stray dog population should be controlled. This study aimed to estimate the stray-dog population in one health context as the baseline for rabies control in Lahore. The present study was confined to four major zones of Lahore namely Allama Iqbal, Data Gung Bakhsh, Ravi, and Samanabad Zone. Direct Count Method and Photo Capture-Recapture (Hiby's Sight-Resight Software Method) were used for estimation purposes. The total area of four zones was 628.06 (km-2) while the average area for four sampled zones was 157.01 ± 121.09 (km-2). The stray dog population for the sampled zones was found to be 13351 by Direct Count, and 17985 by Hibys estimate. With results extrapolated to the whole of Lahore, the resulting stray-dog population was 38277 by Direct Count Method and 51562 by Hiby's Method. The Stray-dog population density (km-2) for Lahore was found to be 21 km-2 by Direct Count Method and 29 km-2 by Hiby's Method. The study concludes that there is a considerable stray dog population in the study area that poses a major threat to public health. To achieve the Zero by 30 goal and rationale for stray dog control strategy, such baseline studies are necessary.

Keywords: dog population estimation, dog bites, one health, rabies, zoonotic

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Poster Presentation

Pulmonary Radiologic Monitoring in Post COVID (Long COVID) Syndrome

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Abstract:

Long covid is a general term for a disease in people who have survived COVID-19, where the lasting effects of the disease have started or where the usual symptoms of the disease persist for much longer than expected. Imaging methods have played an important role in the diagnosis of COVID-19 during the pandemic. Especially, computed tomography (CT) is very important in identifying changes in the lung with its high sensitivity and specificity. Respiratory complaints after COVID-19 infection are seen in a spectrum of mild upper respiratory symptoms. However, patients may also develop more serious illnesses, up to acute respiratory distress syndrome (ARDS). Since most studies do not include control group, it cannot be determined whether the abnormalities observed on CT are due specifically to COVID-19 infection or to diffuse alveolar damage. There are different approaches for monitoring. By evaulating the results, imaging modalities such as chest radiography, CT angiography or Thorax CT should be used if necessary . Specific medical imaging scans are recommended to combat long COVID, taking into account the symptoms and sequelae of different organ involvement. Conclusion: The important role of radiologic imaging modalities during the diagnosis of COVID 19 and evaluation of response to treatment is thought to continue in the evaluation of patients with long covid syndrome in the light of clinical and laboratory findings.

Keywords: Computed tomography, Long COVID, Radiography.

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Poster Presentation

Nutrition of Stray Animals from Past to Present

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Abstract:

Domestic animals living outdoors without any owner or guardian neither caring nor supervision are defined as stray animals. Although the term stray animal covers all animal species, today cats and dogs come into mind. The care and feeding of stray animals is a process that has continued from the Ottoman period to the present day. During the Ottoman period, many foundations were established to take care of dogs, cats and other stray animals, and people called Mancacı were appointed. In order to feed the hungry wolves and birds that come to cities and towns, especially during extreme weather conditions, they are regularly fed with meat or non-carcass components, millet, wheat and grass in certain areas. In addition, special shelters were established near the soup kitchen, spare food were collected and delivered to strays. Also near public water supply, stone water troughs were built for drinking water. Gurebahâne-i Laklakan, the world's first and only stork hospital, was established in Bursa in the 19th century, and it continues to serve after being renovated in accordance with its original form in 2010. This tradition, which comes from history, is determined by law and carried out by municipals and suburban council and also by volunteer organizations today. For this purpose, vaccination, sterilization and feeding areas during treatment were created in temporary animal shelters by local governments. At the end of the process; they are left to their natural habitats. These animals are fed and water supplied in these reservation areas. In addition, non-governmental organizations voluntarily feed in these areas or in forested areas with high animal populations. For the feeding purposes, dry food made from food waste, butcher waste, commercial food is preferred. Not only stray animals, in order to support wildlife, feeding strategies are carried out in natural habitats by the Ministry of Agriculture and Forestry during the winter months. In the conclusion; in order to prevent food waste, it will be important to collect and process restaurant and food wastes by local governments and to use of them as food for stray animals, in terms of preventing economic, social and environmental problems.

Keywords: Stray animal, nutrition, food, historical period.

entation

Cinnamon; A Nutraceutical Supplement for Heart Health

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Abstract:

According to traditional medicine in Iran and India; cinnamon is warm and dry, improves coughing, shortness of breath, and thick phlegm. It's sedative, used for stomach ache, liver, and postpartum pain, kidney stimulant for urinary retention, relieving fever, and reduction of joint and back pain. The main components of cinnamon are cinnamaldehyde, cinnamic acid, cinnamate and eugenol. *Cinnamon* is used as an anti-atherosclerotic treatment by reducing high cholesterol, insulin resistance, stabilizing blood sugar and maintaining LDL. Ingesting 6 g cinnamon daily lowers triglyceride and total cholesterol in type 2 diabetes. Cinnamon can be helpful to reduce inflammation that is triggered by obesity and removal of excess weight, is useful for heart health. Using cinnamon extract capsules (250 mg/kg body weight) in type 2 diabetes for two months reduced total cholesterol, HDL and LDL. In another study, using 100 mg cinnamon /kg body weight for two weeks had significant antioxidant ability in reducing the complications related to oxidative stress, and increased total antioxidant power by reducing lipid peroxidation. The consumption of 500 mg cinnamon /kg body weight in type 2 diabetics patients for 2 months reduced blood sugar and lipid. Daily consumption of 1 g cinnamon powder /kg body weight for 16 months in type 2 diabetic cases reduced the diabetes complications. Cinnamon is generally safe when used in small amounts; no more than 1 teaspoon per day that is safe for most adults, with less for children. Usually, it's used about 1-6 g daily, depending on the height and weight. Less than 1/8 teaspoon could be enough for some people; for some others it will be up to 2 1/2 teaspoons. Therefore, cinnamon has an effective role in preventing and improving cardiovascular disease by lowering blood lipids, blood pressure, and improving the oxidants: antioxidants balance.

Keywords: cinnamon, cardiovascular disease, blood lipids, cholesterol

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Poster Presentation

A Study On Clinical Outcome Of Septic Patients Receiving Intravenous Vitamin C

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Abstract:

Sepsis is a life-threatening organ dysfunction due to dysregulated host response to infection, which is a leading cause of morbidity and mortality worldwide. Despite standard treatment, the mortality rate for patients with septic shock is 25-40%. The present study is designed to evaluate the efficacy of high-dose Intravenous vitamin C in septic patients and thus consider it an adjuvant therapy in septic shock. During six months, approximately 50 patients were treated in the Critical Care unit of a tertiary care hospital, this prospective and interventional study to compare the clinical outcomes septic shock patients on standardized treatment with/without intravenous high dose vitamin C. The effect of vitamin c in reduction of vasopressor requirement in the patients with septic shock. To estimate the improvement in SOFA and APACHE II score in septic patients after receiving IV Vitamin C. Compare the length of stay (LOS) of both control and treatment group in CCU. To reduce the mortality of sepsis patient correlates with observed expected mortality ratio. A total of fifty patients diagnosed with sepsis and progressing to septic shock in our department were randomly divided into two groups: the control group (25 cases) and the test group (25 cases). The data was collected and then analyzed using Microsoft Excel and SPSS version 26. Summary statistics were used to describe the clinical data and presented as means or percentages as appropriate. The results demonstrate improvement in clinical outcomes such as: 30-day mortality, APACHE II and SOFA scores, length of ICU stays, duration of vasopressor therapy, suggesting that the septic shock resolves more rapidly in test group than in control. The data ofthis study is limited by a shorter duration and a smaller sample size. Therefore, more research would determine the role of vitamin C in septic shock patients.

Keywords: sepsis, septic shock, vitamin C, CCU, adjunctive therapy

The study was financially supported by the institution.

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Poster Presentation

Study of the antimicrobial activity of *Salvia officinalis* L. from the Tiaret region (Algeria)

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Abstract:
Many medicinal plants contain chemical compounds with different biological properties. Several research works have been focused on the essential oils of these plants. Our stadyok has contributed to the valorization of the essential oil extracted from the aerial part of *Salvia officinalis* L. harvested in the region of Tiaret (Algeria), and to evaluate in vitro the antibacterial activity of this oil obtained by the technique of hydrodistillation. These results are due to different factors such as the harvesting period, the extraction method, the nature of the soil, and the geographical location. The antibacterial effect of the essential oil *Salvia officinalis* L. tested by the disc diffusion method gives an efficiency against *S. aureus* while *E. Coli* shows some resistance. Therefore it is better to use this essential oil against pathogenic germs than antibiotics. For the antibacterial activity evaluated, it appears that the essential oil has a significant antibacterial power on the pathogenic germs studied. The growth inhibition varies according to the bacterial species and the concentration of the tested product. The MIC of these strains is about 4 mg. mL^{-1} for *Staphylococcus aureus* and that of *Escherichia coli* 8 mg. mL^{-1}. The ratio CMB/CMI of oil of *Salvia officinalis* L. on *Escherichia coli* and *Staphylococcus aureus* are equal to 16. The studied essential oil thus seems to exert a bactericidal action against *S. aureus* and *E. coli*. So the oil of *Salvia officinalis* L. has a bacteriostatic effect on the studied bacterial strains (*E. coli and S. aureus*).

Keywords: *Salvia officinali*, essential oil, antibacterial activity, MIC, CMB.

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Poster Presentation

Assessment of the Functional Potential of Two Autochthonous Lactic Strains of Lactobacilli Isolated from Algerian Dairy Products

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Abstract:

In cheese technology, milk coagulation is an essential step in which the use of a ferment may be a selected strain or a mixture of strains that do not all have the same performances and biotechnological properties, and leads to a great variation in the quality of the cheese produced. The present study aimed to highlight the biotechnological abilities of two strains of Lactic Acid Bacteria (LAB) indigenous to our Algerian dairy products, *Lactobacillus acidophilus* and *Lactobacillus brevis* which were revived and confirmed controlled by the determination of physiological and morphological characteristics and a comparative phenotypic re-characterisation with reference strains ATCC 4356 and ATCC 14869. This study focused on monitoring their growth kinetics, their hydrogen potential, their fermentation profile and their proteolytic activity on cheese milk. Both strains performed well with very good growth kinetics, good hydrogen potential for cheese processing and an excellent proteolytic profile (proteolytic activity at 1, 2 and 3%). The performance of these strains revealed good biotechnological aptitudes in terms of cheese application and cheese ability criteria, for lactic coagulation and good cheese maturation. This assessment leads us to conclude that these strains could be used in cheese application either in single or mixed culture and an opportunity of use in a lactic or mixed enzymatic cheese making technology with lactic dominance.

Keywords: technological aptitude, *Lactobacillus acidophilus*, *Lactobacillus brevis*, milk coagulation, cheese ability

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Poster Presentation

Review on *Toxoplasma gondii*

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Abstract:

In this work, the protozoan of Toxoplasma gondii and its history is reviewed. Toxoplasma gondii is intraculluar parasite belonging to the phylum of apicomplexa. It is a common protozoa of warm-blooded animals and it distrubutes worldwide, causing infectionin eyes's retina, brain and other postions of the body. CDC repoted that taxoplasmosis is one of neglected disease. The first discovery of this intracelluler was parasite in 1908, and later in 1957 was detected causing abortion in animal. İn 1970, it was the first time for recoginzing the life cycle of it, they were found that cats (felids in general) are the final host and the stage of oocyst is occuring in the stool of infected cats. For preventin, T.gondii can be prevent by hygeine and it considers the only way preventive measure because vaccanation technology is not discovered yet for toxoplasmosis prevention in human.

Keywords: *Taxoplama gondii*, parasitology, biology, epidemiology, biogeography

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Poster Presentation

Nigella Sativa: A Natural Weapon Against Oral Infections

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Abstract:

Nigella sativa, also referred to as black seed, has attracted interest for its pharmacological activities, which include antibacterial, antifungal, antiviral, and anti-inflammatory properties. Oral infections pose a serious hazard to health and, if left untreated, can result in severe complications. The goal of this review study is to give a thorough overview of the available research regarding Nigella sativa's possible role in the prevention and treatment of oral infections. According to a literature review, Nigella Sativa has considerable antimicrobial activity against a number of oral pathogens, such as Streptococcus mutans, Candida albicans, and Porphyromonas gingivalis. The active ingredients, particularly thymoquinone, have been demonstrated to damage the microbial membrane, resulting in their demise. Additionally, the immunomodulatory and anti-inflammatory qualities of Nigella Sativa can aid in the management of periodontal illnesses. Clinical studies have demonstrated the safety and effectiveness of Nigella Sativa extracts in lowering plaque buildup, enhancing gingival health, and managing halitosis. The evidence in this study suggests that Nigella Sativa may be a promising all-natural remedy for the prevention and treatment of oral infections. To establish its clinical efficacy and to perfect its dosage and delivery method, more study is however required. As a result, more research for potential applications of Nigella sativa in oral health care is needed.

Keywords: Nigella sativa, black seed, oral infections, antimicrobial activity, oral health.

INVITED SPEAKERS

Third International Congress on Biological and Health Sciences
ONLINE 14-15-16 APRIL 2023

Invited Oral Presentation

Antibiotic Resistance Threat

Ali AYDIN
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Abstract:
Antibiotics have made significant contributions to the treatment of bacterial diseases in humans and animals. However, depending on whether the antibiotics are not completely metabolized or completely removed from the body, antibiotic residues can be found in the tissues and organs of the animals and in animal foods. Especially, the frequent and uncontrolled use of the same group of antibiotics in animals and humans is an important factor in increasing antimicrobial resistance. The OECD warned that superbug infections could cost the lives of around 2.4 million people in Europe, North America, and Australia over the next 30 years unless more is done to stem antibiotic resistance. The European Union Summary report provides an overview of the main findings of the 2020-2021 harmonized antimicrobial resistance monitoring in Salmonella spp., Campylobacter jejuni, and C. coli in humans and food-producing animals. Additionally, for animals and meat thereof, indicator Escherichia coli on the occurrence of antimicrobial resistance and presumptive Extended spectrum beta-lactamases producers, as well as the occurrence of methicillin-resistant Staphylococcus aureus are also investigated. Global strategy studies and surveillance programs have been put into practice in order to control antibiotic resistance, mainly WHO, OIE, and FAO, national and international right-wing organizations in USA and Germany. Additionally, it is important to educate food producers and consumers about the use of conscious antibiotics in order to raise awareness in this regard. Finally, the most immediate need is to develop strategies for improved antimicrobial stewardship (in both human and veterinary medicine), produce antimicrobial natural drugs, and develop effective and sustainable alternative approaches to deal with microbial disease in both humans and livestock.

Keywords: Antibiotic resistance, global threat, public health

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ONLINE 14-15-16 APRIL 2023

Invited Oral Presentation

Potential for Application of Encapsulation Technology in the Meat Industry to Improve Effectiveness of Polyphosphates on Quality and Safety of Ready to Eat Meat Products

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Abstract:
Improving meat safety and quality has been an important issue. Meat product processing is vital for microbial contamination in a ready-to-eat (RTE) meat products. Lipid oxidation is a reaction limiting the quality and acceptability of meat products. Contamination of RTE meat products with pathogens or spoilage microorganisms may cause serious foodborne illnesses. Thus, meat processors and researchers are searching for strategies to control potential bio-hazards. Food additives are used to control the growth of undesirable microorganisms in muscle foods. Polyphosphates (PP) are used in meat processing for their beneficial effects such as improved water binding capacity, textural attributes, curing process and reduced lipid oxidation. PP also is able to inhibit the growth of some bacteria and yeast. Phosphatase enzymes naturally found in raw meat have a ability to hydrolyze PP into shorter-chain length PP. As a result, PP may loss some of their antioxidant and antimicrobial properties. Encapsulation is very promising technology for protecting PP from enzymatic hydrolysis caused phosphatases by enrobing PP into capsules. Previous studies demonstrated that encapsulated (e) PP maintained antioxidant capabilities of PP in muscle foods. Therefore, this review summarizes previous studies about utilization of ePP to improve antioxidant and antimicrobial properties of PP in meat products.

Keywords: Polyphosphates, meat, safety, quality, encapsulation.

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Invited Oral Presentation

Pollen spectra in propolis and geopropolis from Mexican stingless bees

Elia Ramírez-Arriaga

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Abstract:

Propolis and geopropolis have numerous therapeutic properties, such as anti-inflammatory, antimicrobial, antifungal, antioxidant, anti-ulcer, antithrombotic, antiallergic, antiasthmatic, anticarcinogenic and antitumor effects, among other properties. In this work, propolis and geopropolis of five stingless bees: Melipona beecheii, Nannotrigona perilampoides, Plebeia frontalis, Scaptotrigona mexicana and S. pectoralis from tropical regions of Mexico were studied and palynologically evaluated. Each sample was placed in a glass jar containing EtOH and shaken daily for one week. They were filtered before acetolysis. The palynological results displayed that polliniferous taxa dominate in the pollen spectra and pollen grains from plants considered to be resin sources were documented in a lower amount. The best represented families in the pollen spectra were Fabaceae, Malvaceae, Loranthaceae, Myrtaceae, Asteraceae, and Piperaceae. The most abundant taxa for M. beecheii were Miconia sp., Mimosa bahamensis, M. pudica, and Senna sp., while Piper sp. was particularly abundant in the propolis samples of N. perilampoides. In addition, Heliocarpus appendiculatus, M. pudica, and Struthanthus sp. were common in N. perilampoides, P. frontalis, S. mexicana, and S. pectoralis in Veracruz. Most taxa were part of the secondary or original vegetation of tropical evergreen and deciduous forests or cloud forests; some others were cultivated plants. The highest values for richness and diversity (H') were found in the propolis samples of N. perlampoides, S. mexicana and S. pectoralis. The pollen grains found from Acacia, Alnus, Bursera, Eucalyptus, Fraxinus, Liquidambar, Piper, Toxicodendromium, Ricinus communis, Pinus, Salix, Alnus and Polypodiaceae spores are known to produce resins (balsams). The propolis and geopropolis spectra showed enrichment of pollen grains from polliniferous plants probably inside the colony. In addition, fungal spores, hyphae, plant debris, and rare clays were found in all pollen collections.

Keywords: propolis, geopropolis, palynology, stingless bees, Mexico.

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Invited Oral Presentation

Effects of different thickening agents on the colour and texture characteristics of jelly kelle paça (khash)

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Abstract:

Kelle paça is a traditional Turkish soup whose main ingredient is the head and feet of lamb, goat or beef. The other ingredients are onions, water, salt and spices. Jelly kelle paça is a product obtained by cleaning the head and feet of lamb, goat or beef and boiling them in salt water, then filling them into casings. In recent years, due to the increasing demand for fast food, jelly kelle paça has been produced to facilitate the preparation of the popular kelle paça soup. In the production of jelly kelle paça, starch is generally used to ensure gelation. The aim of this study was to determine the effects of different thickening agents on the colour and texture properties of jelly kelle paça samples. Seven different jelly kelle paça samples were produced: T1: starch (control group); T2: gelatine; T3: pectin; T4: starch and gelatine; T5: starch and pectin; T6: gelatine and pectin; and T7: starch, gelatine and pectin. Different thickeners decreased the L* and b* values of the samples compared to T1 (control group) ($P < 0.05$). T4 had higher a* values than T3 ($P < 0.05$). While gelatine (T2) increased the hardness of the jelly kelle paça samples, the lowest hardness values were found in samples T5, T6 and T7 ($P < 0.05$). Pectin decreased the springiness values of the samples ($P<0.05$). The different thickeners had no influence on the cohesiveness of the samples ($P > 0.05$).

Keywords: hardness, meat industry by-product, traditional Turkish soup, thickener

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Invited Oral Presentation

Bioactive potential of aromatic and medicinal plants traditionally used in Algeria.

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Abstract:
Algeria is known to have a rich biodiversity, with many endemic species of medicinal plants. This has provided an ideal environment for the traditional use of medicinal plants in Algeria for the treatment of various ailments. Several species of plants are known to possess a variety of bioactive metabolites, including alkaloids, terpenoids, flavonoids, phenolic compounds, and essential oils. These compounds have been used for centuries to treat a variety of conditions, such as inflammation, pain, infections, and cancer. The potential of Algerian medicinal plants for bioactive metabolites has been studied in recent years, with promising results. For example, ext racts from Ammi visnaga, a species of medicinal plant native to Algeria, have been found to possess anti-inflammatory, antimicrobial, and antioxidant properties. Similarly, Zygophyllum album, a species of shrub found in Algeria, has been found to possess anti-inflammatory, antifungal, and antioxidant activities. In addition, several compounds from Algerian medicinal plants have been shown to possess anti-cancer properties. Extracts from the root of Anisoptera costata, a species of shrub native to Algeria, have been found to possess anti-tumor.

Keywords:

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Invited Oral Presentation

The effect of starvation and its role in aquaculture

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Abstract:

Starvation is defined as deprivation of food for a prolonged period of time and has many effects on the physiological and morphological processes in hydrobionts which can cause permanent internal organs damage. From the other side interferes with the ability to absorb nutrients and caloric intake, which directly influence the growth parameters of animals, an object of aquaculture. Studies reveal significant influence during starvation on biochemical parameters, namely: total protein, globulins, aspartate aminotransferase, alanine aminotransferase, creatinine and calcium, phosphorus. Likewise, the microscopic findings confirmate hepatic steatosis and hyperemic liver blood vessels. A small part of the cells' nuclei were smaller and intensively stained which indicates karyopicosis. In others, chromatin was collected in small clumps along the nuclear membrane (hyperchromatosis), while in other species dystrophic processes were necrobiotic. In contrast, the practice of skip-a-day (SAD) feeding is a relatively mild form of starvation, which is not routinely used in aquaculture, but recent studies have shown that feed conversion efficiency increases in fishes previously subjected to starvation. It remains to be seen whether controlled starvation protocols can provide similar economical benefits for aquaculture.

Keywords: Aquaculture, Fasting, Inanition, Malnutrition, Starvation

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Invited Oral Presentation

Microplastics in fishery products: sources, fate and impact on health

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Abstract:

During the last decades, the attention of the scientific community on the environmental impact of microplastics (MPs) and the related hazards for human health has grown strongly. Plastic fragments have been found in the water surface, along the water column, collected from the beaches until deep-sea sediment and in several marine vertebrates and invertebrates. MPs are classified based on their sources in primary (manufactured in that size) and secondary (by fragmentation), related to their morphological aspect and chemical composition. Secondary fibres plastics are the most widespread in the marine environment and polyethylene and polypropylene are the commonest polymers identified. Their ubiquitous and bioavailability in the marine environment has aroused concern, especially for the interaction with marine organisms intended for human consumption. Ranging in size from 1 μ to 5 mm, MPs are small enough to be easily ingested by biota at all trophic levels. The suspension filter-feeding biota, since their efficient filtering apparatus, have been often chosen as model organism to monitor their spatial and temporal pollution gait in coastal water. Once ingested, MPs may determine mechanical damage and different inflammatory response causing alteration of the normal physiological functions and sub-lethal effects. Furthermore, MPs may also transfer chemical hazards as additives associated to the industrial manufacturing processes or adsorbing pollutants from the surrounding environment becoming a possible pathway of toxic chemicals in the food chain. Nowadays, little is known regarding MPs occurrence in seafood and the real levels of human exposure, and related risks, are poorly understood. Furthermore, despite a large amount of data available, their comparison could be misleading considering the different techniques often used for sample processing. In this scenario, studies on MPs occurrence in marine organism intended for human consumption and an estimate of the exposure to persistent organic pollutants via MPs ingestion are desirable for a correct risk assessment.

Keywords: Plastic, microplastic, nanoplastic, polymer, risk assessment

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Invited Oral Presentation

Application of Enzymes in Meat Industry

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Abstract:
Enzymes are used in the food industry widespread to modify and enhance the nutritional value, and functional and sensorial characteristics such as color, smell, and flavor of different types of food products. nowadays. The most common application of enzymes in red meat products is to increase the meat tenderness. The toughness of beef meat produced from dairy cattle is related to the volume of connective tissue, mainly collagen. Proteolytic enzymes have the potential to tenderize lower-grade meats and increase their market value. Consumers' demand for fresh meat without undesirable excessive fat and salt content leads the manufacturer to consider new possibilities of enzyme application to increase the carcass efficiency by using more effective slaughtering techniques. The utilization of enzymes to maximize the by-products' efficiency is an undeniable possibility. The common by-products of the poultry industry are feathers, which can be digested by enzymes and applied for animal feed and also nonfood industries such as films, coating, and packaging due to their high amount of keratins and hydrophobic amino acids. Fat, bone, and mechanical flesh are common by-products of meat processing, which can be digested by enzymatic reactions and used for their special meat properties. Enzymes also can be applied in seafood processing for deskinning and descaling, production of caviar, and recovery of by-products. In the current chapter, the potential application of enzymes in the meat, poultry, and seafood industry will be discussed.

Keywords: Meat, Poultry, Seafood, Enzymes, Preservation

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Invited Oral Presentation

The current status of zoonotic *Anisakis* parasites in marine fish from Turkish marine coasts

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Abstract:

Anisakiasis is a fish–borne zoonotic disease caused by the larval stages of *Anisakis* nematodes. The life cycle of these nematodes involves various hosts such as semiplanktonic and planktonic crustaceans (first intermediate), squids and marine fish (intermediate or paratenic), and marine mammals (definitive/final). Consumers can be infected within the life cycle by consuming raw or undercooked intermediate hosts, and they act as accidental hosts. *Anisakis* nematodes may present a health risk for consumers. The accidental consumption of infected raw or poorly cooked fish may cause gastroenteric diseases and allergies in humans. *Anisakis pegreffii* and *Anisakis simplex* sensu stricto have been identified as agents of human anisakiasis. There are our studies on the occurrence and molecular identification of zoonotic *Anisakis* species in marine fish caught in Turkish territorial waters. A total of 1145 fish belonging to 31 different species of teleosts captured in the sea cages farms (farmed *Oncorhynchus mykiss*, *Dicentrarchus labrax*, *Sparus aurata*) and fishing-ground of different sites in the coastal waters of Turkey between March 2012 and April 2013. *Anisakis pegreffii*, *A. typica*, and hybrid were molecularly identified in chub mackerel (*Scomber japonicus*), Atlantic mackerel (*Scomber scombrus*), blue whiting (*Micromesistius poutassou*), European hake (*Merlucius merlucius*), John Dory (*Zeus faber*), Mediterranean horse mackerel (*Trachurus mediterraneus*), and red mullet (*Mullus barbatus*) from the Aegean and Mediterranean Sea. However, *Anisakis* larvae were not found in the different fish species (anchovy, horse mackerel, whiting, red mullet, turbot, sea bass, cultured Turkish salmon) from the Black Sea. In another study, a total of 272 red scorpionfish *Scorpaena scrofa* (Scorpaenidae) captured from the Gulf of Izmir in the Turkish Aegean coasts were examined for *Anisakis* larvae between March 2019 and March 2020. The present study provided the first comprehensive data regarding the presence of *Anisakis* larvae infecting *S. scrofa* in the Aegean Sea. *Anisakis pegreffii*, *A. typica*, and *A. ziphidarum* were genetically identified, and *A. typica* and *A. ziphidarum* have been reported in *S. scrofa* for the first time. Therefore *S. scrofa* is a new host record for mentioned *Anisakis* species. This study provided the first record of presence of *A. ziphidarum* in the Aegean Sea.

Keywords:

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The Immunomodulatory Properties of Honey

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Abstract:

Honey is a natural gift for the human population and it has been used for various purposes in human being's lives. There are many known health benefits of the honey and its products. The main health benefits reported in the literature include anti-diabetic, anti-inflammatory, anti-oxidant and anti-bacterial agent. The main constituent of honey is carbohydrate (approx. 75 %). It is also rich in enzymes, vitamins, minerals, flavonoids and phenolics. Immunomodulation is required to maintain the homeostasis by stimulating or suppressing the immune system which is helpful in fighting against cancer, diabetes and other diseases. Honey and its components have been shown to activate or suppress the release of anti- and pro-inflammatory compounds like cytokines and reactive oxygen species. There are several reports which suggest the positive effect of honey on the activation of both type of immune cells. The polyphenolics present in honey shown to possess promising chemopreventive effect on in-vivo models. The formulations based on honey are also reported to have significant wound healing properties. However, there is significant variation in the immunomodulatory behaviour among honeys of different origins. These studies are still in the preliminary stages and further characterization of honey and its component will enable the use of honey and its components in immunomodulation properties for the treatment of diseases like cancer and diabetes.

Keywords: Flavonoids, Immunomodulation, Inflammation, Honey, Wound healing

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Invited Oral Presentation

Can Bee Products Be Antivirals?

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Abstract:

Bee products, like honey, bee pollen, bee bread, royal jelly, and propolis, offer a vast richness of bioactive molecules with potent therapeutic potential, including antibacterial, antifungal, and antiviral activity. Flavonoids (e.g., rutin, naringin, luteolin, and artepillin C) are primarily responsible for the bioactivity of propolis and honey and were shown to inhibit important viral targets, viral-host interactions that trigger the inflammation and cytokine storm, and viral replication cycle. Additionally, various bee products have valuable nutritional potential due to their high sugar, protein, enzyme, amino acids, vitamins, and micronutrient content, making them potentially beneficial in the supportive treatment of viral infections. Moreover, natural honey and honey-containing medications have been used in folk medicine in many parts of the world to treat acute coughs during respiratory tract infections commonly caused by viruses.

Antiviral activity of bee products was also confirmed in vitro against some viruses, including herpesviruses, influenza viruses, respiratory syncytial virus, dengue virus, and human immunodeficiency virus. Bee products are also undergoing several clinical studies to evaluate their effectiveness in preventing and treating viral infections. Also, the extracts and formulations of propolis have been studied as adjuvants for bacterial, viral, and parasitic vaccines. The work presented herein aims to critically evaluate the antiviral potential of various bee products, with special emphasis on honey, bee pollen and propolis.

Keywords: antiviral, bee products, virus inhibition, viral enzymes, replication cycle

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ONLINE 14-15-16 APRIL 2023

Invited Oral Presentation

Caseinate based encapsulation of polyphenols of *Myristica fragrans* and *Cordyline terminalis*: Development, stability, bio-accessibility and biological activities

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Abstract:

Introduction: Plant polyphenols have recently gained attention in nutraceutical and pharmaceutical industries due to their various therapeutic potentials. However, the polyphenols are prone to oxidation, unstable towards heat, light, pH and alleviate these drawbacks and hence, effective encapsulation techniques have been implemented to overcome these drawbacks. In this study, microspheres of *Myristica fragrans* (*M. fragrans*) and *Cordyline terminalis* (*C. terminalis*) polyphenols were synthesized by using caseinate through the extrusion method and assesses the impact of caseinate encapsulation on stability, bioavailability and therapeutic properties.

Materials and Methods: The extracts of *M. fragrans* seeds and *C. terminalis* leaves were prepared by using 70% methanol. The resultant extract was used to synthesis the microspheres of *M. fragrans* and *C. terminalis* polyphenols by extrusion method using caseinate as matrix. Microspheres of *M. fragrans* and *C. terminalis* were studied for their stability, yield, size, and characterized by using SEM for surface morphology and evaluated for their bioavailability using *in vitro* simulated gastrointestinal digestion and therapeutic properties for a period of 12 months. Further, the effects of different temperatures at different time intervals on the release of polyphenols were studied. In addition, using HPLC & LC-ESI-MS, the potential phenolic compounds and their subclasses were also identified.

Results: The results showed that encapsulation was successful using extrusion technique and the stability of microspheres was maintained as it protected the polyphenols from degradation for a period of 12 months. By LC-ESI-MS, Flavones and Flavonols and Anthocyanidins appear to be more abundant in *C. terminalis* than in *M. fragrans*. In addition, bioavailability was also increased in small intestine and the antioxidant and antidiabetic properties were better maintained after encapsulation.

Conclusion: Overall, the findings showed that encapsulation of polyphenols from *M. fragrans* and *C. terminalis* with caseinate improved stability and can be a promising technique for food supplementation/ nutraceutical with natural antioxidants.

Keywords: Polyphenols, Antioxidant, Casein, *Myristica fragrans*, *Cordyline terminalis*

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ONLINE 14-15-16 APRIL 2023

Invited Oral Presentation

IMMUNOCHEMICAL STUDIES OF LOW-DENSITY LIPOPROTEIN (LDL): ROLE OF ELLAGIC ACID, A NEW ANTI-GLYCATING AGENT IN INHIBITION OF GLYCATION AND DIABETES MELLITUS"

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Abstract:

The worldwide prevalence of T2DM and its complications has been increased noticeably and tremendously contribute to global burden of disability and mortality. Hyperglycemia can cause damaging effect on main cell types that are unable to maintain their sugar level under diabetic condition cause imbalance of reactive oxygen species (ROS), reactive carbonyl species (RCS) and implicated its role in glycation. Glycation initiates with the non-enzymatic reaction of amino group of proteins and lipoproteins by carbonyl group of sugar moiety and intermediates of glycative stress such as methylglyoxal (MG). This may increase the formation of AGEs accumulate at a much higher rate in diabetic than in normal population, positively associated with inflammatory markers, endothelial dysfunction, insulin resistance, and vascular complications in diabetes. The main objective of the present study is to investigate the non-enzymatic glycation of low density lipoprotein (LDL) by MG at different concentration and at increasing incubation time period *in vitro*. Additionally, immunogenicity of native and MG modified LDL (MG-LDL) was probed in female rabbits *in vivo*. Till yet, no study stated the immunogenic role of MG induced glycated LDL in T2DM patient's sera on the basis of disease duration. Furthermore, the antiglycating property of natural bioactive compound ellagic acid (EA) was investigated at lower concentration in *in vitro* glycation model as well as in *in vivo* diabetic animal model (Wistar rats). EA treated diabetic animals plasma exhibited significant increased the level of reduced glutathione and decrease histological changes due to immunoreactivity in kidney tissue of male Wistar rats.

Keywords: Diabetes Mellitus, Glycation, Immunogenicity, Auto-antibodies, Ellagic Acid.

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ONLINE 14-15-16 APRIL 2023

Invited Oral Presentation

Role of WOAH in harmonisation of veterinary and para-veterinary education in Member counties

Dmitry Morozov

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Abstract:

In the presentation it was information about World Organisation (WOAH) for Animal Health and its role in the veterinary and para-veterinary education. It was presented a brief information about the history, structure, main functions and responsibility of WOAH and relevant definitions used for veterinary workforce development and education/training/re-training of staff. It was demonstrated special abbreviation and their meanings such as Performance of Veterinary Service (PVS), Veterinary Statutory Body (VSB), Terrestrial Animal Health Code (TAHC) as well as some geographical data of vets and VPPs in the world. The importance of harmonization of veterinary and para-veterinary education was highlighted. Information on the Global conferences on Veterinary and VPPs education and their outcomes were shared. The WOAH different useful tools, Guidelines on competencies for veterinarians and veterinary paraprofessionals and curriculum guidelines for vets and VPPs, Curriculum Alignment Matrix (CAM) tool, available partnership programmes (e.g. twinning programmes) between WOAH and members were discussed. Information on how educational establishments which train veterinarians (faculties) and para-veterinarians (colleges) of Member countries can use these tools and guidelines in their work in order to improve the competencies of graduates and follow international standards. It was mentioned what is Competency based education, key activities that VPPs carry out in the field and how teaching staff can develop job description for VPPs using these tools and guidelines. The source of relevant information at the WOAH training platform was shown and the link was be provided.

Keywords: WOAH, veterinary education, para-veterinary education

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Invited Oral Presentation

Innovative molecular techniques to be applied on seafood identification, specifically ngs-based techniques

Alice Giusti

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Abstract:

Food fraud has increasingly diffused due to the globalization and complexity of modern supply chains. Mislabeling - meaning false claims or distortion of the information reported on the label - is currently the preponderant form of food fraud. Seafood is among the commodities at high risk of mislabelling. The most common is the substitution of high-value with less expensive species or farmed versus wild sourcing, the selling of fish from illegal fishing, and the recycling of by-catches or fish waste. Potential consequences involve economic losses, ecological impact, undermining of sustainability efforts, mining religious or ethical reasons. In addition, the illicit presence of toxic species or the omission of ingredients potentially causing allergies (e. g. crustaceans or molluscs) may lead to human health risks. Food authentication, being the process that verifies that a food matches its label description, is of great interest from a commercial, health and a legal point of view. Among the available methods, those based on DNA analysis continue to have a major place, and their use is also encouraged by EU legislation to deter operators from falsely labelling practices in the fishery sector. DNA barcoding has become a key player in maintaining the high-quality of foodstuff. Despite its advantages, the efficiency of the DNA barcoding is limited by the number of target species that can be simultaneously identified. In fact, it relies on Sanger sequencing – also known as first generation sequencing – a low-throughput method that produces partial output, showing only the dominant species and failing to identify the others. Therefore, the method can be critical when processed and complex foods potentially consisting of multiple species are tested. This aspect might be particularly felt by FBOs since complex seafood products have currently won a large market share, following the diet habits of consumers that are increasingly addressed to ready-to-eat/ready-to-cook products. The Next Generation Sequencing (NGS) technologies are high-throughput methods able to simultaneously sequence all the DNA molecules, including those present in trace amounts. Differently to Sanger sequencing, where a single amplicon from a single species is amplified and a unique sequence is obtained, in this case 100% of the DNA contained in a sample can be hypothetically amplified and sequenced each time, they are the most promising analytical tool for complex food authentication. However, differently from other investigation fields, its application in foodstuff is limited, mainly due to the lack of standardized protocols from the sampling to results interpretation. We performed a systematic review to answering the question "*Is the metabarcoding ready to be applied to the authentication of foodstuff of animal origin?"* and we observed that only 23 studies on this topic are available. Most of them did not apply proper quality control measures to prevent and avoid contamination that can distort the final data. Further investigation should be performed in order to define Standard Operating Procedures (SOPs) and harmonize protocols.

Keywords: NGS-based techniques, seafood identification, molecular techniques

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Invited Oral Presentation

Heterocyclic scaffolds in the design and development of novel chemotherapeutic agents

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Abstract:

Cancer is uncontrolled growth of cells, which can invade and spread to distant sites of the body. It is one of the most difficult afflictions in the World. According to World Health Organization (WHO), cancer figures the second leading causes of morbidity and mortality worldwide in 2018. The number of new cases is expected to rise by about 70% over the next two decades. 14 million new cases and 9.6 million cancer related deaths occurred in 2018. Treatment gaps with current chemotherapeutic agents include obnoxious side effects, Multidrug Resistance (MDR), non-selective action and cost of therapy. These limitations open the window for the design and development of novel chemotherapeutic agents. For this our research relied on the on the early-stage drug discovery with multi-disciplinary approaches including organic and medicinal chemistry, biology and computational chemistry. It typically involves the design, multi-step organic synthesis, trouble-shooting of organic reactions, development and optimization of novel bio-active chalcones and their nitrogen, oxygen and sulfur containing privileged heterocyclic compounds as prospective anticancer agents (kinase inhibitors). In this talk, I am going to present our project on "*Targeting Bcr/Abl tyrosine kinase with novel bromo-pyrimidine analogues as potential anticancer agents*" where we synthesized and tested four series of compounds **6a-j, 7a-e, 9a-f** and **10a-f** and tested them against a panel of cancer cell lines and the enzyme Bcr/Abl tyrosine kinase. Majority of the compounds showed excellent activity against K562. Hence, all of the prepared compounds were screened for Bcr/Abl tyrosine kinase inhibitory activity using ADP-Glo assay. As most of the compounds are highly potent against K562 cells, Bcr/Abl tyrosine kinase inhibitory activity of all the synthesized compounds was evaluated by using the well-established ADP-Glo assay. Among others, compounds **6g, 7d, 9c,** and **10e** were the most active Bcr/Abl kinase inhibitors. Therefore, these compounds are promising lead molecules to be developed as an alternative to current dasatinib therapy.

Keywords: Anticancer, Bromo-pyrimidine, Cytotoxicity, Dasatinib derivatives, MTT assay, Bcr/Abl tyrosine kinase

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Invited Oral Presentation

Endocrine disrupting chemicals in foods of animal origin

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Abstract:

Endocrine disruptors or endocrine disrupting compounds (EDCs), are chemicals as naturally occurring or man-made substances that can interfere with the normal functioning of the endocrine system, leading to adverse health effects in both humans and animals. Due to these compounds lipophilic nature, food from animal origin (FFAO), such as meat, dairy products, fish and eggs, can serve as a significant source of exposure to these compounds to human. Growing concerns are arising due to the detrimental effects on reproductive, developmental, neurological, cardiovascular, metabolic, and immune systems in humans and animals, as well as the environment, caused by endocrine disruptors (EDCs). EDCs of high priority include organochlorine pesticides, dioxins, dioxin-like polychlorinated biphenyls (PCBs), bisphenol A (BPA), styrene, phthalates, organotins, and nonylphenol (NP), owing to their persistence. To address the risks associated with EDCs in FFAO, a globally accepted farm-to-fork approach should be adopted for risk assessment, encompassing comprehensive evaluations of contamination throughout the stages of feed production, breeding, slaughter, processing, packaging, and storage/distribution. Feed contamination can originate from natural sources, such as phyto-mycoestrogens (zearalenone, genistein, coumestrol), and goitrogenic glucosinolates, as well as from inadequate storage, transport, processing, and inadvertent means (e.g., malpractice in waste management leading to dioxin and furan contamination). Studies on breeding practices have yielded conflicting results, indicating variations in EDC concentrations between free-range/organic farms and conventional/intensive breeding systems, as the edible sources and the environment (affected by landfill fires and packyard burnings increasing PCDD/F emissions) play a role. Previous findings have shown higher levels of PCBs, organochlorine compounds, and diethylphthalate in free-range/organic eggs, while dimethylphthalate was found in almost all eggs. Dairy products exhibit greater variability due to seasonal fluctuations in fat content and various factors influencing the transfer of these compounds through absorption, metabolism, and storage. Contamination during processing can occur during food conditioning, heating related processes like fumigation, and packaging steps. Milking units, made from plastic materials (claws, tubes, chambers), can also contribute to phthalate contamination. Meat/cheese smoking processes are particularly important in terms of polycyclic aromatic hydrocarbon (PAH) contamination, with the time, temperature, and processing plant design directly influencing the risk. Packaging materials, as food contact materials (FCMs), can lead to EDC migration, dependent on factors such as temperature, storage/contact time, physicochemical properties, and packaging size. Examples include phthalates from various polymers (polyethylene plastics in milk bottles; high-density PE, low-density PE) and styrenes in packaging for yogurt, cheese, milk, and eggs. Our research has shown the presence of phthalate residues in different types of yogurt, with 88.5% of samples contaminated with two or more phthalates. Additionally, additives used to slow down oxidative degradation (e.g., antioxidants like arylamines, butylated hydroxutoluene, Bisphenol A) or prevent thermal degradation (e.g., heat stabilizers like PVC, PVDC) as well as substances added to reduce surface friction (e.g., slip agents like waxes) may also act as sources of EDCs. The effects of cooking on the concentration of EDCs are still debated, as cooking methods can either increase or decrease their levels. For example, the levels of PAHs can vary depending on whether vertical or horizontal barbecue cooking is used, with fat dripping onto the heat source being a primary contributor. Various aspects, such as non-monotonic dose responses, mixture effects, and effects at very low concentrations, are associated with these EDCs. The European Food Safety Authority (EFSA) has established tolerable/acceptable daily intake limits for some important EDCs, which should be considered alongside maximum residue levels and the presence of residues. Given the emerging evidence of the adverse outcomes associated with EDC exposure, risk reduction measures aimed at prevention at point of source should be harmonized with principles and methods of risk assessment, aligned with specific toxicological endpoints and novel screening methodologies. Continuous monitoring should be implemented, and risk assessment findings should be translated into enforceable and shared to legal authorities to ensure optimal consumer protection against EDC contamination originating from animal sources.

Keywords: endocrine disrupting compounds, foods of animal origin, source of contamination, mitigation

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Invited Oral Presentation

Unravelling the beehive air volatiles profile as analysed *via* solid-phase micro-extraction (SPME) and chemometrics and its role in combating Asthma

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Abstract:

The honeybees (*Apis mellifera* L.) have several products, including honey, propolis, royal jelly, bee venom, and bee pollen. Bee products meet the criteria of being natural products that have long-recognized medicinal properties. Historically, bee products nutritional and medicinal values have been considered for thousands of years by Ancient Egyptian, Persians, Romans, and Chinese in supplementary nutrition and alternative diets. Recently, beehive air therapy is recognized as a potential remedy for treating asthma, bronchitis, lung fibrosis, and respiratory tract infections. Developed countries in which beehive air therapy is currently authorized include Germany, Hungary, Slovenia, and Austria. However, scientific proof of its efficacy is lacking which warrants further chemical and biological analyses as a proof of concept. In this study, beehive air volatile profile was determined for the first time along with its individual components.

Volatile compounds were collected from beehive air using solid phase micro-extraction (SPME) coupled to gas chromatography-mass spectrometry (GC-MS). Antimicrobial assay was performed against *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, and multi drug-resistant *Staphylococcus aureus* (MRSA) using the *in vitro* agar-well diffusion and microtiter plate assays.

A total of 56 volatile compounds were identified from beehive air, venom, bee insect and wax air including fatty acids, alcohols, aldehydes, esters, ether, hydrocarbons, phenol, ketones, nitrogenous compound, and terpenes. The most abundant constituents were short-chain fatty acids. The principal component analysis (PCA) scores plot of the UPLC/MS dataset showed the similarity of the beehive air to the insect bee's aroma profile. Beehive air and venom exerted the strongest antimicrobial activity.

Keywords: Beehive air, chemical analysis, antimicrobial activity, bioactive compounds

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Invited Oral Presentation

Alternative uses of stingless bee products in agriculture: honey and propolis

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Abstract:
Stingless bees are highly appreciated since ancient times and also for new generations because of their ecological services and their nest products. Nowadays there are several studies related to elucidate the antimicrobial and antioxidant properties of stingless bee products, such as honey, pollen and propolis. Recent studies are focusing on their alternative uses in agriculture, such as pollinator attractants or as flower and fruit set promoters. In the Soconusco region, Chiapas Mexico, we are performing studies focused to protect the agroecosystem biodiversity by using a natural adherent such as *Melipona solani* honey. We presented a five year study advances in mango and rambutan crops, managed with *Allium sativum* aqueous extracts and *M. solani* honey as adherent; this aqueous extract promotes the emission of vegetative and floral shoots, increases flower development, works as an attractant for pollinators, promotes fruit set, stimulates fruit growth, acts as an insecticide to control thrips and mealybugs and stimulates the production of defense metabolites, such as polyphenol compounds. Therefore, the use of stingless bee honey as an adherent could be a key to potentiate the function of its components in leaves, panicles, flowers and fruits.

Keywords. Honey, attractants, Melipona solani, aqueous extract, potentiate

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Invited Oral Presentation

The Hive: a source of healthy products

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Abstract:

In recent years, there has been a growing interest in finding natural and sustainable products to enhance our health and well-being. One remarkable source that has gained significant attention is the beehive. Bees, renowned for their intricate social structure and honey production, provide us with an array of healthy products that have been explored for centuries.

Honey is the most well-known product: its delightful taste makes it a popular choice for sweetening beverages, baking, and even as a natural remedy. Packed with antioxidants and antibacterial properties, honey can alleviate respiratory infections, boost the immune system, and aid in wound healing. Its rich nutritional profile, including enzymes, vitamins, phytochemicals, and minerals, makes it a valuable addition to a healthy diet.

Pollen and bee bread, collected by bees from flowering plants, are a nutrient powerhouse. Rich in proteins, amino acids, vitamins, and minerals, their consumption can enhance energy levels, support digestion, and provide relief from allergies. The enzymatic process occurring during bee bread production, enhances its bioavailability, the probiotic properties and supporting the immune system.

Another hive product with high health impact is propolis, a resinous substance collected by bees from tree buds and sap. This product is known for its antimicrobial and anti-inflammatory properties and has been used for centuries as a natural remedy for infections, colds and throat ailments. Propolis is also recognized as free radicals' neutralizer and support immune function, but recent studies also highlighted its potential against SARS-CoV-2 infections.

Less explored is apitoxin, also known as bee venom. Bee venom therapy is used in alternative medicine to address conditions such as arthritis, multiple sclerosis, and certain skin conditions. It is also explored due to the anti-inflammatory and pain-relieving properties.

Overall, the hive presents a great diversity of healthy products that offer a range of benefits, from boosting immunity and providing essential nutrients to promoting wound healing and addressing various health conditions. As we continue to explore the wonders of the hive, these natural gifts from bees continue to captivate our attention and contribute to our well-being.

Keywords: Bee products; honey; pollen; bee bread; propolis, apitoxin.

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Invited Oral Presentation

The *Starmerella* yeast in bee nest materials and food science needs microbiome and metabolomics approaches

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Abstract:

The yeast *Starmerella* C.A. Rosa & Lachance, 1998 is a new genus that honors the ecologist William T. Starmer for his contributions on yeast reservoirs of plants and insect ecology. The single species *Starmerella bombicola* was proposed to accommodate the *Candida bombicola* teleomorph sexual stage. *Candida bombicola* isolated from a bumble-bee *Bombus* sp. honey synthesizes a sophorose lipid with surfactant properties. A small number of *Starmerella* species produce such molecules biosynthesized as a mixture of acidic and lactonized forms. The presence of biosurfactants in honey produced by the stingless bees *Scaptotrigona vitorum*, *Scaptotrigona depilis* and *Tetragonisca carbonaria* was detected in our laboratory with an emulsion test. However, their suspected microbial origin was not yet elucidated. Surfactants are secondary defense metabolites resulting from antagonistic microbial interactions. The interest of *Starmerella* in bee nest materials and food science since 1998, the proposal year of this new genus, was reviewed here. More than 70% of the literature on sophorolipid production used *Starmerella bombicola*. *Starmerella bacillaris* is an ascomycetous yeast of grapes, thus it is present in fermenting grape musts, and contributes to the genetic heterogeneity of wine yeast species. In the wine industry, *Starmerella bacillaris* was beneficial for ethanol reduction during mixed wine fermentations, and improved protein stability in white wines. Antibacterial sophorolipids and bioactive films from *Starmerella bombicola* have been of interest. The bibliometrics of *Starmerella* was recently reviewed, and top authors, institutions, countries and journals were mapped with the Scopus database and Bibliometrix. The proposal of yeasts' selection by stingless bee colonies from the environment is an analogy of the *Starmerella* selection by the food industry. The functions of *Starmerella bombicola* sophorolipids in the bee nest biology are unclear. Therefore, it is worth continuing this research on characterization and applications of *Starmerella* in the stingless bee nest materials and in the food industry, using combined approaches of genomics and metabolomics.

Keywords: biosurfactants, honey, sophorolipids, *Starmerella*, wine industry.

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Invited Oral Presentation

Therapeutic Nano-sized delivery systems for the Management of Experimental Arthritis

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Abstract:

Rheumatoid arthritis (RA) is an autoimmune disorder affecting about 1% of global population and in severe cases, disease may lead to permanent disability. Its pathogenesis implicates synoviocytes hyperproliferation, angiogenesis, formation of pannus, along with cartilage and bone degradation, which causes damage and disability. Besides substantial progresses in treatment standards, some limitations are there still there such as enhanced drug metabolism and high clearance leads to low bioavailability of anti-rheumatic drugs. We have developed a new type of nanomedicine in which we conjugated caffeic acid with polyethylene glycol- polycaprolactone (PEG-PCL) to make it therapeutic nanocarrier by conjugation caffeic acid as caffeic acid has potent anti-arthritis and anti-inflammatory effects and it inhibits NF-kB molecule. Moreover, we have entrapped 9-aminoacridine (9-AA) drug which has been reported to possess anti-inflammatory effects by activating NR4A1 molecule. Therefore, our developed nanomedicine has dual targeting nanoparticles and exhibited significant efficacy against collagen-induced arthritis. The plausible therapeutic action of nanomedicine might be due to the inhibition of NF-kB and NR4A1 molecules.

Keywords: Rheumatoid arthritis; 9-aminoacridine; Caffeic acid; Nanomedicine