

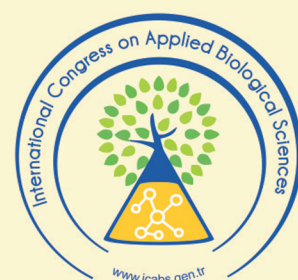
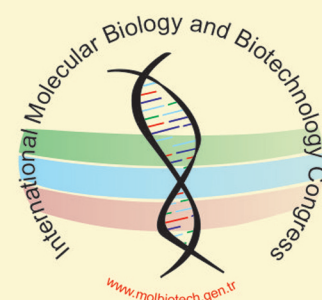
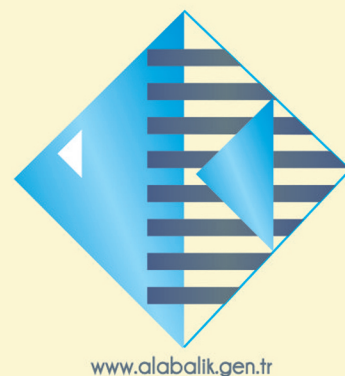
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ABSTRACT BOOK



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ORAL PRESENTATION ABSTRACTS

The effects of anesthesia by etomidat, propofol and ketamine hydrochloride on some hematological biochemical parameters in chickens and turkeys

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Abstract

In this study, six chickens and six turkeys for each anesthetic (etomidat, ketamin and propofol) were used. For premedication, xylazine hidrochloride (rompun-bayer) was used at 1-2mg/kg level. After premedication, etomidat (Johnson&Johnson) at 5mg/kg level (Group I), ketamin hidrochloride (Ketasol-İnterhas) at 50mg/kg level (Group II), and propofol (Diprivan-Abbott™), at 8mg/kg level (Group III) were applied to six chickens and six turkey for each anesthetic, respectively. Parameters were examined at the before induction of anesthesia, during the induction of anesthesia, and at the 24 hours after anesthesia. Erythrocyte (RBC), leukocyte (WBC), and hematocrit (HCT) levels were measured as hematological parameters. The levels of AST, ALP, ALT, Ca, Na, glucose, and total bilirubin were also measured as biochemical parameters. As a result, (1) a rise in glucose levels in etomidate using observed for poultry as well as ketamine, it would be useful to the measurement of the blood sugar level before their using, (2) the majority changes observed hematologic and biochemical parameters should be considered to pay attention before propofol using (3), etomidate is suggested for short-term applications, ketamine is also suggested for long-term applications in chickens and turkeys.

Keywords: General anesthesia, Chickens, Turkeys, Propofol, Etomidate, Ketalar hychloride

*This paper is a part of the PhD thesis project supported by University of Yuzuncu Yıl (2010-SBE-D117)

A Ghost Fishing Study in Baited Fish Traps in Çanakkale Strait, Turkey

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Abstract

The study was conducted in the Çanakkale Strait, Turkey, during July and November 2013. Four different baited fish trap one of which had top entrance, the others having side entrance were investigated to determine the time to start making their ghost fishing. The traps were deployed on the sea bed and they were simulated as lost traps without making any intervention. The status of the species caught in the traps were observed everyday by diving survey. Two trials were carried out in 45-days period. According to the study, it was concluded that the fish, which became trapped, escaped within 8-10 days. The fish that died were as a result of either becoming entangled in the trap materials or due to predators. It was determined that octopus (*Octopus vulgaris*) and cuttlefish (*Sepia officinalis*) from cephalopods escaped from the traps between four and seven days. However, it was observed that crustacean such as crabs did not manage to escape and finally cannibalism started to occur in the traps between the eighteenth and twentieth days. In addition to that, it was monitored that the death from hunger in the traps were within thirtieth and thirty-ninth days. As a result, it was found that the traps had no ghost fishing impacts on fish and cephalopods whereas the ghost fishing that was found to occur for crabs might also occur for other crustacean species such as lobster. (This study was funded by the Scientific and Technological Research Council of Turkey (TUBİTAK project number:112Y191). This study is a part of the MSc thesis of Talip İbin.)

Keywords: Fish Traps, Ghost Fishing, Çanakkale

**Establishment of an efficient reproducible genetic transformation method in aquatic plant
(*Bacopa monnieri* L.)**

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Abstract

Water hyssop (*Bacopa monnieri* L.) is an important medicinal plant due to its active compounds. The plant is also used in ornamental aquaria mainly due to its appearance and adaptability. With the advent of Genetic Engineering and plant transformation technologies, it has been possible to modify plants genetically. We aim to exploit the potential of water hyssop as aquatic plant to be further used for phytoremediation purposes. The present study was conducted to optimize an efficient, reproducible and cost effective genetic transformation protocol of Water hyssop. The leaf explants were used to infect *Agrobacterium* strains LBA4404 that contained the recombinant binary vector pBin19 harboring beta-glucuronidase (*uidA*) gene (interrupted by intronic region) under the control of 35S promoter. Neomycin phosphotransferase (*nptII*) gene was used as a selectable marker at a concentration of 100 mg L⁻¹ kanamycin. The regeneration selection medium was supplemented with BA and NAA at varying concentration along Kanamycin. Augmentin (Amoxillin and Clavulanic Acid) was also added in regeneration selection medium to suppress bacterial overgrowth at rate of 300 mg/L. The expression of *uidA* gene in regenerated T0 plants was firstly analyzed by GUS histochemical analyses and later on confirmation of presence of the *nptII* and *uidA* genes in regenerated plants was determined by PCR. More molecular approaches are being utilized to confirm gene integration and expression in primary transformants.

Keywords: *Bacopa*, genetic transformation, expression, phytoremediation

Gene Pyramiding Strategy To Develop Sustainable Insect Resistant Tobacco Lines

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Abstract

With the introduction of GM technology, plantation of GM crops has reached to 181.5 million hectares in 2014. *Bacillus thuringiensis* (Bt) is most important source of insect resistant genes. Genes from *B. thuringiensis* have been widely used against larvae of lepidoptera, coleoptera and diptera. Turkey is a major trader of oriental tobacco on world markets. Insect pests are considered one of the main factors limiting tobacco productivity. Keeping in view pest and environmental status, it is important to develop insect resistant tobacco. We designed the study to develop insect resistant Turkish tobacco cultivars i.e. Basma and Nail to express two insecticidal genes (*cry1Ac* and *cry2a*) as pyramided gene strategy. The plasmid pKGH4 contain both genes under 35S promoter; also contains GUS-INT with in T-DNA region for earlier screening of putative transformants. Kanamycin was used at concentration of 100 mg/l for plant selection. The leaf explants of both cultivars were subjected to *Agrobacterium* mediated transformation following protocol as described by Horch et al. (1985). We have found promising results in primary transformants when subjecting to GUS histochemical and PCR assays. More molecular and bioassays approaches will be further utilized to confirm gene integration and expression in transformed plants of both cultivars.

Keywords: tobacco, genetic transformation, molecular strategies, expression

Heavy Metal Bioaccumulation in *Enteromorpha intestinalis*, (L.) Nees, A Macrophytic Algae: Example of Kadin Creek (Western Anatolia)

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Abstract

This study presents the determination of detection of ten heavy metals (Al, Cr, Mn, Ni, Cu, Zn, As, Cd, Hg, Pb) and bioaccumulation ability of macrophytic algae in water, sediment and *Enteromorpha intestinalis* samples gathered from Kadin Creek in seasonal periods in 2011 and 2012. Within this concept, heavy metal concentrations in the gathered samples were determined with mineralized and then Inductively coupled plasma with mass spectroscopy (ICP-MS) after mineralization. Findings suggested that algae could be used as an indicator in freshwater ecosystems in terms of studied heavy metals. In terms of bioconcentration factor values, algae accumulated aluminum at most and cadmium at least (Al > Cu > As > Zn > Cr > Mn > Ni > Pb > Hg > Cd). The highest rate of heavy metal concentration in algae was observed in summer when contaminants in water and dynamics of plant development increased. The mean mercury concentration exceeded French legal limit value.

Keywords: Heavy metals, *Enteromorpha intestinalis*, Kadin Creek.

Ecosystem Diversity of Isparta and Its Important Species to be Monitored

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Abstract

In this study, It was studied ecosystem diversity and determined protected areas of Isparta province. Isparta has so important places in “Göller Yöresi/Lakes region”. It has strategical location because of biodiversity and geographical situation. Isparta’s acreage is 8.276 km² and it is % 1, 08 of Türkiye’s acreage. There are six important protecting areas in Isparta up to Ministry of Forestry and Water Affairs of Turkish Republic. These places are 2 national parks, 3 natural parks, one protecting area for *Quercus vulcanica*. In addition to these, two national parks (Beyşehir Lake, Köprülü Canyon National Parks) are border to Isparta and the parks including a little area of the province.

Main purpose of this study, it is to be a model for the projects about “Biodiversity Monitoring Works in Terrestrial and Aquatical Ecosystems” which will be applied by TR. Ministry of Forestry and Water Affairs. Habitats in need of protection, endemic taxa of Isparta province, and their danger categories according to the IUCN were determined in this study. Monitoring plans of species, populations and ecosystems have been revealed. According to the distribution area sizes in the province; Maquis, Steppe and Dry meadows, Forest, Aquatic areas, Rocks or Rocky areas, Wetlands, Meadows and Marshes, Mountain debris or rubble (Scree), Waterfront (Riparian) and Gallery forests with Snow patch and dolines (seasonal wetlands and grasslands) including vegetation formations are seen floristic richness, endemism, and for the maintenance of the ecosystem, we were identified nearly 20 areas for priority protection. Within the province boundaries, there are nearly 2300 vascular plant taxa. Approximately 600 taxa are endemics for Türkiye of them. There are proposed 5 important taxa (*Quercus vulcanica*, *Abies cilicica* subsp. *isaurica*, *Rosa dumalis* subsp. *antalyensis*, *Silene guerbuezii*, *Hesperis ozcelikii*) for monitoring. 40 taxa are proposed to monitoring in future. Also there are important 7 taxa (*Paronychia kurdica* subsp. *kurdica*, *Plantago crassifolia*, *Sideritis condensata*, *Verbascum nudatum* var. *nudatum*, *Pyrus syriaca* subsp. *microphylla*, *Sideritis erythrantha* var. *erythrantha*, *Sedum hispanicum* var. *planifolium*) for monitoring but firstly there will follow for population situation. There are determined four monument trees for Isparta. The big genera and families included the most taxa and endemics in the province:

Families; Fabaceae, Asteraceae, Lamiaceae, Rosaceae, Caryophyllaceae,
Genera; *Astragalus*, *Verbascum*, *Centaurea*, *Salvia* and *Silene*.

Keywords: Biodiversity, Ecosystem, Lakes Region, Isparta, Türkiye.

Acknowledgement: This study is realized with which name is “Biodiversity Protection and Monitoring Affairs in Terrestrial and Aquatical Ecosystems of Isparta Province” project. Author thank to Ministry of Forestry and Water Affairs and EKOİZ Environmental and Social Planning Research Training and Consultancy Trd. Ltd. Comp. for all financial supports. Thanks to rectorate of Süleyman Demirel University for legal proceedings.

Immunohistochemical Study of the Distribution of Irisin in the Dermis, Hypodermis, Retina, Thyroid, Pineal Body of the Porcupines (*Hystrix cristata*)

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Abstract

Irisin is a muscle secreted protein. In the porcupine (*Hystrix cristata*), immunohistochemical studies revealed that irisin immunoreactivity was detected in dermis and hypodermis of skin, retina and muscle of eye, thyroid and pineal gland. Irisin immunoreactivity in dermis was localized mainly in stratum bazale, stratum spinozum, stratum granulozum, stratum reticulare and stratum papillare layers. Immunoreactivity was not observed in stratum corneum layer. In the hypodermis, irisin was present in external and internal root sheat, cortex and medulla of hair follicles and glandula sebecae. Porcupine eye showed irisin immunoreactivity in retina (in nerve fiber layer not in ganglion cell layer and inner nuclear layer) and muscle only. Pineal body and thyroid were also expressed irisin immunoreactivity in porcupine. These studies provide the first evidenced that the irisin is expressed immunohistochemically in the dermis and hypodermis of skin, retina and muscle of eye, thyroid and pineal gland of porcupine.

Keywords: Irisin, Porcupine, Immunohistochemistry, Dermis, Retina, Thyroid

Seasonal Variation of the Concentration of Trihalomethanes in the Drinking Water in the City of Kumanova

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Abstract

Trihalomethanes (THM), being the main byproducts of the water disinfection process, have been a great concern for over three decades for the scientific and wider community for their carcinogenic properties. The aim of this paper is to determine the presence of trihalomethanes (THM) in the drinking water of the city of Kumanova in the spring season and comparing their presence with the regulations within the Republic of Macedonia (as per the recommendations of EU and WHO). UV-VIS spectrophotometry was used as a method in order to determine the presence of THMs – a method based on Fujiwara's reaction. THMs were determined in five various sample points during the months of March, April and May of 2011. Results have shown that the concentration of THMs in the drinking water of Kumanova is within the recommended values of EU, WHO and the Government regulations. Results show that the average concentration of THMs is $33.29 \pm 9.21 \mu\text{g/L}$. These results are the first of this kind for the city of Kumanova. The aim of this paper is also the prevention of health issues caused by the presence of THMs in drinking water.

Keywords: drinking water, trihalomethanes, THM, spectrophotometry UV-VIS, health.

***In vitro* Multiple Shoot Induction from Shoot Tips of *Isatis tinctoria* L. - An Important Medicinal and Industrial Plant**

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Abstract

A rapid and efficient plant propagation system through shoot tip explants was established in *Isatis tinctoria* L., an important medicinal and traditional dye plant belonging to Brassicaceae. The seeds were germinated in Gamborg (B5) medium. Shoot tip explants excised from the plantlets obtained from *in vitro* germinated seeds. The explants were cultured on B5 medium supplemented individually with kinetin (KIN) (at four levels: 0.5, 1, 2 and 3 mg/l) or benzyl amino purin (BAP) (at four levels: 0.5, 1, 2 and 3 mg/l). The best number of shoots was obtained 10.8 per explants on the medium with 0.5 mg/l BAP. For *in vitro* root induction, the effects of indole-3-butyric acid (IBA) and α -naphthalene acetic acid (NAA) were investigated. The shoots were rooted in B5 medium supplemented with NAA and IBA (at two levels: 0.5-1 mg/l). The rooted *in vitro* raised plantlets were acclimatized in a growth chamber and successfully transferred to greenhouse. These plantlets can be used for the extraction of bioactive compounds.

Keywords: Industrial Plant, *in vitro* propagation, *Isatis tinctoria* L., Shoot tip

Effects of Plant Growth Regulators on Callus Formation in Different Explant of *Calendula officinalis* L.

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Abstract

This study has been conducted to investigate different explants of plant growth regulators (PGRs) on callus induction of *Calendula officinalis* L. medicinal and aromatic herb. The seeds were surface sterilized with 70% ethanol for 3 mins, 10% commercial bleach for 5 mins. and 3 times rinsed with sterile water for 3 mins.. The seeds were germinated in Murashige and Skoog (MS) medium. Hypocotyl, cotyledon, cotyledon node explants have been excised from the plantlets which are obtained from *in vitro* germinated seeds. Three explants were cultured on MS media supplemented with various concentrations of cytokinin (BAP; 1.0, 2.0 mg/L) and auxin (IBA; 0.1, 0.5 mg/L) for callus induction. At the end of eight weeks the best results were observed in a treatment with, 1mg/L BAP + 0.5 mg/L IBA and 2 mg/L BAP + 0.5 mg/L IBA %100 on the hypocotyl: 1mg/L BAP + 0.5 mg/L IBA and 2 mg/L BAP + 0.5 mg/L IBA 88% on the cotyledon: 2 mg/L BAP + 0.1 mg/L IBA 100% on the cotyledon nodes. The data obtained from the path is instructive to gene transformation, phytoremediation, cell culture study.

Keywords: *Calendula officinalis* L., cotyledon, cotyledon node, hypocotyl, plant growth regulators.

Reintroduction of the Only Autochthonous Population of Fallow Deer (*Dama dama*): Use of Modeling for Site Selection and Camera Trapping as a Monitoring Tool

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Abstract

Until recently the only autochthonous population of fallow deer left in the world had existed in southern Turkey. We aimed to reintroduce the species into suitable new sites through habitat suitability modeling, population viability modeling, and on-site assessment, followed by two year long monitoring of released individuals by radio/GPS telemetry and/or camera trapping. Following mechanistic range modeling, high potential sites were scored in terms of human pressure, conservation opportunities, habitat patch size and proximity. For the few best sites, age-structured population models were run to compare various reintroduction scenarios with different numbers of animals, sex ratio, and age composition. We translocated 32 deer to the two best sites in western Turkey between 2011 and 2013, and monitored 17 of those by telemetry, and all animals by trail cameras for 20,000 trap-days. Throughout the project, the births of at least 17 fawns were documented. Juvenile survival ranged between 40% and 80%, while adult annual survival was around 90%. Both populations are now considered to be fully established. We recommend managers to follow a site selection process that involves assessments at different spatial scales, and use of both GPS telemetry and camera trapping for monitoring after translocation.

Keywords: Reintroduction, distribution modeling, camera traps, conservation

The psychology aspect of sex selective abortion: Feelings and reactions

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Abstract

Inability to give birth to a male child puts into pressure the woman, who is obliged to experience sex selective abortion due to a strong son preference in her family. This occurs in countries as China, India, Pakistan and the Caucasus as well, where sex selective abortion is considered as a social issue with major concern, and recently it poses a problem also in Albania.

The purpose of this article is to explore the psychology of sex selective abortion, specifically the theoretical implication of feelings and reactions of the woman and her family.

According to the literature review, in societies where having a boy is an important determinant, and when that is not succeeded, it is considered a failure of the woman. As a result, women are prone to divorce, family pressure and feelings of guilt. This failure creates a lot of psychological, social and economical problems inside the family and beyond.

From the findings these consequences to the woman's life are due to the impact of culture and religion of that society.

Keywords: SSA, preference for son, culture, religion.

Hepatic Effects of Yttrium Oxide Nanoflowers: *In Vitro* Risk Evaluation

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Abstract

Yttrium oxide nanoflowers were prepared by a hydrothermal technique, and X-ray diffraction and scanning electron microscopy were used to determine their structures. The cytotoxic and genotoxic potential of aqueous dispersions of the nanoflowers to cultured primary rat hepatocytes were examined at concentrations up to 500 mg L⁻¹ for 72 h. Cell viability was determined by monitoring the reduction of 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide, release of lactate dehydrogenase, and uptake of neutral red. Genotoxicity was assessed by the liver micronucleus assay. Exposure to Y₂O₃ nanoflowers at concentrations lower than 100 mg L⁻¹ did not lead to any cytotoxicity or genotoxicity. At higher concentrations (200, 400 and 500 mg L⁻¹) cell viability decreased and induction of micronuclei increased (400 and 500 mg L⁻¹).

Keywords: Cell viability, DNA damage, Nanotoxicity, Rat, Y₂O₃

Comparative Adult Osteology of Three Species in the Family Salamandridae**Elif Yıldırım¹, Yusuf Kumlutaş², Çetin Ilgaz²**¹Ege University, Faculty of Science, Department of Biology, 35100 Bornova, İzmir, Turkey²Dokuz Eylül University, Faculty of Science, Department of Biology, 35160 İzmir, Turkey

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Abstract

Data on the osteology of the family Salamandridae is limited, in spite of the great diversity and abundance of this family. Herein, we investigate detailed descriptions of the adult skeleton in *Triturus cristatus*, *Ommatotriton ophryticus* and *Lissotriton vulgaris*, collected from different localities from Turkey. The adult osteology of these species is described on cleared and double-stained specimens and compared to each other. In the studied species, major differences are as follows: 1) the shape of the premaxilla, parasphenoid, and vomer; 2) the row of the vomerian teeth; and 3) the number of the presacral vertebrae. In *L. vulgaris*, the nasal process of the premaxilla is thinner than *O. ophryticus* and *T. cristatus*. The posterior end of the parasphenoid in *O. ophryticus* and *L. vulgaris* has a more rounded shape than *T. cristatus*. The shape of the anterior end of the vomer in *L. vulgaris* is an angular and the vomerian teeth are different from others. The number of the presacral vertebrae is 13 in *L. vulgaris* and *O. ophryticus*, whereas it is mostly 14 in *T. cristatus*.

Keywords: Caudata, Salamandridae, Osteology

Neuroprotective Effects of Inhaled *Ferulago angulata* oil On Scopolamine-induced Dementia via Anti-oxidative Activities in Rats

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Abstract

Ferulago angulata (Apiaceae) is a shrub indigenous to Turkey, western Iran, and Iraq. In traditional medicine, *F. angulata* is recommended for treating various medical conditions and as sedative. In the study, the effects of inhaled *F. angulata* essential oil (1% and 3%, daily, 21 days) on spatial memory performance were assessed in scopolamine-treated rats. Decrease of spontaneous alternations percentage within the Y-maze task and increase of working memory errors and reference memory errors within the radial arm maze task were exhibited on scopolamine-induced rats. Exposure to *F. angulata* essential oil significantly improved these parameters, suggesting positive effects on spatial memory formation. Assessments of oxidative stress markers in the hippocampal tissue of scopolamine-treated rats showed a significant decrease of the total content of reduced glutathione (GSH), superoxide dismutase (SOD), catalase and glutathione peroxidase (GPX) specific activities, along with an increase of acetylcholinesterase (AChE) activity and an elevation of malondialdehyde (MDA) and protein carbonyl levels. *F. angulata* essential oil significantly increased total content of reduced GSH, SOD, CAT and GPX specific activities, decreased AChE specific activity and attenuated the increased MDA and protein carbonyl levels. Also, DNA fragmentation was not observed in the *F. angulata* essential oil treated-rats, thus suggesting antiapoptotic activity of the essential oil. Therefore, our results suggest that exposure to *F. angulata* essential oil ameliorates scopolamine-induced spatial memory impairment by attenuation of the oxidative stress in rat hippocampus.

Keywords: *Ferulago angulata* essential oil, Spatial memory, Oxidative stress, Alzheimer's disease

A New Blood Cell Recognition Algorithm Based On Directed Vector Method

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Abstract

Today, various methods have been used to count and recognize blood cells. For detection and diagnosis of illnesses, the number of cells in the blood and determining the type of the cells are vital importance. There are 5 types of white blood cells, a red blood cell and a platelet cell in human blood. In this study, a new blood cell count algorithm based image processing is proposed to classify count the blood cells from a blood image. To improve appearance of the images, preprocessing processes such as noise reduction, thresholding and edge detection are applied to blood images. In the feature extraction step, 8-way vector chain code and statistical characteristics are obtained from images. In the classification stage Multi Layer Perception (MLP) Artificial Neural Network (ANN) is used. It is shown that classification performance is satisfactory.

Keywords: Blood cell images; Blood cell counting; Multi Layer Perception (MLP); Artificial Neural Network (ANN); 8-Way Vector Chain Code.

Evaluation with Skin Prick Test of Sensitivity Against Der p and Der f Allergens in the Asthma Cases

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Abstract

Asthma is the most common chronic inflammatory disease of the airways and it is estimated to affect 300 million people worldwide. Environmental and genetic factors are involved in the development of asthma in atopic individuals. Environmental factors include dust mites, plant pollens, fungal spores, air pollution and cigarette smoking. The house dust mites, however, the most important allergens. Der p, which is produced by *Dermatophagoides pteronyssinus* and Der f which is produced by *D. farinae* are the most common and effective house dust mites allergens. Skin prick test is invivo testing used to determine susceptibility to these allergens. In this study was evaluated sensitivity against to Der p and Der f through the skin prick test in asthma patients and in homes of patients was specifically investigated the mites which source of allergen this.

Within the scope of this study; dust samples were collected from the houses of 25 asthma patients who were applied of allergens Der p and Der f with the skin prick test. Dust samples were sieved and examined with precipitation in lactic acid method.

Our results demonstrated that 19 (76%) of 25 asthma patients were found positive the skin test against Der p. Of these, in home of 18 patients (94.73%) total 949 *D. pteronyssinus* was determined. On the other hand, 18 (72%) of 25 asthma patients were found positive the skin test against Der f. Of these, in home of 4 patients (22.22%) total 89 *D. farinae* was determined. We concluded that the house dust mite species of *D. pteronyssinus* and *D. farinae* may play a role in the etiology of asthma.

Acknowledgment: We would like to thanks to the Erzincan University, Coordinatorship of Scientific Research Projects of which financially supported this study with FEN-A-300614-0107 numbered project, Erzincan University Ethics Committee (Decision no: 2014-2/6) which approved the study and all the households who opened their house to us.

Keywords: Asthma, Der p, Der f, Skin prick test, House dust mites

First Observation of Diplostomiasis in Cultured Rainbow trout (*Oncorhynchus mykiss*) in Karkamış Dam Lake, Gaziantep in Southeastern Turkey

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Abstract

Several of rainbow trout farms have established in Karkamış Dam Lake, recently. Their productions have reached to 20 000 tones per year. The mass mortalities were observed in trout farms two years ago. After bacteriological examinations, *Lactococcus garvieae* had been isolated and specific antibiotics had been applied. Although the mortality rate had reduced but it had not stopped completely. Considering to symptoms, 150 moribund fish were examined in terms of the parasitic diseases. *Diplostomum* spp. metacercariae were found in lense of the different size and age of fish. Tens of snails were examined and cercariae were found. Three seagull caught by farmer were examined and adult forms of parasite were found in bird intestine. Paziquantel to treat and serious measurements to control Diplostomatosis were suggested.

Keywords: *Diplostomum* spp, *Lactococcus garvieae*, Rainbow trout

The Effects of Four Diets with Different Protein Levels on Growth and Survival of Mozambique Tilapia (*Oreochromis mossambicus*, W.K.H Peters,1852) and Feed Cost

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Abstract

A 12-weeks feeding trial was conducted with mozambique tilapia (initial weight of 1.19 ± 0.35 g) to examine the effect of four different dietary protein contents on growth, feed conversion ratio (FCR), survival rate and to reduce the cost of diet. The experiment consists of four different diets. Four isocaloric (3230 kcal/kg digestible energy) diets were formulated which have 30%, 35%, 40%, and 42% crude protein levels. The diets were: 1) HP30 consist of 30% protein, 2) HP35 consist of 35% protein, 3) HP40 consist of 40% protein and 4) HP42 as control diet which consist of 42% protein (commercial trout feed). A total of 144 mozambique tilapia were distributed into 4 experimental groups with 3 replicates. The result of experiment indicated that final weight varied among diet groups were 3.77 ± 0.2 g, 3.29 ± 0.16 g, 4.02 ± 0.21 g and 3.80 ± 0.64 g. respectively. At the end of the experiment, the fish that were fed diets HP30, HP35 and HP40 exhibited similar growth performance, FCR, and protein digestibility as those receiving the control diet HP42 ($P > 0.05$). The survival rate of mozambique tilapia was similar for all diets. The results indicated that the diets consist of 30% crude protein levels could be used in mozambique tilapia fry without adversely affecting performance.

Keywords: mozambique tilapia, feed conversion ratio, growth, crude protein, diet.

Rhythm changes and LV function .Analysis of effects on EF of LV**Fatmir Ferati, Mentor Karemani, Ardian Preshova, Anida Ferati**

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Abstract

The purpose of the study is the analysis of the effects of rhythm changes on EF of the left ventricle (LV), determined by echocardiography. For this purpose, we have analyzed 5 cases with different rhythm changes. From 3 of them, conversion was spontaneous (2 of them, conversion was spontaneous during same control, one spontaneously after several months), one case converted with DC shock of ICD and one case converted medicamentously. While analyzing the hemodynamic changes of the heart rhythm, one can see the need and the urgency for converting some of these changes, based on the effects that rhythm changes have in the hemodynamic function of the heart.

According to the data, some of the hemodynamic changes of the LV are almost minimal, like in the paroxysmal supraventricular tachycardia (PSVT), while the changes are enhanced in the atrial fibrillation (AF) with an uncontrolled ventricular rhythm, and especially in the ventricular tachycardia (VT). From this one can see the need for a fast conversion of the rhythm in ventricular tachycardia and with a DC shock when needed. Also in the cases of atrial fibrillation, in cases of inability for conversion of the rhythm in a sinus rhythm, control of the heart frequency gives an important hemodynamic effect that can be seen from echocardiographic parameters.

**Medicinal and Aromatic Wild Plants and Traditional Usage of Them in Mount Ida
(Balıkesir/Turkey)**

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Abstract

This study was performed in the remaining part of Mount Ida (Kazdağları) in the province of Balıkesir. The purpose of the study is to determine in the ethnobotanical aspects, for what purposes and in what ways the local people use the natural plants. For this purpose, this study was conducted between July 2014 and May 2015. During the field works, a total of 51 plant taxa of 24 families determined to be used in the region has been collected and the traditional use of them has been identified. The most commonly used taxa belonging to these 24 families are *Lamiaceae* (13 taxa), *Asteraceae* (4 taxa) and *Malvaceae* (4 taxa). These plants by local people have been found to be used mostly for colds, stomach ailments and as food. The most preferred form of use is infusion. With this study it has been concluded that *Sideritis trojana* CR, *Alchemilla hirsutiflora* VU which is in the group of plants that have ethnobotanical usage are endemic plants.

Keywords: Mount Ida, Ethnobotanic, Medicinal and Aromatic Plant, Traditional Usage

Fecal Ciliate Composition of Domestic Horses (*Equus caballus* Linnaeus, 1758) Living in Kyrgyzstan

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Abstract

Species composition and distribution of intestinal ciliates were investigated in the feces from 15 domestic horses living in Bishkek, Kyrgyzstan. Twenty-three species belonging to 14 genera were identified. This is the first study on intestinal ciliates in domestic horses living in Kyrgyzstan. The mean number of ciliates was $14.1 \pm 6.8 \times 10^4$ cells ml⁻¹ of feces and the mean number of ciliate species per host was 6.0 ± 3.2 . No endemic or new species were detected. *Blepharocorys* was the major genus as these ciliates were detected in high proportions. In contrast *Holophryoides*, *Allantosoma* were only observed at low frequencies. Recorded ciliate species in this investigation had almost the same characteristics as those described in previous studies, there was no important geographic variation in the intestinal ciliate fauna of equids.

Keywords: Intestinal ciliate, feces, horse, Kyrgyzstan

The Biochemical Toxicities of TiO₂ Nanoparticles on Adult Zebrafish (*Danio rerio*)

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Abstract

The development of nanotechnology is often considered as a sort of novel industrial revolution. Nanoparticles (NPs) are reported to be a potential environmental health hazard. Titanium dioxide NPs is extensively used in a variety of products, including industrial materials and cosmetics. Also development of nanotechnology will be accompanied by an increasing release of “nano-wastes” in natural environments. TiO₂-NPs may pose significant risks to aquatic organisms. In the present study, we aimed to make the toxicological assessment of TiO₂-NPs exposure to an aquatic model species zebrafish (*Danio rerio*). The experimental groups of fish divided four parts (control, 1ppm, 2ppm and 4ppm of TiO₂) including per 10 fish each aquarium tank. After 120 hours muscle, gill and liver tissues were removed and homogenized. Malondialdehyde (MDA), catalase activity (CAT) and total protein (TP) levels determined using spectrophotometric methods. MDA levels decreased in muscle and liver but increased in gill. CAT activity improvement in muscle and liver contrary to gill. In experiment groups reduced TP was observed. As a conclusion uncontrolled using of nanoparticles has been seen to cause important problems in aquatic organisms and whole environment.

Keywords: Nanoparticles, TiO₂, Oxidative stress, *Danio rerio*, model species

Effects of Rosemary Essential Oil Vapor on Eggs and Larvae of *Callosobruchus maculatus* (F.) and Edible Chickpea

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Abstract

Larvae of *Callosobruchus maculatus* (F.) causes a significant loss in stored legumes. In this study, fumigant effects of *Rosmarinus officinalis* L. essential oil on *C. maculatus* egg and larvae and, also vapor effects on hydration coefficient, cookability, color and taste of chickpeas were assessed. Experiments were carried out at 28±2°C temperature, 55±5% R.H. and darkness in growth chamber. The eggs on chickpea and larvae in chickpea of *C. maculatus* were exposed to 10, 20, 30, 40, 50 and 60 µl L⁻¹ air doses of rosemary essential oil. The highest egg mortality rates were obtained as 71% at the 24th and 100% at the 48th hour with 60 µl/l air doses. The most effective dose (50 µl L⁻¹ air) of rosemary essential oil were on larvae mortality rates as 87%, 95% and 100% at the 24th, 48th 72nd, respectively. Edible chickpeas were exposed to 10, 20, 30, 40, 50 and 60 µl L⁻¹ air doses of essential oil for the 24 and 48 hours. The highest dose applied of the essential oil and the longest exposed time did not show negative effect on the hydration coefficient, cookability, color of chickpeas. Taste of the chickpea was changed in 40% of the ratio at 10 µl L⁻¹ air. The rosemary essential oil was detected as potential bio-fumigant in control of *Callosobruchus maculatus*.

Keywords: *Rosmarinus officinalis*, essential oil, effect, *Callosobruchus maculatus*, chickpea

Oleuropein Ameliorates Cisplatin-Induced Hematological Damages Via Restraining Oxidative Stress and DNA Injury

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Abstract

Cisplatin is a chemotherapeutic drug but induces tissue injury. Oleuropein (OLE) may be used as possible natural antioxidant. We hypothesized that antioxidant activity of OLE may decrease cisplatin-induced oxidative stress and prevent to the development of chemotherapeutic complications including abnormality in hematological condition. Rats were be randomly assigned to one of eight groups: control group; 7 mg/kg/day cisplatin (i.p.) group; 50, 100 ve 200 mg/kg/day OLE (i.p.) group; and groups treated with OLE for three days starting at 24 h following cisplatin injection. First, hematological and metabolic parameters were appreciated between control and experimental groups. Second, total oxidative stress (TOS) and total antioxidant capacity (TAC) levels of blood were measured by biochemical studies. Additionally, oxidative DNA damage was determined by measuring as increases in 8-hydroxy-deoxyguanosine (8-OHdG) adducts.

The cisplatin elevated the TOS and 8-OHdG levels which were then reversed by OLE. Reduction in antioxidant capacity with respect to corresponding controls were also restored by OLE treatment. However, supplementation of OLE has not a significant positive affect on the metabolic parameters. These findings suggest that the OLE treatment against cisplatin-induced toxicity improves the function of blood cells and helps them to survive in the belligerent environment created by free radicals.

Keywords: Oleuropein, Cisplatin, Hematological Parameters, Oxidative Stress

Effects of dietary fishmeal replacement by super worm (*Zophobas morio*) meal on liver and intestine histology of rainbow trout fry (*Oncorhynchus mykiss*)

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Abstract

A 40 days feeding trial was conducted to determine the effect of dietary fishmeal replacement by super worm (*Zophobas morio*) meal on liver and intestine histology of rainbow trout fry. 25 fish stocked in 150 L fiberglass tanks (15±1°C, constant aeration and filtration) for each replicates, after a 15 days acclimatization period. Isonitrogenous diets were formulated with fishmeal replacement as 0%, 25%, 50% and 100% by super worm meal. Fish in duplicate groups were fed ad libitum with experimental diets two times a day. At the end of the experiment two fish from each replicate euthanized (100 mg/L Eugenol) and vital tissues were examined. Effects of dietary worm meal were evaluated by the liver and intestine histology of fry.

Keywords: rainbow trout, *Zophobas morio*, fishmeal replacement, liver-intestine histology

Immunohistochemical Localization of Irisin in the Trigeminal Ganglion and Superior Colliculus of Porcupine (*Hystrix cristata*)

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Abstract

Irisin, myokine secreted by skeletal muscle and ubiquitously distributed in other tissues and cells, such as heart, liver, kidney, peripheral nerve sheath and dermis and hypodermis of the skin. However, the expression of irisin in many species and in various tissues and cells are unknown. Thus, we examined immunohistochemical localization of irisin in the trigeminal ganglion and colliculus rostralis (superior colliculus) of porcupine (*Hystrix cristata*). Irisin immunoreactivity showed a dense body of positively labelled cells throughout the superior colliculus. These irisin immunoreactive cells had a characteristic arrangement corresponding to the laminar structures of the superior colliculus. In the trigeminal ganglion, irisin immunoreactivity were observed mainly in satellite cells localized around of sensory cells bodies. The function of locally synthesized irisin is currently unknown and a functional role of irisin in the trigeminal ganglion and colliculus rostralis has yet to be identified.

Keywords: Irisin, Trigeminal Ganglion, Colliculus Rostralis, Immunohistochemistry, Porcupine (*Hystrix cristata*)

Fecundity and Behavioural Features of *Anthocoris nemoralis* (F.) (Hemiptera: Anthocoridae) Cultures Reared at Different Periods

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Abstract

Our study consists that there is any differences in fecundity and behavioural features of *Anthocoris nemoralis* (F.) (Hemiptera: Anthocoridae) which is the most important predator of *Cacopsylla pyri* L. (Hemiptera: Psyllidae). All experiments were conducted at 25±1°C, 75±5% relative humidity with a period of 16:8h (L:H). Imaginal stages of the predator were collected from two different provinces of Ankara; Bağlum in 2000 and Çubuk in 2009. *A. nemoralis* was reared on its factitious host, *Ephestia kuehniella* Zell. (Lepidoptera: Pyralidae) in laboratory conditions. When individuals reared in artificial conditions, studies showed some biological and behavioural features were changed. Fecundity experiments includes pre-oviposition, oviposition, post-oviposition periods and quantity of laid eggs. Pre-ovioposition, oviposition and post-oviposition periods of 4 year-old culture were determined as 4.26±0.542 days, 19.8±2.80 days and 58.93±2.82 days, respectively. A significant difference in the number of laid eggs was found between 4 year-old and 13 year-old cultures (P=0.000). Pre-ovioposition, oviposition and post-oviposition periods of 13year-old culture were also found 5.40±0.676 days, 22.47±4.26 days and 52.67±5.05 days, respectively. Tending activity to psyllids is determined for imaginal stages of *A. nemoralis* in air flowed Y-tube olfactometer. Psyllids attracted %40 of adults in 4 year-old and %36 of adults in 13 year-old cultures.

Keywords: *Anthocoris nemoralis*, *Cacopsylla pyri*, fecundity, behaviour.

Flora Of Area Alpine And Subalps Of Sharr Mountain-Macedonia**Nasuf Abdii**

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Abstract

In this scientific work „*Flora Of Area Alpine And Subalps Of Sharr Mountain- Macedonia*” presented partial data of three year work (2013, 2014, 2015) a phase which coincides with different phases of vegetation. This study has been done for the first time especially within the Sharr Mountain. The study is concentrated in 10 station in the Sharr Mountain. The accumulation of the scientific material was conducted from early spring until late autumn, preparing herbarium, accompanied by data for site-collection, date, biotope etc. During this study a rich material has been collected, of about 300 exemplar. From the previous floristic analysis so far, it results that the Flora of the Sharr Mountain is rich with types. The selected material consists of 55 families, 105 genders and 250 types.

Keywords: Flora of the Sharr Mountain, phases of vegetation.

Somatic Embryogenesis on Turkish Lentil (*Lens culinaris* Medik.) Cultivars**Selahattin Kaya¹, Musa Türker², Neşe ERAY³**² Department of Molecular Biology and Genetic, Faculty of Science, Yüzüncü Yıl University, Van² Department of Molecular Biology and Genetic, Faculty of Science, Yüzüncü Yıl University, Van² Department of Molecular Biology and Genetic, Faculty of Science, Yüzüncü Yıl University, Van

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Abstract

Somatic embryogenesis studies were carried out on 11 Turkish lentil cultivars. Lentil seeds were sterilized and germinated in Plant Growth Regulator (PGR) free MS (Murashige and Skoog) medium. Cotyledon, hypocotyl, root, shoot tip, leaf and nod excised from sterile grown seedlings and embryos were excised from sterilized seed and incubated in MS, B5(Gamborg's medium), SH (Shenk and Hildebrandt) and WH (White) media with different PGRs. Six of 11 cultivar gave potentially embryogenic callus. Solid media studies were carried on with the six cultivars. Four embryologically best callus producing cultivars of 6 were used in suspension culture studies. 2,4-D (2, 4-dichlorophenoxyacetic acid), NAA(1-Naphthaleneacetic acid), BAP(6-Benzylaminopurine) and ABA (Absciscic Acid) were used in different concentrations and combinations to produce callus and somatic embriyo. Zygotic embryo was found to be best potentially embryogenic callus producing explant. MS with NAA and 2,4-D were determined to be embryogenic callus reporative conditions. BAP produced adventitious shoot rather than embryogenic callus. As a result, calli were transferred to liquid culture and somatic embryos of Yerli Kırmızı, Sazak 91, Kafkas and Pull 11 cultivars gave best globular, heart and torpedo shapes embriyos in MS medium supplemented with 0.3-1 mg/l NAA.

Keywords: somatic embryo, lentil

The Effects of Quercetin on Antioxidant System and Some Blood Parameters at Experimental Diabetic Rats

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Abstract

The aim of this study was to evaluate the effects of quercetin on antioxidant system and some blood parameters at streptozotocin(STZ)-induced diabetic rats. In this study, 32 adult male Wistar albino rats, whose weights were similar to each other, were used. Experimental animals were divided into four equal groups as Control (C), Diabetes (D), Quercetin (Q) and Diabetes+Quercetin (DQ). All groups were fed with the standart rat food during the experiment. There was no application to the rats in the control group, but 60 mg/kg STZ was injected intraperitoneally to the D and DQ groups as a single dose. Quercetin (15 mg/kg live weight/day) was injected intraperitoneally to the Q and DQ groups (after diabetes had happened). In blood samples SOD, MDA, GSH, insulin, glucose, ALT and AST were determined at the end of the study. MDA level was increased significantly ($p<0.05$) in diabetic rats when compared with other three groups. In the Q group parameters were not affected by quercetin administration alone, but it was observed that in DQ group, which was treated with quercetin after diabetes, MDA level was significantly lower than group D and it was very close to the levels of group K and group Q ($p<0.05$). The serum glucose, ALT and AST levels in D group were significantly higher than other 3 groups (K, Q, DQ) but insulin level was considerably low ($p<0.05$). As a result, it was found that in experimental diabetic rats with STZ, diabetes had negative effects on observed parameters. Also quercetin treatment which was an effective antioxidant did not have a negative effect on healthy rats, but it was shown remarkable in terms of mitigating the negative effects on diabetic rats.

Keywords: Antioxidants; Diabetes Mellitus; Quercetin; Blood Parameters

Effect of Gradually Decreased Temperature on Adult Longevity and Fecundity of *Pimpla turionellae* L. (Hymenoptera: Ichneumonidae)

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Abstract

In this study, effect of gradually decreased temperature on larval stage of endoparasitoid *Pimpla turionellae* L. (Hymenoptera: Ichneumonidae) reared on pupae of *Galleria mellonella* L. (Lepidoptera: Pyralidae) in laboratory conditions were investigated. Parasitized host pupae were acclimated gradually decreasing temperature; for 3 days at 25, 20, 15 and 10°C, then 2, 3, 4 and 5 days at 4°C, respectively. Duration of adult emergence after parasitization, adult longevity and fecundity were determined after each acclimation. With the increasing of duration time at 4°C, we found these results; adult longevity and fecundity decreased.

Keywords: Adult longevity, fecundity, gradually decreased temperature, Hymenoptera, *Pimpla turionellae*

Assessment of Multiple Areas on Midsagittal Images of Brain Magnetic Resonans Imagings of Multiple Sclerosis Patients

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Abstract

Midsagittal plan area inspection with brain MR images taken when the diagnosis was first given and the last MR image taken on the following treatment performed with the patients diagnosed with *multiple sclerosis (MS)* as retrospective, in this study. Comparison was done between the healthy individuals and *MS* diagnosed patients. Seven area measurements were conducted on midsagittal MRI of *MS* patients and compared with healthy subjects. The measures included the area of corpus callosum, cerebrum, cerebellum, pons, bulbus, 4. ventriculus and hypophysis. As a result, while there was a growth on fourth ventriculus area, there were shrinkage in the other areas in *MS* patients. It was detected that the tissues affected on women at the beginning of the disease were hypophysis, cerebrum, and bulbus and on men corpus callosum and cerebrum. Early atrophy of hypophysis and bulbus in women and late atrophy of these tissues in men draw an attention. It was detected that atrophy is not dependent on the time. When the correlation between EDDS and atrophy was inspected it was seen that with an increase in EDDS (when disease in progress), there is a decrease in the area of cerebrum and corpus callosum in men whereas an increase in the fourth ventricular area in women.

Keywords: *Multiple Sclerosis*, Brain, Midsagittal areas

Comparision of the Equine Kidney Prepared by Alkyd Resine Method with by Formaldehyde Method

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Abstract

The aim of this study is (1) to determine the properties of Alkyd resin technique on kidney tissue, (2) to compare with by formaldehyde method and in addition, (3) to investigate whether using as for education and research materials or not. For this purpose, formalin-fixed eight equin kidney materials prepared by the reference method of fixation using 10% formaldehyde (Group 1) and the eight equine kidney prepared with alkyd resin technology (Group 2). The materials of group 2 were removed from formaldehyde by cleaning up with tap water for 24 hours. Then, all metohodological procedures such as dehydration, embedding, pre-drying, impregnation and hardening were applied to the materials, respectively. Two groups were compared for the hardness, elasticity, cohesiveness, color, odor and moisture properties. There were no statistically differences for hardness, elasticity and cohesiveness for among groups. The L, a, and b values were significantly differ among groups ($P<0.01$). The Group 2 was darker and more opaque; more yellow and more red. The group 2 materials were odorless and dry, and no special storage condition were also required. It was concluded that kidney tissue can be treated with Alkyd resin technique and used in both research and anatomy practices.

Keywords: Alkyd Resin, Kidney, Anatomy, Tissue Protection.

Reservoir Weeds of Cucurbit Viruses in Central Anatolia

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Abstract

Weed growth can severely decrease the commercial values of crops. Other than affecting crop production by reducing the amount of nutrients available to the main crop, weeds can also influence crop production by acting as reservoirs of various viruses. Viral diseases are very destructive especially on squash (*Cucurbita pepo* L.) which is grown for seeds in central Anatolia. In this study, it's aimed to determine the virus reservoir weeds in major cucurbit growing areas of central Anatolia. Totally 85 weed samples which symptomless or showed the most common virus symptoms like mosaic, curling, blistering, mottling, distortion, shoestring, stunting and vine decline were collected from cucurbits growing areas during 2009 and 2010 years. The viruses were identified by DAS-ELISA and RT-PCR. The results showed that 50,6% of weed samples were infected with *Cucumber mosaic Cucumovirus* (CMV), *Watermelon mosaic Potyvirus-2* (WMV-2), *Zucchini yellow mosaic Potyvirus* (ZYMV), *Papaya ringspot Potyvirus-watermelon strain* (PRSV-W) and *Squash mosaic Comovirus* (SqMV). CMV was the most prevalent virus in the infected weed plants with the ratio of 36,5% and occurred in *Amaranthus retroflexus* (31%), *Chenopodium album* (33,3%), *Convolvulus arvensis* (42,9%), *Datura stramonium* (66,6%), *Xanthium strumarium* (42,9%), *Solanum nigrum* (66,6%), *Agroptilon repense* (100%), *Hibiscus trionum* (50%) and *Rumex crispus* (100%) samples. CMV was followed by WMV-2 (22,3%), ZYMV (15,3%), PRSV-W (2,3%) and SqMV (2,3%). WMV-2 was detected in *A. retroflexus* (24,1%), *C. album* (33,3%), *C. arvensis* (28,6%) and *S. nigrum* (33,3%). Also mixed infections were observed in *A. retroflexus*, *C. album* and *X. strumarium* more frequently than others. *Cucumber green mottle mosaic Tobamovirus* (CGMMV) was not present in the weed samples.

Keywords: Anatolia, Cucurbits, DAS-ELISA, Reservoir weeds, RT-PCR.

*This article was summarized from Serkan YEŞİL's PhD thesis.

Cucurbit Viruses of Turkey

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Abstract

Cucurbits (the Cucurbitaceae family) include 119 genera and 825 species distributed primarily in tropical and subtropical regions of the world. The major cultivated species such as melon (*Cucumis melo* L.), cucumber (*Cucumis sativus* L.), squash (*Cucurbita pepo* L.), and watermelon (*Citrullus lanatus* (Thunb) Matsum.&Nakai) are important vegetable crops worldwide. Cucurbits are among the major vegetables grown in Turkey. Virus diseases cause important economic losses in cucurbit crops throughout the world. According to the different estimates, viruses cause 3-5% of overall vegetable production is lost, but losses can be occasionally very high, where pest control is insufficient, especially in developing countries. Indeed, more than 35 different viruses have been isolated from cucurbits in the world, but only twelve of them were already found in Turkey. From different parts of Turkey, several virus diseases inducing mosaic symptoms were previously reported including *Cucumber mosaic Cucumovirus* (CMV), *Watermelon mosaic Potyvirus-2* (WMV-2), *Zucchini yellow mosaic Potyvirus* (ZYMV), *Papaya ringspot Potyvirus-watermelon strain* (PRSV-W), *Cucumber vein yellowing Ipomovirus* (CVYV), *Cucurbit aphidborne yellows Polerovirus* (CABYV), *Melon mosaic virus* (MMV), *Tomato ringspot Nepovirus* (TRSV) and *Tomato black ring Nepovirus* (TBRV) only in cucumber, *Squash mosaic Comovirus* (SqMV), *Melon necrotic spot Carmovirus* (MNSV) and *Cucumber green mottle mosaic Tobamovirus* (CGMMV). Plant viruses have been identified by several methods involving their morphological, physical, biological, cytological, serological and molecular properties, but serology is one of the most specific and accessible methods to obtain a rapid and precise diagnosis of a plant disease caused by virus. Several serological techniques were developed and the advent of the enzyme-linked immunosorbent assay (ELISA) has facilitated the use of serology in the identification and characterization of plant viruses. The present review describes biological, morphological, serological and molecular properties of important virus species infecting cucurbits in commercial fields of Turkey.

Keywords: Cucurbitaceae, DAS-ELISA, RT-PCR, Turkey, Virus diseases

Effects of Selected Insecticides on Progesterone Synthesis by Bovine Luteal Cells

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Abstract

Insecticides can cause negative effects on fertility and luteal steroidogenesis. The present study was designed to evaluate effects of acetamiprid, methomyl and deltamethrin on steroidogenesis of bovine luteal cells. Luteal cells were dissociated by 4 successive 1 h incubations in aerated (O₂) culture media containing collagenase, DNase, bovine serum albumin and antibiotic/antimicotic solution on a shaking water bath at 37 °C. Cells were incubated without treatment for 18 h. Thereafter, the cells were incubated with serum free media including acetamiprid, methomyl or deltamethrin by day 5 of incubation. After starting treatment, the medium was replaced with fresh medium every 48 h. The used medium was stored frozen at -20 °C until assayed for progesterone analysis by radioimmunoassay (RIA). Progesterone levels in the used culture media were determined using commercial RIA kit. Incubation of the cells with 1 mM acetamiprid resulted in significant reduction (P<0.05) on progesterone production only on day 5. When cells were treated with 10 mM acetamiprid, it resulted in 34% and 84% decrease in steroid synthesis on days 3 and 5 respectively. By day 3 treatment with 1 mM methomyl had not affected the progesterone production; however, the same concentration of methomyl resulted in significant inhibition on day 5. Incubations of the cells with 0,1 mM and 1 mM deltamethrin resulted in significant reduction (P<0.05) in the progesterone accumulation both on days 3 and 5. Our results suggest that particular concentrations of all three insecticides studied have detractive effects on progesterone synthesis of luteal cells. Suppressive effects of these three insecticide on luteal steroidogenesis are as methomyl < acetamiprid < deltamethrin.

This research was supported by Scientific and Technological Research Council of Turkey (TUBITAK) Project No: TOVAG- 2130174.

Keywords: Insecticide, Progesterone, Luteal cells, Bovine, Toxicology

A molecular assay for the detection of ionizing radiation induced DNA damage**Ergün ŞAKALAR, Seyma ÖZÇIRAK ERGÜN, Emine AKAR**

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Abstract

Food irradiation is the treatment of food by a certain type of intense energy known as ionizing radiation and It reduces the content of several key nutrients such as vitamins in foods. It also causes to DNA damages of the foods. In this study, a new molecular DNA-based method was planned for the quantification of applied irradiation on the unstored and stored meat at -20°C for three and six months. Meat samples were subjected to irradiation doses of 0, 0.272, 0.497, 1.06, 3.64, 8.82, and 17.42 kGy in the industrial gamma cell (gamma cell 60Co, dose rate 1.97kGy/h). Primers were designed to amplify 998, 498 and 250 bp region of 18S RNA gene of nuclear DNA from irradiated meat samples. The efficiency and sensitivity of all real-time PCR amplicons were calculated using standard template dilution series of 100, 20, 4, 0.8, 0.16, 0.01, 0.0032, and 0.00064 ng DNA per reaction. DNA from meat exposed to the indicated doses of was quantified by comparison to a standard curve of known DNA concentrations. The method developed in this survey allowed to estimation of the IR dose applied to meat stored up to six months with a dose limit of approximately 1 kGy.

Keywords: Meat, real-time PCR, Industrial irradiation, dose detection

The Ameliorative Effects of Poliphenolic Compounds in Pomegranate Juice Against Lead-Induced Oxidative Stress in Rats

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Abstract

In the present study, the lead binding activity of phenolic compounds of pomegranate juice, its interactions with some essential micronutrients (copper, zinc and iron) and its protective effects against lead toxicity in rats were investigated. A total of 40 rats were divided into four groups. Control group received standart rat feed and daily water; a positive control group received a daily dose of 2000 ppm lead (as lead acetate) in drinking water; a low treatment group that received a daily dose of 2000 ppm lead together with 1050 µmol total polyphenols by gavages; and a high treatment group that received 2000 ppm lead and 2100 µmol total polyphenols daily for 5 weeks. At the end of the experiment, it was determined that polyphenols in pomegranate juice (1) decreased the lead levels of the examined soft tissues; (2) decreased the copper, zinc and iron levels of the liver and heart tissues, without creating a weakness in antioxidant capacity of these tissues; (3) restricted the lead-induced lipid peroxidation and enhanced the antioxidant defence system in all the tissues examined; (4) relieved lead-induced histopathological changes, with the exception of brain tissue.

Keywords: lead, phenolic compounds, pomegranate juice, oxidative stress, trace elements

Interconnections between Diabetes and Global Warming

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Abstract

There has been little understanding about the connections between Diabetes type 2 and Global Warming and the benefits of a joint approach to addressing them. The main goal of this study was, through correlations, to establish and explore the interconnections between Diabetes and Global warming and to propose a “model of possible interdependences”.

This “ecological public health” explorative desk top research utilised existing published literature and available on-line data bases (NASA, FAOSTAT, International Diabetes Federation, WHO). Several research methods were used, including thematic analysis of reviewed literature and statistical analysis of data: Mann-Kendall Statistics, Box-Cox Analysis (improving normality of time series), de-trending of the time series and correlation analysis of detrended time series.

Based on correlation analyses of detrended time series, three likely interdependences of Diabetes and Global Warming were defined: the changing population demographics, urbanisation and the globalised food system. Due to the limitations of the study, causality could not be established.

Although based on assumptions, the suggested model of interconnections presents an opportunity for a joint mitigation which would be equally beneficial for both Diabetes and Global warming. The future policies must address long-term and population-wide changes of lifestyles that require multisectoral approach, including health, agriculture and food production, transport, education and urban sectors.

Keywords: *Diabetes mellitus* type 2, obesity, malnutrition, global warming, GHGs emission, mitigation

The Effects of Entrance Shape on Catching Efficiency in Baited Fish Traps

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Abstract

The study was conducted between November 2013 and June 2015 on the coast of North Aegean Sea and Çanakkale Straight. In this study four different types of fish traps were used for catching fish. These are "O" shaped, conical, cylindrical and collapsible traps. In the traps, two entrance model (conical and V shaped) were used and each trap had one entrance. The aim of the study was the investigation of the entrance shape to catching efficiency in baited fish traps. Traps were made of iron frame which were covered with two different materials (wire net and twine net). The wire net covered traps and twine net covered traps were tried 72 and 132 times respectively

The best CPUE (Catch Per Unit Effort) was taken from the wire net covered, "O" shaped trap which had V entrance model with 4,28 quantity and 433,46 g. per trial. On the other hand twine net covered, conical trap which had V entrance had minimum CPUE with 0,38 number and 33,54 g. per trial. Overall the comparison of trap entrance type showed that, conical type entrance was found to be effective in terms of weight with 400, 6 g. CPUE from V type entrance with 340,2 g. CPUE per trial. However it is thought that trap shapes are more important than the entrance models catching for fish. This study comprised a section of Ata AKSU thesis of MSc. and supported by TÜBİTAK project no: 112Y191.

Keywords: Fish Trap, Fishing Efficiency, Entrance Models.

Estimating Exploitable Biomass for Sprat (*Sprattus sprattus phalericus* Risso, 1826) Caught by Midwater Trawls in Middle Black Sea (Samsun-Yakakent, Ordu-Akçay)

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Abstract

In this study, exploitable biomass of sprat (*Sprattus sprattus phalericus* (Risso, 1826)) distributed along Samsun shelf area (SSA) was estimated for the period 2014 January – May. Swept Area method was used in the study. Exploitable sprat biomass per unit area and stock biomass in the SSA in size 2.508,395 km² were estimated for deeper and shallower waters than 40 meters which was accepted as midpoint. Accordingly, sprat biomass per unit area was determined as; 40.018,76 ± 10.852,61 kg/km² in shallower area than 40 meters, 27.758,77 ± 4.242,07 kg/km² in deeper area than 40 meters and 33.602 ± 6.017,46 kg/km² for SSA. The exploitable stock size of sprat was estimated as 84.287 ± 15.094 tons in SSA. Average length values of sampled sprats were 7,08 ± 0,02 and it was determined that 7-7,4 cm is the densest size group in distribution of length-frequency. On the other hand, length frequency distribution with respect to depth, densest size groups as follows; 7 – 7,4 cm for shallower waters than 40 meters, 6,5 – 6,9 cm for deeper waters than 40 meters.

Keywords: Sprat, Midwater Trawl, Stock Estimation, Biomass, Black Sea

Comparison of Proximate and Fatty Acid Compositions of Cultured Rainbow Trout (*Oncorhynchus mykiss* W. 1792) and Brown Trout (*Salmo trutta fario* L., 1758)

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Abstract

In this study, in order to determine the biochemical composition of cultured Rainbow Trout (*Oncorhynchus mykiss* W. 1792) and Brown Trout (*Salmo trutta fario* L., 1758), reared with the same feed, proximate composition, fatty acid profiles and sensory parameters were investigated. In cultured rainbow trout, the determined values were respectively; crude protein level 13.7%, crude fat 2.68%, moisture 79.41%, ash 1.48%, saturated fatty acids (Σ SFA) 21.88%, monounsaturated fatty acids (Σ MUFA) 37.45%, polyunsaturated fatty acids (Σ PUFA) 40.15%, Dekosahekzaenoik acid (DHA) 7.02% and eicosapentaenoic acid (EPA) 1.63%. On the other hand, in cultured brown trout, respectively; crude protein level 13.48%, crude fat 2.45%, moisture 79.67%, ash 1.45%, saturated fatty acids (Σ SFA) 20.01%, monounsaturated fatty acids (Σ MUFA) 36.72%, polyunsaturated fatty acids (Σ PUFA) 42.45%, Dekosahekzaenoik acid (DHA) 8.21% and eicosapentaenoic acid (EPA) 1.66% were found. There were no significant differences in terms of the parameters studied ($P>0.05$). For sensory analysis such as taste and smell, brown trout results were found better than rainbow trout's data.

Keywords: SFA, MUFA, PUFA, *Salmo trutta fario*, *Oncorhynchus mykiss*, EPA, DHA, proximate, fatty acids.

POSTER PRESENTATION ABSTRACTS

First record of *Komposocypha* Pfister and *Pseudopithyella* Saever from Turkey**Abdullah KAYA¹, Yasin UZUN¹, İbrahim Halil KARACAN², Semiha YAKAR¹**¹Karamanoğlu Mehmetbey University, Kamil Özdağ Science Faculty, Department of Biology, Karaman, Turkey²Ömer Özmimar Religious Anatolian High School, Gaziantep, Turkey

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Abstract

This study is based upon two sarcoscyphaeid fungi specimens collected from Southeastern Anatolian region of Turkey between 2014 and 2015 within the framework of an ongoing project aiming to determine the macrofungal diversity of Gaziantep province. Using the data obtained from field and laboratory studies, the specimens were identified as *Komposocypha chudei* (Pat. ex Le Gal) Pfister and *Pseudopithyella minuscula* (Boud. & Torrend) Seaver. Based on these collections, the two genera *Komposocypha* Pfister and *Pseudopithyella* Saever are recorded for the first time for the Sarcoscyphaceae of Turkey.

Keywords: Biodiversity, new records, Sarcoscyphaceae, Gaziantep, Turkey**Acknowledgement:** The work was supported by TÜBİTAK (212T112) financially.

Scutellinia setosa* (Nees) Kuntze, a new record for Turkish Pyronemataceae*Abdullah KAYA¹, Semiha YAKAR¹, Yasin UZUN¹, Ilgaz AKATA², Ali KELEŞ³**¹Karamanoğlu Mehmetbey University, Kamil Özdağ Science Faculty, Department of Biology, Karaman, Turkey²Ankara University, Science Faculty, Department of Biology, Ankara, Turkey³Yüzüncü Yıl University, Education Faculty, Department of Science Education, Van, Turkey

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Abstract

During routine field trips carried out to determine the macrofungal diversity of Dernekpazarı (Trabzon) district, a saprophytic scutellinoid macrofungi sample was collected. As a result of necessary macro and micromorphological investigations it was identified as *Scutellinia setosa* (Nees) Kuntze (Pyronemataceae). Tracing the current literature on macrofungi of Turkey, it is found that it didn't exist in current checklists. The taxon is given as new record for the mycobiota of Turkey as the fifth member of the genus *Scutellinia* (Cooke) Lambotte.

Keywords: *Scutellinia*, new record, Pyronemataceae, Trabzon, Turkey**Acknowledgement:** The authors would like to thank Karamanoğlu Mehmetbey University Research Fund (13-M-14) for financial support.

Selenium Protects the Testes Via Inhibition of Oxidative Stress in a Rat Model of Cyclophosphamide-induced Testicular Toxicity

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Abstract

Cyclophosphamide (CP) is one of the most widely used alkylating antineoplastic agents that damage normal cells while killing cancerous cells in vivo. The use of CP in treating cancer patients is limited due to its severe toxicities induced mainly by oxidative stress. Selenium is a potent nutritional antioxidant that carries out biological effects by its incorporation into selenoproteins, such as glutathione peroxidase. Therefore we aimed to investigate the possible protective effect of Se on CP-induced testicular toxicity. A total of 42 male Sprague-Dawley rats were divided into 6 groups (n=7) (control, 150 mg/kg CP, 0.5 or 1 mg/kg Se and CP+0.5 and CP+1 mg/kg Se groups). In order to determine the protective effects of Se on testicular toxicity, testes tissues were analysed histologically. The CP treatment caused a decrease in body weight and various epididymal damage. In contrast, Se pretreatment effectively attenuated the testicular toxicity caused by CP, including testis and epididymis. These results indicate that both doses of Se attenuates testicular toxicity induced by CP in rats.

Keywords: Cyclophosphamide, Testicular toxicity, Selenium, Cytoprotectivity, Rat

The Effects of Melatonin Application on the Ageing Process of Pepper Seeds

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Abstract

Melatonin was first isolated from bovine pineal gland more than half a century ago and since then it was identified in evolutionary distant organisms including bacteria, algae, invertebrates, vertebrates and in finally higher plants. It has been postulated that melatonin may serve as a photoperiodic and circadian rhythm regulator as well as a universal antioxidant. The objective of this study is to identify the possible effects of melatonin on pepper seed ageing process. For this purpose, seeds of pepper 'Yalova 341' were treated with melatonin (5 µM) for one day after which they were stored for up to 8 months under two different temperature regimes (4°C and 25°C). The effects of exogenous application of melatonin on seed quality following storage was assessed periodically by germination tests conducted at optimum (25°C) and chilling conditions (15°C) regimes. The results indicated that pepper seeds showed very little sign of ageing when stored at 4°C with very slight decrease in germination percentage and rate regardless of germination temperature. However, when the seed were stored at 25°C, germination percentage and rates declined significantly; but melatonin application was quite effective in slowing the ageing process especially when the seeds were germinated at 15°C. The fact that melatonin, a broad spectrum antioxidant, could be used to prevent storage losses in seeds may have a significant practical application.

Keywords: *Capsicum annuum*, seed storage, storage temperature

The Antibacterial Activities of *Crocus sativus* Against Mastitis Pathogens and its Antioxidant Activities

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Abstract

Mastitis is a complex disease, which is defined as inflammation of parenchyma of mammary glands. Antibiotics are widely used in the treatment of mastitis. However, this widespread use of antibiotics causes both antibiotic residues in milks and antibiotic resistance developed in bacteria. The aim of this work was to investigate the antibacterial effects of *Crocus sativus* extracts against mastitis pathogens, and its other biological activities. The aqueous extract showed maximum inhibition zone against one bacteria (Coagulase-negative *staphylococci*- 32; CNS 32), and the zone was 11 mm. Two bacteria (CNS – 33 and 36) showed the lowest sensitivity to 3250 µg /mL concentration for ethanol. In addition, the extracts were tested against the stable DPPH (2,2-diphenyl-1-picryl-hydrazyl-hydrate) free-radical for antioxidant activity. As a result, the ethanol extract observed a strong antioxidant activity (trolox equivalent: 2,4 mM). The extracts of *C. sativus* have antibacterial and antioxidant activities.

Keywords: *Crocus*, Mastitis, Antibacterial Activity, Antioxidant Activity

The Biological Activities of *Hypericum perforatum* L.**Gulten Okmen, Ali Arslan, Pinar Erdal, Sukran Kardas, Dilek Isik, Duygu Bayrak**

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Abstract

Mastitis reduces milk yield and alters milk composition. Antibiotics are widely used in the treatment of the disease. However, this widespread use of antibiotics causes both antibiotic residues in milks and antibiotic resistance developed in bacteria. Today's researches are focused on discovering and using new antibiotics against bacteria. The aim of this work was to investigate the antibacterial effects of *Hypericum perforatum* L. extracts against mastitis pathogens, and its other biological activities. The extract showed maximum inhibition zone against two bacteria (Coagulase-negative *staphylococci*- 33 and 37; CNS 33 and 37), and the zone was 17 mm. A bacterium (CNS – 22) showed the lowest sensitivity to 812,5 µg /mL concentration. In addition, the extract was tested against the stable DPPH (2,2-diphenyl-1-picryl-hydrazyl-hydrate) free-radical for antioxidant activity. As a result, the extract displayed a strong antioxidant activity (trolox equivalent: 0,83 mM). The extract of *Hypericum perforatum* have antibacterial, antioxidant and antimutagenic potentials.

Keywords: *Hypericum*, Mastitis, Antibacterial activity, Antioxidant activity, Antimutagenic activity

Researching Potential of Medical Uses of Glucose/Gluconic Acid Coated and Magnetic Targeted Nanoparticles *in vitro* Conditions for Ovarian Carcinoma

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Abstract

Epithelial ovarian cancer is the leading cause of death among gynecologic malignancies. In the last two decades, a number of nanoparticle-based therapeutic agents have been developed for the treatment of cancer. These nanoscale agents may provide more effective and/or more convenient routes of administration, lower therapeutic toxicity, extend the product life cycle and ultimately reduce health care costs. Magnetic nanoparticles are being of great interest due to their unique purposes. Magnetic agents can be directed to tumor tissues via an external magnetic field and this may mostly eliminate the side effects of classical oral treatment. The anthracycline antibiotic doxorubicin has a broad spectrum of antineoplastic action and a correspondingly widespread degree of clinical use. In this work, primarily, glucose/gluconic acid coated iron oxide nanoparticles were synthesized. Doxorubicin was loaded to prepared glucose coated magnetic iron oxide nanoparticles via hydrazone bond. *In vitro* drug release studies and biocompatibility tests, which are hemolysis, protein binding and macrophage uptake, were performed. Cytotoxicity studies were performed on 3 cell line. According to the results, the drug carrier that was prepared in this project can be effective ovarian cancer treatment.

Keywords: Ovarian Carcinoma, Doxorubicin, Magnetic Nanoparticles

Acknowledgement: We would like to thank for financial support received from The Scientific and Technological Research Council of Turkey (Project ID: 113Z165).

Cultural Entomology**Ayla TÜZÜN¹, Büşra KALEMCİ², Havva Gül MURAT³**^{1,2,3} Ankara University, Faculty of Science, Biology Department, Tandoğan, 06100, Ankara/Turkey

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Abstract

Insects – which represent the largest and most diverse class of animal, and constitute the subject of entomology – can be encountered in almost every part and area of daily life. Insects are found in almost every livable location on earth, and comprise numerous species that are harmful and beneficial to humans. Just as there are numerous species of insects that cause damage to agricultural and residential areas, harm humans, spoil foods, and damage human tools and items; there also many species of insect that provide valuable products (honey, pollen, royal jelly, silk, etc.) and serve as a source of knowledge and inspiration for humans (in literature, poetry, novels, films, music, cartoons, folklore, handicrafts, jewelry, etc.). Furthermore, in many forensic cases, insects found in and on a corpse allow the determination of the time and location of death, as well as the post-mortem interval (Forensic Entomology). These contributions of insects to human societies, which constitute the subject of cultural entomology, reflect the indispensable role they assume in human culture. For this reason, it is important for humans to see insects as more than just harmful and frightening animals, and to realize that they constitute an important part of both nature and daily life, while also learning to live together with them.

Keywords: Insect, Human, Cultural Entomology.

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Abstract

With the onset of decomposition following death, various species of insects begin to appear on a person's corpse in a particular order. By identifying the characteristics of these insects, it is possible to reach important information that might contribute to an ongoing forensic investigation, such as a person's post-mortem interval (PMI). In the evaluation of forensic cases, mites (acari) represent a form of evidence that is as important as insects. Especially in cases where conditions such as the environment the corpse is found and the manner of death are not suitable for the presence/arrival of insects, mite populations on corpses can become an importance evidence for elucidating these cases. Different species of flies carry specific mite species to corpses, while certain mite species normally found on the human body before death remain viable for specific periods of time. Such information can significantly contribute to resolving forensic cases. Mites can be found in a wide range of environments, including freshwater and saltwater environments, houses, clothes, beds, and the human skin. The diversity of mite species varies considerably between different seasons and regions, between different areas of the same region, and between different natural habitats. Mites found on beds are different than those found on linens, just as mites found on human skin are different than those found on human clothing. Owing to their ubiquity, diversity and wide distribution, mite species can be used as valid and reliable pieces of evidence for resolving forensic cases.

Keywords: Forensic acarology, Forensic Sciences, Post Mortem Interval

Oxidative Status In Childhood Iron Deficiency Anemia**Tünay Kondaş Aşkar¹, Aynur Akçay², Fatma Ergün¹, Zeynep Hünkerler³**¹ Department of Chemistry, Faculty of Science Çankırı Karatekin University, Çankırı, Turkey²Department of Chemistry, Institute of Science Çankırı Karatekin University, Çankırı, Turkey³ Government Hospital of Çankırı, Çankırı, Turkey

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Abstract

The most frequent nutritional deficiency in children is iron deficiency which plays a crucial role in oxidative metabolism and cellular immune response. Megablastic anemia can develop in growing children due to the insufficient intake of animal protein resulting in vitamin B12 deficiency. The aim of this study was to determine malondialdehyde (MDA), nitric oxide (NO), myeloperoxidase (MPO), paraoxonase (PON), glutathione (GSH), and vitamin E levels in iron deficiency anemia in children.

The study has performed on 17 children with iron deficiency anemia and 18 healthy children between the ages 4-9 (6,1±1,4). Iron deficiency in children has been determined with Hb level <11,5 gr/dL, serum iron <30 µg/dL, and ferritine level <12 ng/mL. The study has been performed with the permission of Bülent Ecevit University Ethical Commission.

In the study, MDA, MPO, and nitric oxide levels were significantly higher in the iron deficiency group and PON, GSH and vitamin E were significantly lower when compared to the control group.

In this study, the fact that oxidative stress occurs in children with iron deficiency anemia has been identified with high MDA, NO, MPO and low GSH and vitamin E levels.

Keywords: Children, Iron deficiency anemia, oxidative stress

Adsorptive Removal of Co (II), Ni (II) and Cu (II) Ions from Aqueous Media Using Chemically Modified Sporopollenin of Lycopodium Clavatum as Novel Biosorbent

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Abstract

In this study, sporopollenin of Lycopodium clavatum spores was used for sorption experiments. (E)-4-((2-hydroxyphenylimino) methyl) benzoic acid (HPBA) immobilized sporopollenin (Sp) was employed as a sorbent in sorption of selected heavy metal ions in aqueous solutions. The sorbent material was prepared with sequential treatment of sporopollenin with silanizing compound and HPBA. Experimental conditions for effective sorption of heavy metal ions were optimized with respect to different experimental parameters using the batch method in detail. pHs for maximum sorption of Cu(II) Ni(II) and Co(II) ions were found in six and five, respectively. Langmuir, Freundlich, and Dubinin–Radushkevich (D–R) isotherm equations were applied to the experimental data. Thermodynamic parameters such as free energy (DGo), entropy (DSo), and enthalpy (DHo) were also calculated from the sorption results and were used to explain the mechanism of the sorption. The results indicated that this sorbent is successfully employed in the separation of trace Cu(II), Ni(II), and Co(II) from the aqueous solutions.

Keywords: Chemical immobilization; Sporopollenin; Adsorption; Metal ion

Determination of Ascorbic Acid in Plasma and Serum: Method and Stability Studies**Turgut Şekerler¹, Ayşegül Bildik², Cengiz Gökbulut³**¹ Faculty of Pharmacy, Marmara University, İstanbul² Faculty of Veterinary Medicine, Adnan Menderes University, Aydın³ Faculty of Medicine, Balıkesir University, Balıkesir

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Abstract

Ascorbic acid (vitamin C) is a molecule which can easily degradate because of its chemical structure. It is thought that the reason of degradation is environmental conditions (PH, light, oxygen concentration, divalent cations, oxidant enzymes). In the measurement of the amount of ascorbic acid in blood, the unstable structure of ascorbic acid effects the reliability of measurement. So the importance of pre-analytical factors is increasing in ascorbic acid measurements. The aim of the study is to improve different sample preparing methods by using different measurement techniques in different environment conditions. The effects of time on ascorbic acid measurement, storage conditions at different temperatures, adding MPA (metaphosphoric acid) to the samples, and anticoagulants that are used at taking blood samples are investigated. Serum and plasma samples were obtained from 10 cattle aged 4-6. After serum and plasma are obtained they are divided into five different groups to be exposed to different temperatures conditionals (immediately, 4h in 4°C, -196°C; 24h in -80°C, a month in -80°C) MPA is added to half of it and it is analyzed using spectrophotometric technics. The results obtained are statistically evaluated. The blood samples which are taken by using EDTA are found to be significantly reduced ($p < 0,05$). But any significant difference was not detected in the samples which were stored in different temperatures conditions. Ascorbic acid concentration is found less in the samples which are added MPA ($p < 0,05$).

As a result; rapid measurement of ascorbic acid in serum and plasma with heparin are advised. On the other hand, in the light of the findings of this study it can be said that more studies should be done with more samples.

Keywords: Ascorbic acid, stability, serum, plasma, MPA

Effects of ACTH application on kidney function tests, the electrolytes and hematological parameters in rats

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Abstract

This study was conducted to investigate the effects of ACTH application on kidney function tests, electrolytes, and hematological parameters in rats. In the research two groups were formed, including control and stress. Each group consisted of 6 male Sprague Dawley rats which were about 13 weeks old and 200-250 g in weight. Serum isotonic was administered at a dose of 0.5 ml/rat to control group, and ACTH was applied at a dose of 4 mg/kg to stress group at once intraperitoneally. Blood samples were taken 3 hours after the application. Concentrations of glucose, amylase, creatine, creatine kinase (CK), creatine kinase MB (CK-MB), urea, uric acid, lactate dehydrogenase (LDH), calcium (Ca), phosphorus (P), magnesium (Mg) sodium (Na), chlorine (Cl) and potassium (K) in serum; the total leukocytes numbers of (WBC) platelet (PLT) and erythrocytes (RBC) and the values of hemoglobin (HG) and hematocrit (HCT), on whole blood were performed. The level of glucose, WBC, Monocyte %, Granulocyte %, $p \leq 0.001$ values of stress group were significantly higher than those of control group ($p \leq 0.001$) while the values of CK, CK-MB, urea, BUN were significantly higher ($p \leq 0.05$) while Lymphocytes % ($p \leq 0.001$) and the levels of Na, Cl, and K ($p \leq 0.05$) were significantly lower in stress group compared to control. These results indicated that stress induced by ACTH had noticeable impact on the renal function test, electrolyte balance and hematological parameters.

Keywords: ACTH, electrolyte, glucose, hematological parameters, kidney, stress.

The Effect of Barley Grass on The Antioxidant Capacity and DNA Damage in Rat with Renal Failure

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Abstract

This study was aimed to search the effect of barley grass (BG) on the Total Antioxidant (TAS)-Oxidant Status (TOS) and DNA damage in rat with renal failure by high dose Gentamisin (GM) in rats. The rats which are used in the study were randomly divided into 4 groups that each of has 8 rats: Control (C) group; injected i.p. with physiological saline for 7 days, GM group; GM (80 mg/kg/day) was injected i.p. for 7 days, BG group; was given oral BG (250 mg/kg/day) for 4 weeks, GM+BG group; injected i.p. with gentamicin (80 mg/kg/day) and BG (250 mg/kg/day) was given by oral for 4 weeks. After from the process of experiment for 4 weeks, blood sample and kidney tissue were taken. The analysis were done of urea and creatinine by autoanalyser; TAS, TOS levels by colorimetric kits; DNA damage by ELISA kits in serum. The kidney tissues were examined histopathologically. In the group of GM+BG was determined that the levels of ure, creatinine, TOS ($p<0.05$) and OSI ($p<0.01$) statistically decreased and heal histopatolojical compared to GM group. In the group of BG was determined the levels of TAS $p<0.05$ statistically increased other groups. The statistical significance were not found in the level of serum 8OHdG differences between the groups. As a result, BG can be used to alleviate the oxidative status and function loss high doses of GM 's can form in the kidney.

Keywords: Barley Grass, DNA damage, Gentamicin, Renal Failure, TAS

Effect of Sildenafil Citrate on MDA, GSH, Retinol, Vitamin D₃ and α -Tocoferole Levels in Wound Healing: Diabetic Rat Model

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Abstract

In this study, the effect of sildenafil citrate (SC) on Malondialdehyde (MDA), Glutathione (GSH), retinol, vitamin D₃ and α -tocoferole levels were researched in the rats with diabetes and wound formation. 3 groups were formed in the study and 10 male Swiss albino rats with the weight of 250-300 g were used in each group. Diabetes implementation was conducted on the rats of the 1st group, diabetes and wound implementations on the rats of the 2nd group and diabetes, wound and SC implementations on the rats of the 3rd group. Normal wound care was applied to the first two groups; besides the normal wound care, SC was also applied to the third group intraperitoneally (i.p.) at 0.7 mg/kg once a day and during 3 days. Blood samples were taken before (day 0) and after (9th day) the applications. MDA and GSH were checked in the whole blood, and retinol, vitamin D₃ and α -tocoferole levels were examined in the plasma. At the end of the study, MDA values of the third group were found lower ($P < 0.05$), GSH plasma retinol and α -tocoferole levels higher ($*P < 0.05$) than the other groups. Consequently, it was determined that application of SC in appropriate doses and time might have a positive effect on enabling the oxidant and antioxidant balance during the wound healing in diabetes patients.

Keywords: Diabetes, Wound Healing, Sildenafil Citrate, MDA, retinol.

The Effect Of transglutaminase In The Quality Of Set Yoghurt

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Abstract

The main objective of this research is the investigation of the characteristic upon rheological of the set yoghurt from samples of the milk treated with transglutaminase and fermentation on *Streptococcus thermophilus* and *Lactobacillus bulgaricus*

The research on this study is focused on the effect of the transglutaminase upon the stability and the quality of the set yogurt.

Transglutaminase as an enzyme improves the viscosity doesn't allow the decrease of the pH storage that gives a product with high quality and minimises syneresis also it gives a strong consistency acceptable on the market.

Based on how much percentage of the TG we will add to the set yogurt first we need to consult the physico-chemical composition of the yogurt.

The experimentation are made while testing the effect of the percentage of the enzymes that are variable from 0.2%, 0.3%, 0.4% on the different temperature of incubation 37°C, 40°C, 43°C for 2, 4, 6 hours.

The enzymatic treatment of the milk allows the deviation of the syneresis while storage on 4 °C

According to the results TG is a good correctional of the performance of the set yogurt.

Keywords: transglutaminase, set yogurt, fermentation, syneresis, temperature

The Effect Of Stabilizers In The Quality Of Yoghurt

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Abstract

The objective of this project was to determine how the quality of drinkable yoghurt would be altered by using gelatin, carboxymethylcellulose (CMC), and high methoxy pectin (HMP) as stabilizers.

The pasteurization of milk is made under 85 °C for 30 min and 92 °C for 5 min, fermentation on 38 °C with 2% inoculation of the *streptococcus thermophilus* and *lactobacillus bulgaricus*.

On the milk and yoghurt are made : physico-chemical analysis, the presence of antibiotics, sensorical and reological analysis.

Gelatine and HMP give a stability of the yoghurt incereasing the value of the yoghurt wich also have a bigger acception of the pH and acidity, whey separation is more stabile wich gives a product with higher content of proetins wich by any means they are better hidrocolloids .

The samples produced with CMC have a low sensorical attribute and unacceptable defects. The results tells that CMC are a bad influence on sensorical quality and destroys the stability of the yoghurt, they tentend whey separation regardless added starter cultures or pasteurization temperature.

The ingredients, processing conditions, and starter cultures used in producing a drinkable yoghurt can affect on the quality of yoghurt.

Keywords: stabilizer, yoghurt, fermentation, samples, pasteurization

“Busha” Cow Ecotype – Need For Conservation And Sustainable Use**Maksim Hajrullaj¹, Hazir Pollozhani², Bardhyl Limani², Teuta Gjuladin-Hellon²**¹Department of agriculture, University “ Aleksander Moisiu”, Albania² Faculty of Food Technology and Nutrition, State University of Tetovo, Macedonia

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Abstract

“Busha” cow ecotype is found at areas in Lure- Rec- Dardhe in Albania and Kosovrast, Gajre, Reka in Macedonia. It is an animal with small body, 160-180 kg. Distinguished by its dark colors from brown to black. It has a thin skin and can be distinguished for its big head with horns and sometimes without. Chest circumference 125-135cm, Top line 110-125 cm, Circumference of the thigh bone 14-16 cm, Teat length 6-7cm, Heart Girth 60-65cm. It has strong feet adapted for mountainous area. Produces about 900-1200 liter of milk in one year, fat in milk is 5.6 %, 270-280 day lactation in one year, fertile is about 95%.

This ecotype is in risk of extinction as result of the movement of population from these areas and requirements for more meat production by farmers aiming nowadays to make artificial insemination to improve milk and meat production.

It is necessary to have a program under in-situ conservation, in which can be included about 15-20 farms with 300 cows in villages in two regions. It must aim through professional control and management of population under a scheme that should reduce the inbreed coefficient, increase milk production, marketing of production like milk and meat.

Keywords: cow, ecotype, Busha, in-situ conservation

Effects of 24-Epibrassinolide on germination and some antioxidative parameters of cotton (*Gossypium hirsutum* L.) under salt stress

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Abstract

The present study was conducted to investigate the anti-stress effects of 24-Epibrassinolide (EBL), an active brassinosteroid, in cotton cultivars against the salt stress. Nine cotton cultivars were tested for their germination responses to varying NaCl concentrations. According to germination test result, two tolerant (Nazilli 84-S and Carmen) and two sensitive (Sahin 2000 and Beyaz Altın 119) cultivars were selected for the experiments. Seeds of four cultivars were soaked in 3 µM EBL for 24 hours and plants were irrigated with solution containing the various concentration of NaCl (0, 50, 100 and 150 mM). Germination percentage, growth (fresh and dry mass) and pigment content (chlorophyll a, chlorophyll b and carotenoid) were reduced under salinity stress whereas the treatment of EBL alleviated the inhibitory effects of salt stress. Under high salt stress, superoxide dismutase (SOD), guaiacol peroxidase (POX) and proline content were increased in 21-old days seedlings and EBL further increased the activity of antioxidant enzymes and proline content.

Keywords: 24-Epibrassinolide, cotton, salinity, pigment content, enzyme activity

Cytotoxic Constituents of DiffRACTAIC Acid against U87MG Human Glioblastoma and Primary Neuron Cells

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Abstract

Glioblastoma multiforme (GBM) is one of the most common malignant tumors all primary brain tumors. Surgical treatment is most preferred method in GBM treatment. Furthermore, combine treatments are realized via chemotherapy and radiotherapy methods. In recent years, alternative treatment methods have been tested in treatment of GBM by some researchers. Treatment by herbal products leads to these treatment methods. Lichens are symbiotic organisms that have a large variety of medicinal treatment uses. Many lichens represent potential sources of new bioactive compounds. Therefore, we have undertaken a biological screening to detect cytotoxic activity of diffractaic acid lichen secondary metabolite on GBM cell line (U87MG) and primary rat cerebral cortex (PRCC) cells. Cytotoxic activity of diffractaic acid was determined via 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) analysis. MTT analysis was performed by MTT cell proliferation assay kit. After 48 h median inhibitory concentration (IC₅₀) values were 35.67 and 122.26 mg/L for U87MG and PRCC cells, respectively. Cell viability decreased in a concentration-dependent manner for both cells. Correlation coefficients were -0.99 and -0.95 between concentration and cell viability for U87MG and PRCC cells, respectively and these correlations were significant at the 0.01 level.

Keywords: Cytotoxicity, Diffractaic acid, Glioblastoma multiforme, Lichen, MTT

Acknowledgment: We would like to thank Karamanoğlu Mehmetbey University for granting us to conduct this study (BAP/01-D-13).

Preparation and Characterization of Microbubbles Which Contain Peptide-Drug Konjugates with Magnetic Property Inhaler for Implementation for Use in the Treatment of Lung Cancer

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Abstract

Lung cancer is the most common cancer worldwide, accounting for 1.2 million new cases annually. Lung cancer strikes 900,000 men and 330,000 women yearly [1]. The most used anticancer agent cannot separate healthy cells with tumor cells, thus causing systemic toxicity and side effects. This situation limits the maximum dose which can be taken the drug. Liposomes have been developed as nontoxic, biodegradable and nonimmunogenic drug delivery vehicles. They are suitable for encapsulating and delivering a variety of therapeutic agents, including hydrophilic and lipophilic drugs, oligonucleotides and proteins and peptides. An important advantage of microbubbles is efficient coencapsulation of both hydrophilic gases and hydrophilic drugs. When gas-containing liposomes also carry drugs, they can be effective for both ultrasound-controlled/enhanced drug delivery and imaging [2]. Ultrasound-mediated drug delivery could noninvasively enhance the site-specific delivery of therapeutic agents to targeted tumors. Ultrasound has the ability to trigger drug release from a carrier and to increase cell membrane permeability [3]. In this study, we prepared microbubbles which contain nanoconjugates and argon gas at the same time. Nanoconjugates consist of magnetit linked peptide and drugs. Imaging studies was performed with ultrasound devices after the characterization studies of microbubbles. These microbubbles could have potential for effective lung cancer treatment.

Keywords: microbubble, ultrasound, nanoconjugate, lung cancer

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Synthesis and Characterization of Cu(II) and Ni(II) Complexes with Schiff Bases Derived From 2-X-Aniline

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Abstract

Complexes of Cu(II) and Ni(II) have been synthesized with Schiff bases 5-Br-salicylideneamine-2-X-aniline where (X=H or NO₂) and metalhalides where (metal=Cu or Ni). Complexes with Schiff bases have been synthesized from ammoniacal complexes of the respective metal ions [M(NH₃)₄]²⁺ where (M=Ni or Cu). Schiff bases and complexes have been characterized by IR and UV-VIS spectra. The benefit of these Schiff's bases complexes have been developed in ethanol solution and at temperature (50°C). Complexes of Cu(II) and Ni(II) have been synthesized in stoichiometry metal-ligand 1:1. On the basis of infrared, UV-VIS spectroscopic data for the synthesized complexes they differ between themselves.

Keywords: Schiff base, Co and Ni complexes, IR and UV-VIS spectroscopy.

Candida spp isolated from oral cavity of patients with diabetes mellitus and their in vitro susceptibility to antifungal drugs

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Abstract

Objective: This study aims to study the epidemiological aspects of patients with *Candida* of the oral cavity of diabetic patients and the determination of in vitro susceptibility patterns of isolated *Candida* species.

Materials and methods: Tampons of buccal cavity of 122 diabetic patients were cultured on Sabouraud agar and Chrom agar, in order to isolate, count and identify the yeasts. To select antifungal agents, the in vitro susceptibility of the isolated was performed by disc testing.

Results: All the diabetic patients carried significant amounts of yeast cells, especially *Candida albicans*, in the oral cavities. *C. albicans* (54.1%), *C. glabrata* (12.5%), *C. tropicalis* (6.4%), *C. pseudotropicalis* (3.1%), *C. dubliniensis* (4.7%), *C. krusei* (2.2%), and other yeast species 17.0%. The majority isolates were susceptible to amphotericin B (93.6%), itraconazole (92%), fluconazole (88.9%), ketoconazole (88.5%), nystatin (77.5%) and myconazole (82.3%).

Conclusion: The yeasts of genus *Candida* are the major cause of candidiasis buccal at diabetic patients and determination of their in vitro sensibility can help at the successful treatment in case of recurrent disease.

Keywords: *Candida* species, candidiasis buccal, Diabetic patients

Antibiotic use in children: A cross-sectional survey of parental knowledge and attitudes**Edita Alili-Idrizi¹, Merita Dauti¹, Lulzime Ballazhi¹**¹Faculty of Medical Sciences- Department of Pharmacy, State University of Tetova, R. of Macedonia

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Abstract

Antibiotic overuse and misuse for paediatric infections is widespread and fuelled by parents' attitudes and expectations. The purpose of the study was to investigate parents' perceptions of antibiotic use for their children and the need for proper translated leaflets. A cross-sectional survey was conducted using a self-administered questionnaire with parents who attended randomly selected community pharmacies. Responding parents differed by age, gender, education and number of children. The difference in knowledge level was statistically significant between age groups and levels of education. Among 500 parents involved in the study, almost 60% believe that antibiotic is a proper treatment for viral infections, while 44% of the parents were found to believe that antibiotics must be taken for common cold. About 50.2% of parents do not read the leaflets. Among them 52.4% because of not translated leaflets in Albanian language, 29.8% declare they are written in terms, which are not understandable by them, while 17.8% prefer to listen and follow doctors' recommendations. Our findings emphasise the need for educational interventions to increase parents' awareness for the risks of inappropriate use of antibiotics in children and the necessity and an obligation of all importers in order to achieve perfection in translating drug leaflets.

Keywords: Antibiotic, Parental knowledge, Children, Questionnaire, Leaflets

Molecular Genetic and Biochemical Responses in Human Airway Epithelial Cell Cultures Exposed to Titanium, Silicon and Tungsten Nanoparticles *In Vitro*

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Abstract

In this study, we aimed to investigate of cytotoxicity and changes in gene expression profiles influenced by commonly titanium, silicon and tungsten nanoparticles in human alveolar epithelial (HPAEpiC) and pharynx (HPPC) cell lines *in vitro* since inhalation is an important pathway for exposure to these nanoparticles. HPAEpiC and HPPC cells were treated with titanium (0-100 µg/mL), silicon (0-100 µg/mL) and tungsten (0-250 µg/mL) nanoparticles for 24 and 48 h, and then cytotoxicity was detected by lactate dehydrogenase (LDH) release and [3-(4,5-dimethyl-thiazol-2-yl) 2,5-diphenyltetrazolium bromide] (MTT) assay, while genotoxicity was also analyzed by cDNA array - RT-PCR assay. According to the results of MTT and LDH assays, all tested nanoparticles induced cytotoxicity on both HPAEpiC and HPPC cells in a time- and dose-dependent manner. Determining and analyzing the gene expression profiles of HPAEpiC and HPPC cells, while titanium and silicon nanoparticles showed more changes in genes related to DNA damage or repair, oxidative stress, and apoptosis, tungsten nanoparticle showed more changes in genes related to oxidative stress and apoptosis. This study of gene expression profiles affected by nanotoxicity provides critical information for the clinical and commercial applications of titanium, silicon and tungsten nanoparticles.

Keywords: *In vitro* gene expression, Nanotoxicity, Silicon, Titanium, Tungsten

A Contribution to the Knowledge of the Plant Bugs (Miriidae, Hemiptera) in the Different Ecosystems

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Abstract

This study aim to present a sysmtematic and ecological analysis to the plant bugs (family Miridae, order Hemiptera), in the different ecosystems of Elbasani region, Albania. The collection of biological material is performed during the period 2008- 2010. The study analyzed 92 individuals, which are represented by 16 genus and 24 species.

By analyzing the collected material, the genera *Deraeocoris* is the most represented with 4 species and a frequency of 16.67%. Habitats of K.Krasta station are represented by more species than the other stations, with 14 species and a frequency of 58.33%, with less species Bradasheshi station with 5 species and a frequency of 20.83%.

Based on the "Jaccard index of similarity coefficient", K.Krasta and Peqin stations, have a higher similarity coefficient than the other stations, of 35.29%, with the lowest coefficient K.Krasta and Bradashesh stations with 5.55%, showing a similarity of the ecological factors between these stations, which means a similarity between these habitats. Zoogeographic regions of Palearctic, representing most of the species of the species *Miridae*, with 9 species and frequency 37.50%.

Keywords: *Hemiptera*, *Miridae*, ekosystems, dominance, habitats

**Data for Aquatic Insects (Odonata) with Environmental Impact on
Aquatic Ecosystems in the Area Kavaja and Divjaka (Albania)**

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Abstract

Aquatic insects show a high interest due to their feature to serve like environmental bio-indicators. In that study, by analyzing the biodiversity of dragonfly Odonata through the comparison of the data on quantity and quality related to these aquatic insects, we have evaluated the actual environmental situation of aquatic ecosystems for the Karavasta lagoon, aquatic ecosystems around the Spillea Area and delta of Shkumbini River.

The period of time when the biological material was collected was 2009-2011. By this study are defined for Odonata Order was 23 species, 17 genera and 8 families of. The most represented group was *Anisoptera* by 14 species and a frequency of 60.86%. The *Libellulidae* is the most represented family by 8 species and a frequency of 34.78%.

The ecosystems around the Divjaka (Karavasta lagoon) are presented by a frequency slightly higher of species compared to these of Kavaja (Spille). The Odonata in the environment of Divjaka are more represented by 17 species and a frequency of 73.91% while the frequency were lower with 14 species and a frequency of 60.86% to Kavaja. It is an indicator of the quality considerably better of the Divjaka area.

In both areas are encountered 8 common species and the “*Jaccard index*” of similarity coefficient” was 34.78%, which is an indication of small difference among the conditions of environmental quality for these bio-indicator species.

Keywords: Water, Environmental Impact, aquatic insect

***Anthriscus nemorosa* Essential Oil exhibits anxiolytic and antidepressant like effects and improves memory on Amnesia Induced Rats**

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Abstract

Anthriscus (commonly known as beaked chervil, beaked parsley, rough chervil) is one of the aromatic members of the family Apiaceae used for medicinal purposes in traditional medicine around the world including Turkey. The members of this genus have been consumed as food and/or drink. Antitussive, antipyretic, analgesic, diuretic and memory improving effects are well documented in folk medicine. In the present study, the effects of inhaled *A. nemorosa* essential oil on spatial memory performance, anxiety and depression were assessed in scopolamine-treated rats. Decrease of spontaneous alternations percentage within the Y-maze task, increase of working memory errors and reference memory errors within the radial arm maze task, increased swimming time within the forced swimming test and decreased time spent in the open arm percentage within the elevated plus maze task were exhibited on scopolamine-induced rats. Exposure to *A. nemorosa* essential oil significantly improved these parameters, suggesting positive effects on spatial memory formation, anxiety and depression.. Therefore, our results suggest that exposure to *A. nemorosa* essential oil ameliorates scopolamine-induced spatial memory impairment, anxiety and depression.

Keywords: *Anthriscus nemorosa* essential oil, Spatial memory, anxiety, depression, Alzheimer's disease

Investigation of Antioxidant Effects of N-acetylcysteine Injection in Rabbits**Emine Atakisi¹ Onur Atakisi², Birkan Topcu³, Kezban Yıldız Dalgınlı²**¹Kafkas University Faculty of Veterinary Medicine Department of Biochemistry, Kars²Kafkas University Faculty of Science and Lecture Department of Chemistry, Kars³Kafkas University Faculty of Veterinary Medicine Department of Physiology, Kars

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Abstract

N-acetylcystein (NAC) which is acetylated derivative of cysteine amino acid is a molecule used as a mucolytic. In this study, It was aimed to investigate the effect of N-acetylcysteine on total antioxidant capacity (TAC), total oxidant capacity (TOC), nitric oxide (NO), albumin, globulin, glucose levels and GGT activity.

It was used 11 New Zealand rabbits. Blood samples from rabbits to determine control values were taken before the start of the experiment. NAC (100 mg/kg) was injected to rabbits as intramuscularly. Blood samples were collected from vena auricularis of rabbits at 3., 6. and 9. hours.

While TAC levels were found high ($p<0.05$) in 6. and 9. hours, TOC levels were found low ($p<0.05$) in 3., 6. and 9. hours after NAC injection compared to before the experiment. NO levels were found low ($p<0.001$) in 6. and 9. hours, GGT activities were found low ($p<0.05$) in 3. and 6. hours, total protein and albumine levels were found low ($p<0.05$) in 3. hour after NAC injection compared to before the experiment.

As a result, after intramuscular injection of NAC, rabbits plasma TAC levels increased, TOC and NO levels decreased. Therefore, it is thought to NAC may show antioxidant effect in a short time.

Keywords: N-Acetylcysteine, Total Antioxidant capacity, Total Oxidant Capacity, Nitric Oxide.

Dust Mites in Houses of Patients with Allergic Rhinitis**Erhan Zeytun^{1,2}, Salih Doğan², Fatih Özçiçek³, Edhem Ünver⁴**¹ Çayırılı Vocational School, Erzincan University, Erzincan, Turkey² Department of Biology, Faculty of Arts and Sciences, Erzincan University, Erzincan, Turkey³ Department of Internal Medicine, Faculty of Medicine, Erzincan University, Erzincan, Turkey⁴ Department of Chest Disease, Faculty of Medicine, Erzincan University, Erzincan, Turkey

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Abstract

Allergic rhinitis is a disease which emerged after allergens exposure of nasal mucosa. The majority of the allergen causing the allergic rhinitis is found in the internal environment. The most important indoor allergens are house dust mites. These airborne allergens are inhaled into respiratory tracts and stimulate immune system in the nasal mucosa and initiate specific IgE mediated allergic reactions.

This study was conducted to determine the numbers and the species of the dust mites present in houses of patients with allergic rhinitis. The samples were collected from the house dust of 25 patients with allergic rhinitis. Dust samples were sieved and examined under a stereo microscope with precipitation in lactic acid method. The mites isolated from the dust samples were mounted on slides in Hoyer's medium and diagnose.

We have found that, all houses were found positive in terms of mites. A total 1,616 mites were isolated from these houses. Mean number of the mites per gram dust was found as 70.26. Fifteen species belonging to the orders Astigmata, Prostigmata and Oribatida were found in the dust samples with the respective predominancy of *D. pteronyssinus* (60.45%), *L. destructor* (13.86%), *A. siro* (8.04%), *Tyrophagus putrescentiae* (%2.41), *D. farinae* (%1.48), *Euroglyphus maynei* (%1.36), *T. perniciosus* (%1.23), *Cheyletus malaccensis* (%0.62), *Cosmochthonius reticulatus* (%0.55), *Allocalvolia habrocytus* (%0.49), *Glycyphagus privatus* (%0.43), *C. eruditus* (%0.43), *Suidasia nesbitti* (%0.24), *Raphignathus collegiatus* (%0.24) ve *G. domesticus* (%0.12).

Acknowledgment: We would like to thanks to the Erzincan University, Coordinatorship of Scientific Research Projects of which financially supported this study with FEN-A-300614-0107 numbered project, Erzincan University Ethics Committee (Decision no: 2014-2/6) which approved the study and all the households who opened their house to us.

Keywords: Allergic rhinitis, House dust mites, Gram dust, Erzincan, Turkey

**Parasitic Diseases of Trout and Their Controls
in Sustainable Development of Aquaculture: Myxozoa**

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Abstract

Trout and salmon culture have important proportion in world aquaculture production. The industry has been plagued with disease problems caused by viral, bacterial, fungal and parasitic pathogens. Parasites in fish have become increasingly visible in connection with the development of aquacultural industries in the world. The present work aim to the parasitic diseases of freshwater trout caused by phylum Myxozoa such as *Ceratomyxa* sp., *Henneguya* sp., *Kudoa* sp., *Myxobolus* sp. *Tetracapsula* sp., *Sphaerospora* sp, *Myxidium* sp. and how they are transmitted, which effects they have on trouts, how they could be diagnosed, and how they could be controlled and treated.

Keywords: Disease, Parasite, Myxosporean, Trout

Ki-67 and p53 expression at the tumor and invasive tumor front in colorectal carcinoma**Fatma Hüsniye Dilek¹, Gönül Güral Çiftçi², Ali Rıza Atasoy³, Osman Nuri Dilek⁴**

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Abstract

Traditional prognostic factors of colorectal cancer include the tumor node metastasis (TNM) stage. The aggressive behavior reflects some biological properties of colorectal carcinoma. One of the biological properties was mutations of the p53 gene are frequent in colorectal carcinoma. Invasive tumor front (ITF) is the deepest three to six cell layers or detached tumor cell groups at the advancing edge of the tumor.

In this study, we selected 27 pT3 colorectal carcinoma and evaluated proliferative activity (using Ki-67 nuclear antigen), overexpression of p53 protein at the tumor and the invasive tumor front. Median Ki-67 levels were found at the tumor and invasive tumor front; 465.81 and 458.51 respectively ($p < 0.5$). Median p53 levels were found 299.81 and 441 respectively ($p = 0.076$).

A comparative statistical analysis showed no significant difference immunoexpression of p53 and Ki-67 between at the tumor and invasive tumor front.

Keywords: Ki-67, p53, colorectal carcinoma, invasive tumor front.

Effect of Al₂O₃ (Aluminum oxide) Nanoparticles on Oxidative Stress Related Enzyme Activities in Wheat (*Triticum aestivum* L.)

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Abstract

The development of nanotechnologies has increased the amount of manufactured metal oxide nanoparticles emerging environmental pollution. Aluminum oxide nanoparticles (nano-Al₂O₃) have wide range of applications in industrial as well as personal care products. In the present study, wheat (*Triticum aestivum* L.) roots were exposed to different concentrations of 13 nm sized nano-Al₂O₃ (5, 25 and 50 mg/ml) for 96 h, to reveal the biochemical responses to aluminum oxide toxicity. The control and nano-Al₂O₃ treated roots were homogenized in phosphate-saline buffer and centrifuged at +4°C. The supernatants were used for multiple analyses. The results indicated that while nano-Al₂O₃ caused an increase in the activities of superoxide dismutase, lipid peroxidation and H₂O₂ content, the catalase activity was decreased in compare the control. For determination of caspase-3, caspase-8 and caspase-9 activity, which are the central core execution switch for apoptotic PCD, Chemicon's Caspase Colorimetric Activity Assay Kit was used. The results demonstrated that caspase-like proteolytic activities increased in the root cells of wheat after nano-Al₂O₃. The loss of plasma membrane integrity was evaluated by Evans blue staining. After nano-Al₂O₃ treatment increase of Evans blue uptake was detected. In conclusion, aluminum oxide nanoparticles are significantly stressful in wheat roots culminating in multiple biochemical alterations.

Keywords: Al₂O₃ nanoparticles, caspases, catalase, superoxide dismutase, wheat

Toxic Effects of Al₂O₃ (Aluminum oxide) Nanoparticles on Wheat (*Triticum aestivum* L.) Root Cells

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Abstract

The development of nanotechnologies has increased the amount of manufactured metal oxide nanoparticles emerging environmental pollution. Aluminum oxide nanoparticles (nano-Al₂O₃) have wide range of applications in industrial as well as personal care products. In the present study, wheat (*Triticum aestivum* L.) roots were exposed to different concentrations of 13 nm sized nano-Al₂O₃ (5, 25 and 50 mg/ml) for 96 h, to reveal the cellular responses to nano-Al₂O₃ toxicity. The control and nano-Al₂O₃ treated roots were fixed in acetic-alcohol (1:3,v/v) for 24 h and stored in 70% alcohol at +4°C. The root tips were hydrolyzed in 1N HCl at 60°C for 20 min and transferred to basic fuchsin for 2 h in the dark. Squash preparations were made in 2% acetoorcein. The mitotic analysis included mitotic index and scoring of aberrant cells. The results indicated that the mitotic index decreased approximately by 50% in 50 mg/ml. Besides root cells underwent substantial changes in cell organization including nucleus morphology monitored by DAPI. The TUNEL staining confirmed the occurrence of intra-nucleosomal DNA cleavage progressively in 25 and 50 mg/ml. Immunofluorescence detection showed disorder and condensation of the microtubules after nano-Al₂O₃ treatment. In conclusion, nano-Al₂O₃ is significantly stressful in wheat roots culminating in cellular alterations.

Keywords: Al₂O₃ nanoparticles, DAPI, mitotic index, TUNEL, wheat

Antibacterial Effects of Plant Extracts on Tomato Bacterial Diseases (*Pseudomonas syringae* pv. *tomato*, *Xanthomonas vesicatoria* and *Clavibacter michiganensis* subsp. *michiganensis*)**Feray Karabüyük^{1,2}, Yesim Aysan¹**¹ Cukurova University, Faculty of Agriculture, Plant Protection Department, 01330, Adana-Turkey² Cukurova University, Karaisalı Vocational School, 01770, Adana-Turkey

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Abstract

The most important tomato bacterial diseases are bacterial speck causal agent *Pseudomonas syringae* pv. *tomato* (*Pst*), bacterial leaf spot causal agent *Xanthomonas vesicatoria* (*Xav*), bacterial wilt causal agent *Clavibacter michiganensis* subsp. *michiganensis* (*Cmm*). In this study, twenty five individual medical and aromatic plants including *Allium sativum*, *Allium cepa*, *Aloe vera* L., *Anethum graveolens* L., *Calendula officinalis*, *Coriandrum sativum*, *Cuminum cyminum*, *Echinacea purpurea*, *Eucalyptus* sp., *Foeniculum vulgare* Mill., *Lavandula angustifolia*, *Myrtus communi* L., *Matricaria chamomilla*, *Mentha piperita*, *Nerium oleander*, *Ocimum basilicum* L., *Origanum onites*, *Pimpinella anisum*, *Raphanus sativus*, *Rosmarinus officinalis*, *Salvia officinalis*, *Sinapsis nigra*, *Thymus vulgaris*, *Thymbra spicata* L. subsp. *spicata*, *Zingiber officinale* were studied for their antimicrobial activity on disease managements. Antibacterial effect of medical and aromatic plant extracts on three individual tomato bacterial pathogens were tested *in vitro* using paper disc method with three replicates. As a result, among medical and aromatic plant extracts, garlic extract inhibited *Xav* growth with mean inhibition zone of 20.0 mm in diameter. Garlic and myrtle have reduced *Cmm* development with the mean inhibition zones of 12.3 mm and 4.6 mm, respectively. Coriander, eucalyptus and garlic has shown inhibitory effect on *Pst* giving mean inhibition zones of 6.0 mm 1.5 mm and 1.0 mm. *In vivo* studies with the effective plant extracts are still running. This search is a part of PhD study and has financed by Scientific Research Unit of Cukurova University with the project number FDK-2015-4071.

Keywords: *Pseudomonas syringae* pv. *tomato*, *Xanthomonas vesicatoria*, *Clavibacter michiganensis* subsp. *michiganensis*, antibacterial, plant extracts

The Determination of the Residue Levels of Pesticides in Apples Stored Cold-Storage Depots in Karaman City

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Abstract

In this study, the residues of five commonly used pesticides in the newly stored apple samples obtained from the cold-storage depots in Karaman at the harvesting time of 2014 were investigated with the Gas Chromatography-Mass Spectrometry (GC-MS). Samples collected from 6 different cold-storage depots in the area were stored in the +4 °C refrigerator in the laboratory. The residue levels of the pesticides of diazinon, parathion-methyl, captan, carbofuran and methidathion in these apple samples were determined. In order to determine the residue levels of pesticides, at least three of the apple samples that were randomly chosen were homogenized using homogenisator. The residue of pesticides from this homogenate was extracted with acetonitrile and given to the GC-MS device properly.

Keywords: Apple, Food Material, Pesticide, Pesticide Residue.

Differential Tolerance to Aluminum Toxicity in Wheat, Rye and Triticale Characterized by RAPD Analysis

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Abstract

Aluminum (Al) toxicity is one of the major constraints for plant development and crop production on 67% of the total acid soil area in the world. Al inhibits the root growth and development due to cellular alterations including nucleus, chromosome and DNA changes. In the present study, wheat (*Triticum aestivum* L.), rye (*Secale cereale* L.) and triticale (*xTriticosecale wittmack*) seeds were grown in Hogland solution with or without 100 µM AlCl₃ (pH 4,5) for 21 d. Genomic DNA isolated from control and treated seedlings was used for RAPD-PCR amplification with 13 RAPD primers. The amplified products of RAPD primers were detected along with molecular weight marker by gel electrophoresis on 1,5% agarose gels prepared with 0,5x Tris-Borate-EDTA (TBE) buffer at 200 V for 1 hr. After staining with red safe (1/20000), the amplified products were visualized and recorded under UV light using the Genoplex UV transilluminator system.

In RAPD analysis amplified 2, 10 and 1 polymorphic fragment for wheat, rye and triticale respectively. Our observations demonstrated that different response levels under aluminium stress, among the wheat, rye and triticale cultivars.

Keywords: Aluminum, RAPD-PCR, rye, triticale, wheat.

The Effects of Salicylic Acid Application on pigment content and antioxidant enzyme activities in Rye (*Secale cereale* L.)

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Abstract

Environmental stress gives rise to the activation of adaptation and defense responses in plants. It has been known that the role of salicylic acid (SA), which is a potent signaling molecule in plants, is important in this mechanism. The aim of the present study is to detect the effects of different concentrations of SA in rye seedlings. Rye (*Secale cereale* L.) seedlings were exposed to different concentrations of SA (10, 100, 500 and 1000 μ M) for 15 days, to reveal the biochemical responses to SA application. There was no germination in the highest concentration 1000 μ M SA. The control and SA treated roots were homogenized in phosphate-saline buffer and centrifuged at +4°C. The supernatants were used for multiple analyses. The results indicated that while SA caused an increase in the activities of superoxide dismutase, peroxidase activity and lipid peroxidation, the catalase activity was decreased in compare the control. For chlorophyll content determination, the leaves were extracted in 80% acetone and quantified spectrophotometrically. According to the results SA increased chlorophyll a and carotenoid content, but decreased total chlorophyll and chlorophyll b. In conclusion, the concentration of exogenic SA application is very important and the higher concentrations may cause cellular toxicity.

Keywords: chlorophyll, salicylic acid, rye, antioxidant enzyme.

Assessing Quality and Agronomic Characteristics of Different Cultivars of Cultivated Wheat of the Field of Polog.

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Abstract

Macedonia is a country with suitable climatic conditions and fertile land for grain cultivation, wheat cultivation occupies an area of about 100,000 hectares. The purpose of this research was to evaluate the agronomic characteristics and quality of 5 wheat cultivars: Radika, Milenka, Orovcanka (Macedonia), Pobeda and NSR 5 (Serbia) in the Polog area in Macedonia. The experiment was designed as randomized blocks of 3 repetitive measurements in standard conditions of cultivation and fertilization. The following agronomic parameters were explored: weight of 1000 grains (g), hectoliter weight (g), size of grains (mm), yield (kg/ha). The qualitative parameters explored included: protein content, gluten content, Hagberg Falling Number, rheological attributes of farinograph (FU) and ekstenzograph (EU). Statistical data processing was done using SPSS 15. ANOVA showed that there were significant differences in the weight of 1000 grains, hectoliter weight, the size of grains and of the Hagberg Falling Number, but non-significant differences in yield. Higher content of protein was detected in both Milenka and Orovcanka cultivars (9.78%), while the lowest among NSR5 cultivar (8.37%). The highest yield was observed in Milenka cultivar (7800 kg /ha) while the most satisfactory values of rheological parameters and the best results during the bread-baking test were detected among the Milenka and Orovcanka cultivars. In general, it can be concluded that the cultivar Orovcanka and to a certain extent Milenka were superior compared to the Radika, NSR 5 and Pobeda cultivars.

Keywords: Macedonia, wheat, quality, proteins, rheological.

Qualitative and sensory attributes of the bread produced by mixing the flour of several wheat cultivars with their bran

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Abstract

Chemical content of the flour, especially the protein content and attributes, respectively that of gluten, significantly influences the quality of the bread. Therefore the use of flour that is obtained from various wheat cultivars is of importance in the bread production, however the increase of bran significantly influences in worsening the sensory and qualitative attributes of the bread.

From the results we observe that all the flour from wheat cultivars indicates positive chemical attributes for bread production, except for the flour of cultivar Mila, which indicated a moderately lower quality.

Qualitative bread attributes indicated that in all types of bread, by increasing the amount of bran, the volume of the produced bread decreases, but the bread produced from cultivar Orovcanka indicates a better volume; the specific volume of the bread also decreases by adding bran, whereas specific density of the bread increases. The yield of the bread generally increases with the increase of the wheat bran.

Concerning the sensory attributes, we observe that the bread produced from cultivar Orovcanka and Emeshe indicate more favorable attributes, even by increasing up to 20% of their bran, and the bread indicates favorable elasticity of the bread crumb, favorable connectivity between crust and crumb and smooth crust which is moderately thick.

Keywords: chemical content, Orovcanka, qualitative attributes of the bread, sensory attributes of the bread.

Investigation of DNA Damage and Protein Damage Caused by Oxidative Stres with Canine Visceral Leishmaniasis

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Abstract

In this study we aimed to investigate DNA damage and oxidative protein damage in dogs infected with *Leishmania infantum*. Including the experimental group in total 25 dogs was occurred 15 dogs infected with *Leishmania infantum* and control group consist of 10 dogs from 2 to 6 years. The diagnosis of visceral leishmaniasis in each dog was performed with rk39 dipstick, immunofluorescence antibody test (IFAT). The values were measured plasma malondialdehyde, protein carbonyl groups, nitrotyrosine and total antioxidant capacity in plasma taken from blood samples and oxidative stress caused by DNA damage viewed by the COMET method. While level of MDA, an indicator of lipid peroxidation, was found significantly higher ($p < 0.05$) in dogs infected with *Leishmania infantum* than control groups, TAC levels were found lower in patients dogs ($p < 0.05$). PCO content in plasma and NT values were higher in dogs with *Leishmania infantum* than control group. However The difference in both value was not statistically significant ($p > 0.05$). According to the results, Lymphocyte cells are impaired in the *Leishmania* dogs goup and both tail intensity (TI) and tail moment (TM) values are observed higher in *Leishmania* dogs group than control ($p < 0.05$, $p < 0.01$). Consequently, mentioned parasites detected to caused oxidative stress there by protein and DNA damage in host.and decreased antioxidant capacity concentration that prevents the destructive effects.

Keywords: Leishmaniasis, COMET, oxidative stres, dog

Diabetes-induced renal failure is associated with tissue inflammation and neutrophil gelatinase-associated lipocalin: Effects of resveratrol

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Abstract

Diabetes mellitus is a chronic inflammatory disease characterized by high blood glucose levels due to absence of the secretion or inefficient use of insulin in the body. In this study, we aim to investigate how resveratrol administration affects the renal functions and pro-inflammatory signaling pathway components in cases of streptozotocin-induced diabetes. Male Wistar rats were randomly divided into four groups: (1) control/vehicle; (2) control/20 mg/kg resveratrol; (3) diabetic/vehicle; and (4) diabetic/20 mg/kg resveratrol. In addition to renal glucose, lipid, angiotensin-1 (ANG-1), asymmetric dimethylarginine (ADMA), erythropoietin (EPO), malondialdehyde (MDA), neutrophil gelatinase-associated lipocalin (NGAL) contents, gene expressions of pro-inflammatory markers such as inducible nitric oxide synthase (iNOS), nuclear factor kappa B (NfκB), nuclear factor (Erythroid-Derived 2) like-2 (Nrf2), and protein contents of interleukins-1β,6,8 (IL-1β,6,8) and tumor necrosis factor-α (TNF-α) were analyzed using qRT-PCR and ELISA, respectively. The rats in the diabetes group demonstrated significantly lower terminal body weights and renal ANG-1, but significantly higher renal glucose, cholesterol, triglyceride, ADMA and MDA concentrations. Diabetes triggered the inflammatory symptoms of the kidney tissues which were evident by NGAL levels. Renal inflammation was considerably associated with pro-inflammatory-pathway as a significant up-regulation of the components; iNOS, NfκB, Nrf2, IL-1β, IL-6, IL-8 and TNF-α, had been identified in the diabetes group. To some extent, resveratrol administration had reversed the diabetes-induced changes in the renal tissues. Taken together, resveratrol partially improved renal failure induced by diabetes. This may be due to the healing activities of resveratrol on tissue inflammation and renal failure.

Keywords: Diabetes, resveratrol, inflammation, kidney, renal failure, NGAL.

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Screening of Turkish Chickpea Genotypes For Resistance Against *Ascochyta rabiei***Göksel Özer¹, Harun Bayraktar², Abdulkadir Aydoğan³**¹Department of Plant Protection, Faculty of Agriculture and Natural Sciences, Abant İzzet Baysal University, Bolu²Department of Plant Protection, Faculty of Agriculture, Ankara University, Ankara³The Central Research Institute for Field Crops, Ankara

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Abstract

Ascochyta blight, caused by *Ascochyta rabiei* (Pass.) Labr., is a major disease affecting chickpea production worldwide. Development of *Ascochyta* blight resistant or tolerant cultivars is the most practical and effective mean of disease control. For this purpose, 46 chickpea genotypes selected from yield trials in field were screened for resistance against pathotype I of *A. rabiei* using detached leaflet assay. Young leaflets collected from 15 days old chickpea plants were inoculated with a spore concentration of 1.5×10^5 per mL. Disease reaction of leaflets was evaluated using both disease incidence and severity values according to the method of Dolar et al. (1994). The results of pathogenicity tests revealed significant variation among chickpea genotypes. Mean disease severity for genotypes ranged from 0 to 62% while disease incidence values were between 3.33 and 93.1%. The chickpea genotypes Tüb-47, Tüb-26, Tüb-44 and Tüb-22 showed highly resistance against the infection of *A. rabiei*. The values of disease incidence highly correlated with that of disease severity. The lowest values were observed on Tüb-47, Tüb-26, Tüb-44, Tüb-22, Tüb-21 and Tüb-35 chickpea genotypes. Also, this pathogenicity test may be useful as an alternative method for molecular studies on the rapid detection of resistance reactions of different chickpea genotypes to *Ascochyta* blight.

Keywords: *Ascochyta rabiei*, Chickpea, Disease reaction, Resistance screening,

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First Record of *Eudiplodinium dilobum* (Dogiel, 1927) (Ophryoscolecidae, Entodiniomorphida) from Water Buffalo

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Abstract

In this study, the taxonomical and morphological features of rumen ciliate *Eudiplodinium dilobum* living in the rumen of buffaloes (*Bubalus bubalis*) in the area of Kastamonu, Turkey were investigated. *Eudiplodinium dilobum* was observed in rumen contents from 4 animal out of 6 surveyed in the area of Kastamonu, Turkey. It constituted 6.9% of the total ciliate population and had a 66.7% frequency of appearance. This study reports for the first time in Turkey and the world occurring of *E. dilobum* in water buffaloes. Specimens were found to be similar to the original descriptions on the basis of morphological characters and biometric data. It has concluded that the differences of the host animal species, the feeding habits of animals, the geographical variations or a combination of these factors are important in the evaluation of biometric data of species.

Keywords: *Eudiplodinium dilobum*, *Bubalus bubalis*, water buffalo, Kastamonu, Turkey

The Biochemical Toxicities of TiO₂ Nanoparticles on Adult Zebrafish (*Danio rerio*)

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Abstract

The development of nanotechnology is often considered as a sort of novel industrial revolution. Nanoparticles (NPs) are reported to be a potential environmental health hazard. Titanium dioxide NPs is extensively used in a variety of products, including industrial materials and cosmetics. Also development of nanotechnology will be accompanied by an increasing release of “nano-wastes” in natural environments. TiO₂-NPs may pose significant risks to aquatic organisms. In the present study, we aimed to make the toxicological assessment of TiO₂-NPs exposure to an aquatic model species zebrafish (*Danio rerio*). The experimental groups of fish divided four parts (control, 1ppm, 2ppm and 4ppm of TiO₂) including per 10 fish each aquarium tank. After 120 hours muscle, gill and liver tissues were removed and homogenized. Malondialdehyde (MDA), catalase activity (CAT) and total protein (TP) levels determined using spectrophotometric methods. MDA levels decreased in muscle and liver but increased in gill. CAT activity improvement in muscle and liver contrary to gill. In experiment groups reduced TP was observed. As a conclusion uncontrolled using of nanoparticles has been seen to cause important problems in aquatic organisms and whole environment.

Keywords: Nanoparticles, TiO₂, Oxidative stress, *Danio rerio*, model species

Antibacterial Activity of Extracts of Some Lichen Species On *Escherichia coli* PSB401**Ezgi UÇARKUŞ¹, Gülşah ÖZYİĞİTOĞLU², Nüzhet Cenk SESAL²**¹Marmara University, Institute of Pure and Applied Sciences, Biology Department, Istanbul²Marmara University, Faculty of Arts and Sciences, Biology Department, Istanbul

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Abstract

It is aimed to detect the antibacterial activity of lichens against the mutant bacterium *Escherichia coli* PSB401 by testing the extracts of 3 lichen species; *Evernia prunastri*, *Hypogymnia physodes* and *Ramalina farinacea*. Ether and MCA (mix of Methanol-Chloroform-Acetone) extracts of each lichen species were used. The different concentrations of these extracts containing the specific secondary metabolites of these three lichen species were tested via 96-well plate on *Escherichia coli* PSB401 bacterium. The measurements were performed after 24-hour incubation. Minimal inhibitory concentrations (MICs) of lichen extracts were also determined.

According to the obtained results, extracts of *H. physodes* and *R. farinacea* lichen species showed a high antibacterial activity on *E. coli* PSB401 as much as antibiotics that used as a control group. the extract of *E. prunastri* was also active against *E. coli* PSB401 with a lesser extent than the extracts of the other two lichen species. The data indicated that the lichen extracts containing the secondary metabolites are revealed antibacterial activity on Gram negative bacteria. In the future studies, it's required to test more lichen species on Gram negative bacteria in order to strengthen the throughputs.

Keywords: lichens, antibacterial, *Escherichia coli* PSB401

* This study is supported by the project of TÜBİTAK with Number 113S306.

Distribution of Coagulase Positive Staphylococci from Raw Milk Stored at Different Temperatures with Various Periods

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Abstract

The purpose of this study is to research the relationship between the distribution of coagulase positive staphylococci in raw milk stored at different temperatures with various periods. Milk used as raw material was obtained from 3 different farms can be controlled cows of disease states and using drug. The materials were taken in the three-month period in order to evaluate the seasonal variation. From every each business, samples were collected with each quarterly four times a year. For being analyzed, samples after storage at different temperatures with various periods, from each of three months in each period of 10 raw milk samples were taken. So, a total of 40 (4x10) samples were taken four times a year from a business. Therefore, the scope of work within a year in four period (season) 3 from a total of 120 (4x3x10) pieces of raw cow's milk samples was studied. Coagulase positive staphylococci count analysis and species identifications were performed after the samples were incubated for 12 hours, 24 hours and 48 hours at 4 °C, 10 °C and 22 °C. Statistically, a significant relationship was found between coagulase positive staphylococci count and incubation period and dairy business that raw milk obtained but a significant relationship was not found between coagulase positive staphylococci count and incubation temperature and the season that collected raw milk. Coagulase positive microorganisms were identified as *S. aureus*. In only one sample *S. hyicus* was found as 2 log (cfu/ml). It was determined that the other coagulase positive staphylococci couldn't found. This research is provided at the end of the data that can be done to review the raw milk quality and farm hygiene. At the end of the study, significant differences were found between the farms which obtained the raw milk and it was concluded that the incubation time is also important. In addition, the impact of seasonal factors on the coagulase positive staphylococci count was found to be insignificant. The presence of significant differences between farms has put forward the business factors. The results showed that the time between production and consumption must be reduced as much as possible.

Keywords : Raw milk, coagulase, staphylococcus

*This research was supported with the project numbered in 13202009 by the Coordinatorship of Scientific Research Projects in Selcuk University. This research was summarised from Mustafa İNAL's PhD thesis.

The Effects of Ultrasound Application on Green Algae *Chlorella variabilis*

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Abstract

Algae are natural photosynthetic organisms that are common in the environment. Algae are an integral part of an aquatic ecosystem with recycling nutrients. An algal bloom is a natural phenomenon that appears in eutrophic conditions. Eutrophication is defined as the accumulation of the nutrient occurring in a water source. Nitrogen and phosphorus are the main nutrients required for blooming cases of algae. Chemical treatments are recently being used to clean eutrophic lakes but such treatments are expensive and cause secondary pollution in the environment. Ultrasound usage was classified as a non-chemical strategy to control algal growth. Ultrasound works by the phenomenon of acoustic cavitation which occurs after sound waves above the frequency of 20 kHz. In the present study, ultrasound usage was investigated for disruption of green algae *Chlorella variabilis*. In this study, ultrasound applied at a frequency of 60 kHz for durations of 5–120 min to *Chlorella variabilis* culture, which was cultivated in BG11 medium. Our results especially for the longer exposure times, between control and experiment groups, were more pronounced. As a conclusion this study identified that; the efficacy of ultrasonic treatment of algae, which is consistent with the findings across the literature is highly variable.

Keywords: Ultrasound, Green Algae, *Chlorella variabilis*, Eutrophication, Water treatment.

Quantification of Disease Progression of *Ascochyta rabiei* in Chickpea using Real-time Fluorescence PCR

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Abstract

Ascochyta blight, caused by *Ascochyta rabiei* (Pass.) Labr., is an important foliar disease of chickpea worldwide. Resistance breeding is the most economical and effective method for controlling *Ascochyta* blight. Thus, the development of reliable and repeatable resistance screening techniques is important for resistance screening of chickpea genotypes against *A. rabiei*. In this study, a real-time polymerase chain reaction (PCR) was developed for the quantification of *A. rabiei* biomass in infected chickpea tissues and accurate monitoring of disease progression on both resistance and susceptible chickpea cultivars. The chickpea cultivars of ILC 482 (resistant) and Sarı98 (susceptible) were used in whole-plant inoculation and detached leaflet inoculation experiments. The plant samples were evaluated at different time intervals up to 14 days after inoculation and used for DNA extraction. Standard calibration curve for pure fungal genomic DNA was constructed using tenfold serial dilution of quantified DNA. The primer pairs, namely HEF1 and HEF2, were designed to specifically amplify translation elongation factor 1 alpha (EF) gene of *A. rabiei*. Real-time PCR was performed using SYBR Green I technology. The results revealed a strong correlation between visual assessments of disease severity and pathogen quantifications in infected chickpea tissues. This technique may be useful for efficient selection of resistant breeding material, even in an early stage of infection.

Keywords: *Ascochyta rabiei*, Chickpea, Disease quantification, Real-time PCR, SYBR Green I

*This work was supported by TÜBİTAK Project 1130074 (Turkey)

Effects of zinc toxicity on thymus in broilers**¹H.H. Dönmez, ²M. Yörük, ³N. Şimşek**¹Department of Histology and Embriology, Veterinary Faculty, Selçuk University, Konya, TURKEY²Department of Histology and Embriology, Veterinary Faculty, Yüzüncü Yıl University, Van, TURKEY³Department of Histology and Embriology, Medicine Faculty, Balıkesir University, Balıkesir, TURKEY

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Abstract

The objective of this study was to evaluate the effects of increasing levels of zinc (Zn) supplementation on thymus. A total of 60 broiler chicks were utilised and allotted into one of four treatment groups, namely, 0 (Control), 125 ppm, 500 ppm, 1000 ppm Zn supplemented groups. While 125 and 500 ppm Zn supplementation has not caused significant changes on thymus, lymphoid cell degenerations in medulla were observed on histological sections of thymus and then, these degenerations resulted in cystic structures in chicks supplemented with 1000 ppm Zn.

Keywords: Broiler, zinc, thymus.

The Role of Risk Management in Kosovo Economic development

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Abstract

Risk management today involves identifying and assessing overall risk, so we must develop strategies to minimize the risks, even when they do mitigate the contrasting effects or have the purpose of obtaining benefits. This management model today is the main factor in the formation of the project which then continues throughout the life cycle of a project. The paper will recommend how to act when confronted with risks answers to questions related to risk management and the following questions: What could be errors in a possible project? How much is probability to happen error? How it impacts the error in our project? Risk management today is playing an important role in economic development, and that taking into consideration that Kosovo is a new country, and every wrong decision brings us back and made us very laborious road to economic competition with countries in the region and the EU. The risk may be present in the general work, he reduced or mitigated, but can never be eliminated entirely.

The paper addresses the management of risk that found during the process of economic development in Kosovo, making an analysis of economic research.

Keywords: Risk, management, economy, business, process

Hydrocarbon Impact And Assessment Environmental Effects In Fier Oilfields Area**Alma Shehu¹, Hazir Pollozhani², Seit Shallari¹, Alfred Mullaj¹, Marjanthi Guri¹**¹ Agricultural University of Tirana, Agro Environment & Ecology Department, Tirana-Albania,² Faculty of Food Technology and Nutrition, State University of Tetova

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Abstract

Ecosystems in Fieri district provide resources and opportunities for the economic development offering natural resources such as sea and land, biodiversity such as forests, wetlands, etc. Oil industry activities have influenced environmental pollution in general. Flora is characterized by a long vegetation period, which may even exceed 10 months. The study basic hypothesis is: "Fier oil industry environment is polluted by hydrocarbons with impacts on the flora, fauna and man health". This study shows the presence of high levels of hydrocarbon in soil, flora and fauna in Fieri oilfields area. Flora and fauna is continuously pressed by the presence of high concentrations of toxic substances in the soil. Pollution impact in health is high as a consequence of contacts with toxic substances or toxic steam absorbing and is indirectly connected to agriculture and farming products consume contaminated by hazardous pollution elements of this industrial activity (contamination of food chain).

Keywords: Biodiversity, flora, fauna, plant species.

Effects of Salt Stress on Growth and Some Technological Traits of Coriander (*Coriandrum sativum* L.) Cultivars

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Abstract

Coriander is an annual herb of *Umbelliferae* family which is grown for a spice and essential oil of its seeds. Salinity is the one of the serious problem for agriculture because of limiting productivity of crop plants. This research study, was aim to test the effect of 5 different salt levels (0,25,50,75,100 mMol) on three coriander cultivars (Gürbüz, Kudret-K, Pel-Mus). The experiments were conducted with 3 replications in greenhouse of Karaisalı Vocational School of Cukurova University in 2014.

In the research; plant height, number of umbrella/plant, number of seeds/ umbrella, number of branches/ plant, seed yield/plant, essential oil rate/plant, essential oil yield /plant were determined. General results of the study indicated that; growth and yield parameters and technological properties of coriander cultivars were effected by salt stress. Particularly, highest essential oil rate/plant obtained from 75 mMol of Kudret- K cultivar. It has demonstrated great performance up to 75 mMol.

Keywords: Coriander, salinity, esssential oil

Contributions to the Trichoptera (Insecta) Fauna of Kastamonu (Turkey)**İbrahim Küçükbasmacı¹, Suat Kıyak²**¹ Kastamonu University, Sciences and Arts Faculty, Department of Biology, Kastamonu/Turkey² Gazi University, Sciences Faculty, Department of Biology, Teknikokullar, Ankara/Turkey

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Abstract

The number of authors who have conducted research on the Trichoptera fauna of Turkey is small. Therefore Trichoptera fauna of Turkey couldn't be found out yet completely. It is observed that there are many places to be investigated for determining to Trichoptera fauna. According to earlier studies, twenty-nine species and three subspecies of Trichoptera have been reported to date in the fauna of Kastamonu. In this study, it is aimed to determine Trichoptera fauna of Kastamonu and to make a contribution to Turkish Trichoptera fauna. This research was carried out in Kastamonu between May 2003 and September 2007, forty-eight species and one subspecies of Trichoptera belonging to 24 genera of 14 families (Rhyacophilidae, Glossosomatidae, Ptilocolepidae, Hydroptilidae, Philopotamidae, Hydropsychidae, Polycentropodidae, Psychomyiidae, Limnephilidae, Lepidostomatidae, Leptoceridae, Odontoceridae, Sericostomatidae and Beraeidae) were determined. Trichoptera fauna of Kastamonu has increased to 55 from 32 with this study. Thirty-six of 55 taxa are new records for the Trichoptera fauna of Kastamonu.

Keywords: Trichoptera, fauna, Kastamonu, Turkey

A New Highly Selective Ammonium Ion Selective Electrode And its Analytical Applications**Erdem KARATAŞ¹, Ayse Nur Kesici¹, Öner EKİCİ², Alaaddin ÇUKUROVALI² and İbrahim YILMAZ¹**¹Karamanoğlu Mehmetbey University, Kamil Özdağ Science Faculty, Department of Chemistry,
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Abstract

Ion selective electrodes have continued to be an important development in the field of analytical chemistry since the end of 1960s. These electrodes are utilized in many fields including physiology, biochemical, biomedical, clinical and environmental analysis [1]. One of the most effective ammonium receptor is nonactin, a natural antibiotic agent that is currently used commercially in ion-selective electrodes. However, ammonium ISE based on nonactin has poor selectivity over potassium ions, therefore, the NH_4^+ ion cannot be discriminated effectively from the K^+ ion [2,3]. For determination of ammonium ion concentrations in different samples, a perfect ion selective electrode which has highly selective, having low detection limit and long life time is still significant challenge.

The aim of this work is to develop of new and highly selective ammonium ion selective electrodes and performed their application in biological fluids. Firstly, a new ammonium ionophore was synthesized and the electrodes prepared by using synthesized compound. Secondly, we determined its selectivity, response time, working range, detection limit and life time. In addition, we carried out its applications in biological fluids such as urine and bloods.

Keywords: Ammonium, ion selective electrode, indazole**Acknowledgement:** We would like to thank to the Scientific and Technological Research Council of Turkey (TUBITAK Grant Number 112T339) for financial support of this work**References**

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Microbial Biotransformation of Oleic Acid by 27 Different Microorganisms**İsmail KIRAN¹, Özge ÖZŞEN¹, Fatih DEMİRCİ²**¹Department of Chemistry, Faculty of Arts and Sciences, Eskişehir Osmangazi University, 26480, Eskişehir, Turkey²Department of Pharmacognosy, Faculty of Pharmacy, Anadolu University, 26470, Eskişehir, Turkey

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Abstract

Oleic acid is a mono-saturated fat found in significant quantities in various edible oils. Scientific studies have shown that consuming olive oil may help to lower the levels of harmful low-density lipoproteins in the bloodstream. It is also known that plants use oxygenated and unsaturated fatty acids against pathogenic microorganisms. Molecular modifications of fatty acids have been carried out for many years where the addition of functional groups may enhance the activity of the molecule. Therefore, the biological derivatisation of oleic acid with the aim of producing new bioactive metabolites is an important field for xenobiochemistry and pharmacology. In this study, it was aimed to produce oleic acid derivatives using microorganisms as biotechnological methods. Pre-biotransformation of oleic acid was carried out with 27 different microorganisms for 7 days at 25°C in an α -medium. Thin-layer chromatography (TLC) was used to detect the metabolite. It was found that extracts obtained from biotransformation of oleic acid with *Alternaria alternata* (M₁, M₂, M₃), *Aspergillus terreus* var. *africanus* (M₄, M₅, M₆), *Aspergillus alliaceus* NRRL 317 (M₇, M₈) and *Saccharomyces cerevisiae* ATTC 9763 (M₉, M₁₀) showed polar compound mixtures detected by TLC.

Keywords: Biotechnology, Microbial biotransformation, Microorganisms, Oleic acid, TLC

First record of the sealworm, *Pseudoterranova decipiens* (Krabbe, 1878) in the boque (*Boops boops* (Linnaeus, 1758)) caught off Ayvalık in Edremit Bay, northern Aegean Sea

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Abstract

This study was carried out to determine a nematod species, *Pseudoterranova decipiens* of the boque, *Boops boops* (Linnaeus, 1758) from Edremit Bay (Ayvalık), northern Aegean Sea between September 2014–February 2015. One parasitic nematod species, *Pseudoterranova decipiens* was recorded for the Nematoda fauna at North Aegean coast of Turkey for the first time. For this purpose, *Pseudoterranova decipiens* was isolated from the body cavity of fish affected. The Anisakidae are a family of intestinal roundworms. They are also called the marine ascarids. The larvae of these worms can cause anisakiasis when ingested by humans, but do not reproduce except in marine mammals or seabirds. So, the occurrence of *P. decipiens* in intestine of *B.boops* may be accidental, in accordance with its feeding. In the present study, *Pseudoterranova decipiens* has been recorded for the first time from Turkey. The purpose of this study is to contribute to the fauna of nematodes with the occurrence of *P. decipiens* in boque, *Boops boops* as a host except for an important final host, a seal.

Keywords: *Pseudoterranova decipiens*, *Boops boops*, Edremit Bay

Observations on the growth, and reproduction of the bleak, *Alburnus alburnus* (L.) in Çaygören Dam Lake (Balıkesir), Turkey

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Abstract

In this study, the length-weight relationship, condition factor and reproduction characteristics of 713 bleak, *Alburnus alburnus* (L.) from the Çaygören Dam Lake were investigated monthly between November 2010-2012. For this purpose, Sex ratio was determined as 1: 1.06 (M:F), corresponding to 49% male and 51% female. The length-weight relationships for females and males are $W=0.0087L^{3.26}$ for females and $W=0.0095L^{3.22}$, respectively. It was shown that both of sexes had positive allometric growth for bleak (t-test, $P>0.05$, $r^2>0.96$). Spawning period of this species inhabiting Çaygören Dam Lake occurred between April and August with a peak in June as a multiple spawner. The values of condition factor were opposite to gonadosomatic index. being generally higher just prior to spawning season and lower after spawning. In conclusion, the bleak population occurred a regular growth in Çaygören Dam Lake.

Keywords: Çaygören Dam Lake, *Alburnus alburnus*, Reproduction

Effects of Microalgae on Fish Reproduction: Egg Yield and Larval Development**Tolga Coşkun¹, Levent Doğankaya¹, Nilsun Demir¹**¹ Ankara University, Faculty of Agriculture, Department of Fisheries and Aquaculture, Turkey

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Abstract

As well as having biological and ecological roles in aquatic ecosystems the microalgae include important food substances for aquatic animals. There are many studies focused on the effects of microalgae on egg yield, gonad development, larvae, somatic growth and reproductive performance of fish. Microalgae (such as *Chlorella*, *Scenedesmus*, *Dunaliella*, *Spirulina*, *Haematococcus* etc.) are used in different purposes because of their protein, β -carotene, unsaturated fatty acids and vitamin content. Lipid and fatty acid composition in broodstock diets are as major dietary factors which determine the success of reproduction and survival of offspring. Highly unsaturated fatty acids (HUFA) increase fecundity, fertilization and egg quality. Also vitamins such as vitamin E, vitamin A and ascorbic acid are known to be effective on reproductive performance, gonad development of fish and egg abnormality, hatching rate and survival of larvae. Since carotene is another effective dietary compound on reproduction in fish and crustacean, *Dunaliella* and *Haematococcus* are in the limelight by having large amounts β -carotene. In addition carotenoids may perform an antioxidant role similar to that of α -tocopherol.

This poster summarizes recent studies comprising the effects of microalgae on fish reproduction, fecundity, gonad development and larval phase.

Keywords: microalgae, fish reproduction, growth, survival

Novel coumarin derivatives synergize with tamoxifen in blocking growth and inducing apoptosis of breast cancer cells

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Abstract

Possible synergistic effect of tamoxifen (2 μ M) and hydrazinyldiene-chroman-2,4-diones (10-100 μ M) was examined with an aim to create more effective treatment for ER+ breast cancers. Anti-breast cancer effect has been evaluated on the proliferation of MCF-7 breast adenocarcinoma cells using MTT and alamarBlue assays. Cell viability was evaluated after 48h-treatment and the IC_{50} of the coumarin derivatives were determined. The apoptotic effect was evaluated by detection of PARP cleavage and reduced activity of the survival kinase Akt.

The results demonstrated dose-dependent activity, with a percent of apoptotic cells after combination treatment being significantly higher (53% to 79%, 10 μ M and 100 μ M, respectively) than the one in the cell lines treated with tamoxifen (29% to 37%) and the synthesized coumarin derivatives alone (11% to 68%, 10 μ M and 100 μ M, respectively). The IC_{50} of the synthesized compounds significantly decreased in synergy with tamoxifen (33% to 51%). Coumarin derivative having thiazole moiety with additional methyl groups attached to the carbons at positions 5 and 4 in the thiazole ring showed to be the most potent, with IC_{50} 20 μ M when administered alone and 10 μ M in synergy with tamoxifen. In conclusion, the novel coumarin *derivatives* enhance the activity of tamoxifen and this combination may be suitable for prevention of ER+ breast cancer or development of related compounds. Further studies are needed to elucidate precisely the type of receptor involved in the activity and the mechanism of action.

Keywords: hydrazinyldiene-chroman-2,4-diones, tamoxifen, breast cancer, MCF-7 cells, antiproliferative effect

Vitamin D Deficiency in Pregnant Women and the Associations of Vitamin D Levels With Some Parameters

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Abstract

Vitamin D has significant roles in pregnancy. Its deficiency has been associated with preeclampsia, gestational diabetes mellitus and congenital rickets. We aimed to determine serum levels of 25-hydroxyvitamin D(25(OH)D), alkaline phosphatase(ALP), calcium(Ca⁺²), phosphorus(P) in pregnant and the associations of 25(OH)D with a variety of factors on 156 pregnant, 46 non-pregnant women(ages 18-39) with a questionnaire. 25(OH)D, Ca⁺², P were low in pregnant compared to non-pregnants(p<0,001) while there was no difference in ALP levels(p>0,05). 25(OH)D was not different in women with veiling dressing compared to non veiling women in both pregnant and non pregnant(p>0,05). There was no correlation between 25(OH)D and gestational week in pregnant(p>0,05)(r=0,070). There was no difference in 25(OH)D according to the number of gestation and children, educational and income status, exposure time to sunlight, Ca⁺² content of diet in both pregnant and non-pregnants (p>0,05). 25(OH)D were higher in pregnant who use daily vitamin D formulations(500 IU) compared to pregnant who don't use any formulation(p<0,05). Vitamin D inadequacy is determined in pregnant, daily 500 IU vitamin D increased 25(OH)D in pregnant, but this is still lower than the levels of non-pregnants. We propose that pregnant should use vitamin D formulations higher than daily 500 IU.

Keywords: 25-hydroxyvitamin D, alkaline phosphatase, calcium, phosphorus, pregnancy

A Study on Comparison of the Antimicrobial and Antioxidant Activities of *Ocimum basilicum* L. and *Ocimum basilicum* var. *minimum* L.

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Abstract

In recent years, the essential oils and herbal extracts have attracted a great deal of scientific interest due to their potential as a source of natural antioxidants and antimicrobial compounds. Antimicrobial activities of two plants against food pathogens have not been reported to the present day. The aim of this work was to investigate of the antimicrobial and antioxidant potentials of different extracts from *Ocimum basilicum* and *Ocimum basilicum* var. *minimum*. The extracts were screened for antimicrobial activity against food pathogens. The different extracts of plants were tested by disc diffusion assay. In addition to, the plant extracts were tested against the stable DPPH (2,2-diphenyl-1-picrylhydrazylhydrate) free-radical. The aqueous and methanol extracts of *Ocimum basilicum* showed maximum inhibition zone against *Salmonella* Typhimurium and *Listeria monocytogenes*. Antimicrobial activities of *Ocimum basilicum* var. *minimum* extracts were not found against microorganisms. In addition, aqueous extracts of both plants indicated a strong antioxidant activities (trolox equivalent for *Ocimum basilicum* = 2,11 mM and trolox equivalent for *Ocimum basilicum* var. *minimum* = 1,80 mM). According to our results, some of the plant extracts possess compounds with good antibacterial properties that can be used as antibacterial agents in the search for new drugs.

Keywords: Antimicrobial activity; Antioxidant activity; MIC; *Ocimum* sp.

In vitro* adventitious shoot regeneration from internodal explants of aquatic plant *Shinnersia rivularis

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Abstract

Shinnersia rivularis, is an important aquatic plant that has been used in the aquariums due to its ornamental appearance. Plant twigs were surface sterilized with H₂O₂ and cultured on MS medium for gaining contamination free plants. After two weeks, 1st and 2nd internode explant were cultured on MS medium containing 0.05-0.80 mg/l BAP with 0.20 mg/l NAA in order to induce adventitious shoot regeneration under in vitro conditions. Shoot regeneration frequency ranged 58.33-75.0 % from both internodal explants. Whereas, shoots per explants of 1st and 2nd nodal explants ranged 6.12-15.61 and 4.99-12.50 respectively. Maximum number of shoots per explants from both explants was recorded on MS medium supplemented with 0.80 mg/l BAP+0.20 mg/l NAA. Shoots length ranged 0.79-1.25 cm and 0.87-.71 cm for 1st and 2nd nodal explants respectively. In vitro regenerated shoots were taken from explants and rooted on MS medium containing 1.0 mg/l IBA. Rooted plants were transferred to aquarium containing tap water for successful acclimatization.

Keywords: Adventitious, Aquatic, Internode, In vitro, Shoot regeneration

Determination of Germination and Seedling (Rootstock) Growth Performance of Some Walnut Cultivars (*Juglans regia* L.)

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Abstract

This research was carried out to determine the germination ratio and seedling growth of 11 (Maraş-18, Maraş-12, Sütyemez-1, Sütyemez-2, Bilecik, Kaman-1, Pedro, Howard, Fernor ve Franquette) walnut cultivars and genotypes at Kahramanmaraş Sütçü Imam University Agricultural Faculty Hard-Shelled Fruits Research and Application Center in 2012-2013. In the study among the investigated genotypes Fernor cultivar had the lowest germination ratio with 63.0% while Maraş-18 cultivar had the highest germination ratio with 89.4%. it is also determined that seedling stem diameter of the genotypes were ranked between 7.8 mm (Fernor) to 9.9 mm (Maraş-18) while plant height of the genotypes were ranked between 24.6 cm (Sütyemez-2) to 68.7 cm (Maraş-18).

Keywords: Walnut (*Juglans regia* L.), Seedling, Rootstock, Germination ratio

Determination of Glukoz, Lipid and Bone Metabolism in Diabetic and Obese Diabetic Women Over 40 Years-Old

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Abstract

Obesity and diabetes mellitus are very common diseases in the world and they cause many health complications. In this study, were aimed to determine lipid and bone metabolism changes in diabetic and obese-diabetic women over 40 years-old. In the study blood samples were taken from 21 women over 40 years old for biochemical analysis. Blood glucose and HbA1c levels were determined higher in diabetic and obese diabetic groups than the control group, on the other hand there were no differences in insulin levels between the all groups. On the other hand in diabetic women total cholesterol, triglyceride, and LDL levels were found significantly higher than the obese diabetic and control patients, and the HDL levels were found lower in both groups than the control group. While vitamin D levels in the study were found lower in the obese diabetic group than the diabetic group, Ca and P levels were found higher in both groups than the control group. There was no significant difference between the groups in Mg values. In light of the data obtained from the study, it was determined that there were significant changes in glukose, lipid and bone metabolism between diabetic and obese diabetic patients.

Keywords: Diabetes, obesity, glukoz metabolism, lipid metabolism, bone metabolism.

Microbiological Examination in Drinking Water in Tirana

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Abstract

The objectives of this study were to evaluate the microbiological quality for tap water samples in Tirana city to determine if the water is according the standard for water consumption. The presence of microbial contaminants in drinking water can cause diseases. These diseases are considered waterborne if the pathogens are transmitted by water, to infect the people that ingest the contaminated water. The microbiological analyses were performed to trace the presence of indicator organisms and pathogens such as *Escherichia coli* and *Streptococcus faecalis* and some samples are analyzed for presence of Actinomycetes. All samples are taken from the tap water in Tirana city. The tap water are in jurisdiction of Tirana networking supply. Period of this study is January – May 2015. The analyses for *Escherichia coli* and *Streptococcus faecalis* are made by multiple-tube fermentation method and the results are evaluated as most probable number (MPN). For presence of Actinomycetes the samples are analyzed with covered planting. All of the samples did not comply with the regulation of drinking water. More present in water is *Escherichia coli* but and *Streptococcus faecalis* were detected in 20% of samples. While the presence of Actinomycetes were in 60% of the samples.

Keywords: *Escherichia coli*, *Streptococcus faecalis*, Actinomycetes, tap water

Importance of Native Parasitoid, *Bracon hebetor* as a sustainable management method**Miray Durlu Külbaşı¹, Cem Özkan¹, Avni Uğur¹**¹ Plant Protection Department, Faculty of Agriculture, Ankara University, Ankara

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Abstract

Eco-friendly pest management methods are getting more important nowadays because synthetic pesticides used in crop production have lots of negative impacts. One of the best ecological pest control methods is biological control. *Bracon hebetor* Say (Hymenoptera: Braconidae) is very efficient parasitoid used for fig moth, *Cadra cautella* (Walker) (Lepidoptera: Pyralidae). Fig used as dried and fresh is one of the most important products in our country, Turkey. Tons of dried figs are exported to other countries every year, so having no residues is very important in fig production. We got a project from Republic of Turkey Ministry of Food Agriculture and Livestock in our country. Our project consists of mass-rearing, quality control and release rate of the parasitoid in different storage conditions. Also, we will make economical analyses for *Ephestia kuehniella* Zell. (Lepidoptera: Pyralidae) and *C. cautella* and then decide which one is the best for rearing of the parasitoid. After rearing, the best nutrient for the hosts will be chosen, then biological and behavioural studies of the parasitoid will be made on chosen suitable host. After economical analyses and quality control studies, parasitoids will be released to empty store, bagged and bulk dried figs at low, medium and high rates.

Keywords: Biological control, *Bracon hebetor*, fig moth, sustainability.

Histologic and Histochemical Studies on The Harderian Gland of The Female Angora Rabbits

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Abstract

In this study, it was aimed that illuminating of structure of Harderian glands of female Angora rabbits and effect of Harderian glands on the local immunity of the eye and the basic histological knowledge to be used as reference out in local interventions.

For this purpose, Harderian glands of female Angora rabbits were investigated to have been used histochemical and light microscopic evaluation comparatively.

Samples of Harderian glands of 10 female Angora rabbits were used as material.

Periyodic acid-Schiff reaction (PAS) for neutral mucosubstance and Alcian blue pH=2,5 staining method (AB) for acidic mucosubstance were performed. And also periyodic-acid-Schiff/Alcian blue (PAS/AB) combined staining at pH=2,5 was used to demonstrate simultaneously both the acidic and neutral mucosubstances in the cells of the Harderian gland.

It was determined that Harderian glands of female Angora rabbits showed gland characteristics which has branched tubulo-alveolar construction with apocrine type secretion in lipoidal form.

It was found that plasma cells were in the connective tissue septums.

Myoepithelial cells were found to be located in the corpus glandule and walls of the duct system of Harderian gland.

Keywords: Angora rabbit; Harderian gland;;histology.

Effect of Different Diets on the Longevity of *Citrostichus phyllocnistoides* (Narayanan) (Hymenoptera: Eulophidae), a Parasitoid of Citrus Leafminer, *Phyllocnistis citrella* Stainton (Lepidoptera: Gracillariidae)

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Abstract

Citrus leafminer, *Phyllocnistis citrella* Stainton (Lepidoptera: Gracillariidae) is a particular one of the most important pests of citrus seedlings. Different control methods are applied against the pest around the world which the most successful and enduring one is biological control sited on the basis of integrated control. *Citrostichus phyllocnistoides* (Narayanan) (Hymenoptera: Eulophidae), is one of the most important biological control agents of the pest and holds promise for efforts to control the proliferation of *P. citrella* in Turkey. However, it is primarily necessary to be able to rear and release to the field. In this study the effect of different diets on the longevity of *C. phyllocnistoides* were observed to identify the best diet for mass rearing of the parasitoid. The experiments were conducted under laboratory conditions at three constant temperatures ($20\pm1^{\circ}\text{C}$, $25\pm1^{\circ}\text{C}$, $30\pm1^{\circ}\text{C}$) and *C. phyllocnistoides* adults were fed with water, sugar+water (10%), honey+water (10%), 1st instar larvae of *P. citrella* and no food. The lifespan of the adults was the longest when fed with honey+water (10%) (♀:15.8 and ♂:15.2 at $20\pm1^{\circ}\text{C}$, ♀:11.7 and ♂:11.2 at $25\pm1^{\circ}\text{C}$, ♀:9.4 and ♂:8.9 at $30\pm1^{\circ}\text{C}$) and the shortest when without a nutrient (♀:1.9 and ♂:1.5 at $20\pm1^{\circ}\text{C}$, ♀:1.6 and ♂:1.2 at $25\pm1^{\circ}\text{C}$, ♀:1.3 and ♂:1.0 at $30\pm1^{\circ}\text{C}$). It is determined that foods with carbohydrate increased the longevity of the parasitoid.

Keywords: Citrus, Citrus leafminer, Biological control, Parasitoid, *Citrostichus phyllocnistoides*, food

Distribution, Damage and Natural Enemies of *Pseudococcus cryptus* Hempel (Hemiptera: Pseudococcidae) in Persimmon Plantations in East Mediterranean Region of Turkey

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Abstract

Distribution, damage and natural enemies of *Pseudococcus cryptus* Hempel (Hemiptera: Pseudococcidae) in persimmon plantations in Adana, Mersin, Hatay, Osmaniye and Kahramanmaraş provinces were determined in 2010-2012. The survey was conducted according to 0.01% of tree number rule in the five provinces. It was determined that the pest is existed only in Hatay (Antakya, Defne, Samandağ, Yayladağı, Dört Yol, İskenderun, Arsuz, Belen) and the other provinces are free from the pest in the east Mediterranean region. Active stages of *P. cryptus*, cause honeydew during sucking the plant juice from leaves, fruits, twigs and trunks. Damage has been associated with leaf and fruit drops due to severe honeydew on which sooty mold develops. *Scymnus (Pullus) araraticus* Khnzorian, *S. (P.) flagellisiphonatus* (Füersch), *S. (P.) subvillosus* (Goeze), *S. levaillanti* Mulsant, *S. rubromaculatus* (Goeze), *Nephus nigricans* Weise, *N. includens* (Kirsch), *N. (Sidis) hiebei* Füersch, *N. (S.) caneparii* Füersch and Uygun, *Pharoscymnus pharoides* Marseul, *Oenopia (Synharmonia) globata* (L.), *Cryptolaemus montrouzieri* Muls., *Chilocorus bipustulatus* L., *Exochomus quadripustulatus* L., *Sympherobius (S.) fallax* Navas, *Chrysoperla carnea* (Stephens) and *Orius minutus* L., were found as predatory species. Parasitoids of *P. cryptus* were *Anagyrus pseudococci* (Gir.), *Leptomastix dactylopii* How. and *Leptomastidea abnormis* Gir.. Quarantine measures should be emphasized to prevent the dispersion of the pest to other persimmon plantations where *P. cryptus* is not known to occur.

Keywords: *Pseudococcus cryptus*, persimmon, distribution, parasitoid, predator

The impact of technological progress on quality parameters of clear apple juice**Namik Durmishi¹, Ljubica Karakasova², Gafur Xhabiri¹, Xhezair Idrizi¹**¹Faculty of food technology and nutrition, State University of Tetova, Macedonia²Faculty of Agriculture science and Food, University "St. Cyril and Methody, Skopje, Macedonia

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Abstract

As meterijal three year study in this paper are used fruit from the variety Idared and Golden Delicious originating from Ohrid-Prespa region. After receiving the concentrate from the same varieties of apples, an analysis of the same. By applying the appropriate technology and transfer the concentrate in clear apple juice made appropriate analysis and the finished product. The chemical composition of raw materials and final clear juice examined parametri following: total dry matter, soluble dry matter, total sugars (sucrose, glucose, fructose), total protein and total oil. To obtain a standard product with rich nutritional composition of raw apples Idared and Golden Delicious showed very well applied variant with respect to the raw material of both option 50:50. In this technological process in the three years of production, the juice is standardized to a soluble dry matter 11.80%, and not added any aids other than water. Among surveyed received clear juices, using the same technological procedure in the three years, there are differences in the content of the analyzed parameters.

Keywords: Apple, Apple juice, chemical composition, technological process

Effects of tree age and soil properties on chemical constituents in Uludağ fir and Scots pine needles

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Abstract

This present study aimed at determining the effects of age and soil properties on some chemical compounds in needles of Uludağ fir (*Abies nordmanniana* subsp. *bornmulleriana*) and Scots pine (*Pinus sylvestri* L.) tree species growing in Kastamonu region in Turkey. The needle samples were collected from different tree-age classes of Uludağ fir (100, 90, 60 and 38 year-old) and Scots pine (30 and 18 year-old), and analyzed for photosynthetic pigment, proline, total soluble protein, carbohydrate constituents and lipid peroxidation level. Results showed that 90 year-old fir had the highest photosynthetic pigment, glucose, starch (polysaccharide) and H₂O₂, whereas 60 and 38 year-old fir needles showed higher proline, protein and MDA (malondialdehyde). As for Scots pine, 18 year-old needles had higher photosynthetic pigment, proline, protein and MDA, but lower glucose, starch and H₂O₂ than 30 year-old needles. The studied needle chemical constituents also showed negative/positive correlation with soil humus content, but those correlations also varied with tree species. We have therefore concluded that age and soil properties (soil humus content) has important impacts on chemical constituents of tree species, but these impacts vary with tree species. However, more detailed studies using different tree species are needed to reach the final conclusion.

Keywords: Tree Age, Photosynthetic Capacity, Lipid Peroxidation, Fir, Scots Pine

Effects of some abiotic stress factories on chemical compounds in spinach**Nezahat Turfan¹**¹ Kastamonu University, Science-Art Faculty, Department of Biology, Kastamonu

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Abstract

This present study aimed at determining the effects of different abiotic stress factories on some chemical compounds in spinach (*Spinaceae oleracea* L.) For this aim, 5-6 leafed seedlings were exposed to NaCl (75, 150 and 225 mM); heavy metals (Fe, Ni and Zn 0.2 mg/L), drought (50%) and 2% CaCO₃ applications for four weeks half-weekly which plants grown under controlled conditions. After treatments leaf samples were analyzed for photosynthetic pigment, proline, total soluble protein, carbohydrate constituents and lipid peroxidation level (MDA-H₂O₂). Results showed that photosynthetic pigment content affected positively in the leaves exposed to 50% drought and 2% CaCO₃, but 2% CaCO₃, 50% drought and 150 mM NaCl treatments gave rise to increasing of total soluble protein level. Proline contents were higher in 0.2% Ni and 75 mM NaCl treatments, *malondialdehyde* rate increased in only 0.2% Fe applications and consantration of H₂O₂ had higher in 0.2% Fe, 2% CaCO₃ and 150 mM NaCl treated spinach seedling (p<0.05). We have therefore concluded that spinach is resistant to 50% drought, 2% CaCO₃, 150, 225 mM NaCl, 0.2% Zn and Ni applications. However, more detailed studies such as antioxidants and total phenolic content and concentration of flavonoids are needed to reach the final conclusion.

Keywords: Spinach, Abiotic stress, Chemical compunds

Production of Cold Active Lipase from *Bacillus* sp.**Sara Yasemin¹, Nihan Arabacı¹, Hatice Korkmaz Güvenmez²**

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Abstract

A cold active lipase producing *Bacillus* sp. strains were isolated from sewage of oil. *Bacillus* sp. strain SY-7 was determined as the best lipase producing isolate. The highest enzyme production was found at 20°C and pH 8.0 on tributyrin media. Analyses of molecular mass of the partially purified lipase was carried out by SDS-PAGE which revealed a single band as 110.5 kDa. The enzyme activity and stability were determined by spectrophotometric and titrimetric methods. The enzyme was active between pH 4.0-10.0 and 5-50°C and showed optimal activity and stability at pH 8.0 and 20°C. In the presence of BaCl₂ (4mM), KCl (4mM), AgNO₃ (4mM), CuSO₄ (4mM), MgCl₂ (4mM), CaCl₂ (4mM), ZnCl₂ (4mM) and NaCl (4mM), the enzyme exhibited the following activities 105%, 100%, 100%, 89%, 105%, 95%, 100% and 100%, respectively. In the presence of Tween-20(5%), Tween-80(5%), detergent-1(5%) and detergent-6(5%) the enzyme saved its original activity. SDS(5%), detergent-2(5%) and detergent-7(5%) increased the activity 10%, 5% and 5%, respectively. Detergent-3(5%), detergent-4(5%) and detergent-5(5%) reduced its activity respectively, 14%, 14% and 52%. According to these results, SY-7 lipase shows alkaline, psychrotrophic, cold active and stable, chelator and detergent resistant properties. Owing to these properties, this lipase can be useful in detergent industry.

Keywords: Lipase, psychrophilic, alkaline, detergent resistant, *Bacillus* sp. SY-7,

Nanoparticles synthesized from extracts of the medicinal plant *Tetradenia riparia* reveal anti-bacterial and other pharmacological properties

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Abstract

Plant-mediated synthesis of metallic nanoparticles is a growing area of interest in the fields of green synthesis and nanotechnology. In this study, the synthesis of gold and silver nanoparticles (AuNPs and AgNPs, respectively) in flowers, leaves and stems of *Tetradenia riparia* using methanol and water was investigated. Following observation by colour change, the nanoparticles were confirmed by ultraviolet (UV) visible spectroscopy, scanning electron microscopy (SEM), energy dispersive X-ray (EDX) analysis and Fourier transform infrared spectroscopy (FTIR). UV peaks for AgNPs and AuNPs were recorded at 410 nm and 540 nm, respectively. FTIR analysis indicated that the reducing agents included terpenoids and pyrones which were responsible for reducing and capping the nanoparticles. Furthermore, crude methanol leaf extracts indicated the presence of phenolics and flavonoids (77.9±8.5 and 4.0±0.9 mg g⁻¹ dry weight, respectively). The synthesised nanoparticles were tested for anti-bacterial activity on five pathogenic bacteria. AgNPs were active and showed MIC against *E. coli* (1.56 µl ml⁻¹), *E. faecalis* (1.56 µl ml⁻¹), *K. pneumonia* (1.56 µl ml⁻¹), *P. aeruginosa* (12.5 µl ml⁻¹) and *S. aureus* (50 µl ml⁻¹). MIC using AuNPs was as follows: *K. pneumonia* (1.56 µl ml⁻¹), *E. faecalis* (1.56 µl ml⁻¹), *E. coli* (6.25 µl ml⁻¹), *P. aeruginosa* (12.5 µl ml⁻¹) and *S. aureus* (50 µl ml⁻¹). The *in vitro* screening of the nanoparticles showed potential cytotoxic activity against the human breast cancer (MCF7) cell line. Data generated were used to plot a dose-response curve of which the concentration of extract required to kill 50% of MCF7 cell population (IC₅₀) was determined to be 5 and 375 µg ml⁻¹ for AgNPs and AuNPs, respectively, after 96 hrs.

Keywords: Cytotoxicity, Iboza, Green synthesis, Nanoparticles, Plant extract

Investigation of Some Viral Agents in Aborted Ruminant Fetuses

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Abstract

The purpose of this study was to identify the presence of Bovine Herpes Virus-1 (BoHV-1), Bovine Herpes Virus-4 (BoHV-4) and Bovine Viral Diarrhoea Virus (BVDV) in the tissue of aborted ruminant fetuses using molecular methods. Therefore, internal organ samples (lung, liver and spleen, total n=48) were collected from ruminant abortions (10 lambs and 12 calves) in small-scale family operations in the province of Kars, Turkey. The presence of BoHV-1 and BoHV-4 nucleic acids was investigated with polymerase chain reaction (PCR) specific for the Glycoprotein C (gC) and Glycoprotein B (gB) gene respectively, and the presence of BVDV nucleic acid with reverse transcriptase polymerase chain reaction (RT-PCR). BoHV-1 and BoHV-4 nucleic acids could not be detected in any of the tissue samples. However, eight of the twelve aborted calves (66.66%) and thirteen material samples (52%) from twenty-five of the internal organs from these calves tested positive for BVDV RNA.

Keywords: Abortion, Bovine Herpesviruses, Bovine Viral Diarrhoea Virus , PCR

Serological Investigation of Bovine Enteroviruses in Cattle from Different Provinces**Nüvit Coşkun¹, İlke Karayel², Feray Alkan²**¹ Kafkas University Faculty of Veterinary Medicine Virology Department, Kars²Ankara University Faculty of Veterinary Medicine Virology Department, Ankara

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Abstract

Bovine Enteroviruses belong to Picornaviridae family and are classified in E and F species of Enteroviruses. These viruses have been isolated from cattle with different symptoms and from feces of healthy appearing animals. Enteroviruses are thought to be useful vaccine vectors considering their probable mild pathogenesis. For this reason seroepidemiological data about Enteroviruses of cattle population is essential. In the present study randomly selected serum samples are tested with virus neutralisation assay. Serum samples belonged to different provinces (Şanlıurfa, Bursa, Muğla, Samsun, Aksaray, Kırklareli, Malatya, Amasya, Sivas) and total of 90 serums were tested. 54 of the 90 samples were detected to have antibodies against Bovine Enteroviruses showing that infection is present in the population.

Keywords: Bovine Enterovirus, Virus Neutralisation, Seroepidemiology

Surgical site infection: Incidence and impact on hospital utilization and treatment costs.

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Abstract

The incidence and nature of surgical site infection (SSI) depends on the surgical equipment and the type of surgery. Increasing the duration of hospital stay, the incidence of mortality, morbidity and the treatment costs, SSI's bear economic difficulties. We aim to discuss the surgical site infections and their impact on the cost.

One hundred and twenty seven patients evaluated from the different surgical department general surgery in a total of 4212 operations with suspicion of SSI were included in this study. Required patient data were gathered from hospital information system and paper medical records.

Among 4212 surgical hospitalizations in the sample, 127 cases of SSI were identified (1%). On average, SSI extended length of stay by 7-25 (12,8±7,9) days while increasing cost by \$3590-29550 (\$9,874±10,712) per admission. These cases of SSI were associated with an additional 1598 hospital-days and hospital costs exceeding \$1,224 million.

SSI is associated with a significant economic burden in terms of extended length of stay and increased costs of treatment. The infection auditing tool may be useful strategy for identifying defects and guiding quality improvement interventions.

Keywords: Surgical site infections, antibiotic resistance, cost effectivity

Antimicrobial Evaluation of Oleic Acid Biotransformation Metabolites**Özge ÖZŞEN¹, İsmail KIRAN¹, Özlem ATLI², İlknur DAĞ³**

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Abstract

Oleic acid is a saturated fatty acid present in various vegetable oils such as hazelnut. It is known that oxygenated and unsaturated hydroxy fatty acids are involved in the defensive plant responses against pathogenic microorganisms. In this study, it was aimed to study the possible antimicrobial activities of oleic acid derivatives obtained through microbial transformations. *Alternaria alternata* (M₁, M₂, M₃), *Aspergillus terreus* var. *africanus* (M₄, M₅, M₆), *Aspergillus alliaceus* NRRL 317 (M₇, M₈) and *Saccharomyces cerevisiae* ATTC 9763 (M₉, M₁₀) extracts were evaluated against some human pathogenic microorganisms using agar diffusion method and compared with standard antimicrobial agents among 27 pre-biotransformation extracts of oleic acid. The MIC values were calculated for active biotransformation extracts. For determining selectivity, IC₅₀ values of extracts were determined against NIH3T3 (mouse embryonic fibroblast) cell line by XTT test. M₁ and M₃ were more effective (250 µg/ml) against all bacteria whereas M₁, M₃ and M₄ (250 µg/ml) were more effective than oleic acid (500 µg/ml) against all fungi. The best antibacterial and antifungal inhibitions were shown by the extract M₅; with MIC values of 125 and 62.5-125 µg/ml, respectively. M₃ was also found to be non-toxic with an IC₅₀ value of >500 µg/ml against healthy cells (NIH3T3) in its effective concentrations, which demonstrates a selective antimicrobial potential of M₃ among the others.

Keywords: Microbial biotransformation, Oleic acid, Agar diffusion method, Antimicrobial activity, MIC.

The development of staminate flowers in dioecious *Ficus carica* L.**Özlem AYTÜRK, Meral ÜNAL**

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Abstract

In this study, the development of staminate (male) flowers, starting from floral meristem differentiation up to fruit formation was inspected in dioecious *F. carica*. Staminate flowers were fixed in FAA (formalin-acetic-alcohol), then the material was embedded in paraffin and sections (4-8µm) were prepared. The detailed morphological analysis in staminate flowers was found out by stereomicroscop. Our findings of light microscope were supported by SEM, Confocal and Fluorescence microscope. To identify floral differentiation, floral organogenesis and the differentiation of mature flower paraffin method and identification of insoluble carbohydrates periodic acid-Schiff was applied. In *F. carica*, there are male and female trees. Male trees bear gall and staminate flowers. In a male tree, male flowers are located in a narrow band surrounding the ostiole. While stamens develop up to maturity, pistil development ceases at megasporogenesis in male flowers. Programmed cell death signals were detected by DAPI and TUNEL techniques in pistil tissue. However, the striking changes become visible on microtubule organization occurring in the stamen and pistils tissues were analyzed. Even though there is considerable knowledge on sexual differentiation in hermaphrodite plants, little information is present about sex differentiation in dioecious species. Therefore, this study will add new knowledge to this subject.

Keywords: *Ficus carica* L., dioecious, staminate flower, microtubule, Programmed cell death.

Production of Cold Active Lipase from *Bacillus* sp.**Sara Yasemin¹, Nihan Arabacı¹, Hatice Korkmaz Güvenmez²**¹ Department of Biology, Institute of Basic and Applied Sciences, University of Cukurova, Adana, Turkey² Department of Biology, Art and Science Faculty, University of Cukurova, Adana, Turkey

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Abstract

A cold active lipase producing *Bacillus* sp. strains were isolated from sewage of oil. *Bacillus* sp. strain SY-7 was determined as the best lipase producing isolate. The highest enzyme production was found at 20°C and pH 8.0 on tributyrin media. Analyses of molecular mass of the partially purified lipase was carried out by SDS-PAGE which revealed a single band as 110.5 kDa. The enzyme activity and stability were determined by spectrophotometric and titrimetric methods. The enzyme was active between pH 4.0-10.0 and 5-50°C and showed optimal activity and stability at pH 8.0 and 20°C. In the presence of BaCl₂ (4mM), KCl (4mM), AgNO₃ (4mM), CuSO₄ (4mM), MgCl₂ (4mM), CaCl₂ (4mM), ZnCl₂ (4mM) and NaCl (4mM), the enzyme exhibited the following activities 105%, 100%, 100%, 89%, 105%, 95%, 100% and 100%, respectively. In the presence of Tween-20(5%), Tween-80(5%), detergent-1(5%) and detergent-6(5%) the enzyme saved its original activity. SDS(5%), detergent-2(5%) and detergent-7(5%) increased the activity 10%, 5% and 5%, respectively. Detergent-3(5%), detergent-4(5%) and detergent-5(5%) reduced its activity respectively, 14%, 14% and 52%. According to these results, SY-7 lipase shows alkaline, psychrotrophic, cold active and stable, chelator and detergent resistant properties. Owing to these properties, this lipase can be useful in detergent industry.

Keywords: Lipase, psychrophilic, alkaline, detergent resistant, *Bacillus* sp. SY-7,

The effects of casing soil on marigold seedling growing

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Abstract

Seed germination and seedling growth of bedding plants are effected by various environmental conditions. Since the water shortages is dramatically increasing in the worldwide, in seedlings cultivation of many bedding plants, casing soil is used to save water and shorten germination period. Therefore, effects of some different materials as casing soil were investigated on seedling growing of marigold (*Tagetes erecta* L.). For this purpose, vermiculite, coarse river sand, fine river sand, quartz sand and sewage sludge were used as casing soil in seedling cultivation of two marigold cultivars (Discovery yellow and Discovery orange). Furthermore, uncovered treatment was preferred as control. In the study, seeds were irrigated according to the needs of the media and the effects of casing soil on water-saving were detected. Germination rate (%) and germination duration of seeds, plant height (cm), stem length (cm), hypocotyl length (cm), epicotyl length (cm), hypocotyl thickness (mm), epicotyl thickness (mm), root length (cm), leaf length (cm), number of leaf (counting), fresh and dry weights of plants were evaluated. As a result, it was found that is positive effects of coarse river sand and vermiculite on growth parameters. On the other hand, sewage sludge were found remarkable alternative for stunted seedlings.

Keywords: Bedding plant, *Tagetes erecta*, casing soil, sewage sludge.

Antioxidant Activity and α -Amylase Inhibition Effect of Wild Blackberry Leaf**Sebnem Selen Isbilir, Hulya Yagar**

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Abstract

Blackberry (*Rubus fruticosus*, Rosaceae) is a perennial shrub and its fruit called blackberry fruit. Berries contain a variety of phenolic compounds, vitamin C, dietary fibre, α -tocopherol, minerals and carotenoids. Not only the fruit, but also the blackberry leaves and roots are used in traditional folk medicine as medicinal agents. Infusion from the leaves are used for colds, sour throats, diarrhoea, colic pain and various respiratory problems.

In this study, the possible antioxidant properties of ethanolic extract of wild blackberry leaves were investigated by using antioxidant assays including DPPH $\cdot$ scavenging and β -carotene bleaching method. At the high concentration, the leaf extract was showed DPPH radical scavenging activity and inhibited lipid peroxidation. The natural compounds known as potential antioxidants such as phenolics, flavonoids were also determined. Total phenolic content was determined using Folin-Ciocalteu method and was found to be 186.05 ± 1.46 μ g of gallic acid equivalents. Total flavonoid content was studied using $AlCl_3$ reagent and was determined as 19.39 ± 0.83 μ g of quercetin equivalents. α -Amylase inhibitor effect was performed according to the method of Apostilidis et al. The different concentrations of leaf extract had α -amylase inhibitory activity in the range of 21 % - 44 %. The observed inhibition effect against α -amylase could be due to phenolic contents of this plant. In conclusion, the leaves of wild blackberry may be used as a natural antioxidant source in both food and nutritional applications.

Keywords: Blackberry, Phenolic, DPPH $\cdot$ scavenging, α -Amylase inhibition.

Purification of Pineapple (*Ananas comosus*) α -Galactosidase by Three-Phase Partitioning and Its Characterisation

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Abstract

α -Galactosidase was first partially purified from pineapple by three-phase partitioning (TPP) and then characterized. Ammonium sulfate as a cosmotropic salt and t-butanol as an organic solvent were used in order to obtain three phases. Effect of different process parameters such as; ammonium sulfate concentration, enzyme to t-butanol ratio and pH required for efficient purification of the enzyme was studied to get highest purification fold and activity recovery. Optimum purification parameters of the TPP system were determined as 65% (w/v) ammonium sulfate saturation with 1.0:0.5 (v/v) ratio of crude extract: t-butanol at pH 6.5. Under optimized conditions α -galactosidase was purified nearly with 2.0 purification fold and 94% activity recovery. The molecular weight of enzyme was determined approximately as 20 kDa by using sodium dodecyl sulfate–polyacrylamide gel electrophoresis (SDS–PAGE). The purified enzyme was also characterized with respect to its activity and stability at various temperature and pH ranges. Characterization studies showed that, optimum pH and temperature of α -galactosidase were pH 6.5 and 60°C, respectively. The purified enzyme was found to be very stable at a temperature range of 25-50°C and a pH range of 3.0-6.0. Kinetic constants (K_m and V_{max}) were calculated from Lineweaver-Burk plot as 0.1 mM and 0.035 U, respectively. Various metal ions, saccharides and chemicals were also examined for their effects on α -galactosidase activity. TPP is a useful strategy to concentrate and purify α -galactosidase for its different applications.

Keywords: Three-phase partitioning (TPP), purification, α -galactosidase

The determination of Antioxidant Activity and Antidiabetic Potential of Medlar**Sevilay INAL¹, Hulya YAGAR², Sebnem SELEN ISBILIR²**¹Kırklareli University, Vocational School of Health Services, 3906, Kırklareli, TURKEY²Trakya University, Science Faculty, Department of Chemistry, 22030, Edirne, TURKEY

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Abstract

The aim of this study was to examine the possible antioxidant and antidiabetic effects of the ethanol extracts of *Mespilus germanica*. *Mespilus germanica*, known as the medlar, is a large shrub or small tree. The medlar fruit is widely consumed in Turkey. The fruit is used in different ways. It is eaten raw, and the bletted pulp or syrup is a popular remedy for enteritis. It is diuretic and used in the treatment of kidney and bladder stones. Their leaves are used in the diabetes treatment.

Three ethanol extracts of medlar were prepared from fruit, bud, and leaves. Their antioxidant activities were determined using DPPH·-scavenging and β-carotene bleaching methods. Their contents of total phenol and flavonoid were determined. Also, these extracts were evaluated for α-amylase and α-glucosidases inhibition *in vitro*. The highest total phenolic content (60.3±1.69 µg GAE/mg extract), flavonoid (14.77±1.15 µg QE/mg extract) were determined in leaf extract. The leaf extracts showed the strongest antioxidant activity. The EC₅₀ values of DPPH· scavenging activity were in the order of: BHT(105 µg/mL)>leaf(157.5 µg/mL)>bud(260 µg/mL)>fruit(695 µg/mL). This ordering was the same for β-carotene bleaching activity, tocopherol(4.5 µg/mL)>leaf(400 µg/mL)>bud(960 µg/mL). The bud extract had the highest α-amylase and α-glucosidases inhibition activities.

Keywords: *Mespilus germanica*, Medlar, Antioxidant Activity, α-amylase inhibition, α-glucosidases inhibition

Concentration of some Water-Soluble Vitamins in different Infant Formula**Shenaj Skenderoska¹, Teuta Gjuladin Hellon , Biljana Chuleva²**

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Abstract

The aim of this study was to compare the amount of B-complex vitamins (B1, B2, B3, B6) and vitamin C in three different infant formula (0 to 6 months) brands: Aptamil 1, Bebimil, Laktovit Plus, commonly used in Macedonia.

After extraction of the B-complex vitamins using CH₃COOH (1:4), the concentration was measured with High Performance Liquid Chromatography (HPLC) method using Standard solutions of appropriate vitamins. The determination of vitamin C is performed with iodine titration.

The qualitative analysis showed that in all infant formulas vitamin C is presented in the highest amount relative to the average recommended value and from vitamins of B-complex the most represented is vitamin B3. Of the three types of formulas Laktovit Plus has the largest amount of vitamin B₃, Bebimil has the most vitamin B₁, while in Aptamil1 the most represented is the vitamin B₂. The results of the three types of formulas conclude that Bebimil has the highest concentration of vitamins of the B-complex and the vitamin C, while Aptamil 1 shows the least amount of vitamins.

In general, the obtained results of all formulas are closer to the minimal values specified in the Rulebook on Special Safety Requirements for food for special use- milk food for infants, showing that infant milk meets the minimum nutritional needs of infants.

Keywords: infant formula, B-complex, vitamin C, HPLC, iodine titration.

Using Doxorubicin Linked Magnetic Nanoparticles for Treatment of Nude Mice Bearing Ovarian Cancer

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Abstract

Last international statistics stated that the number of cancer patients will be more than 15 million in 2020. Pharmacologically active anticancer drugs reach to tumor tissue with low specificity and dose-dependent toxicity in chemotherapy applications. Doxorubicin is used for ovarian cancer therapy but its usage is limited due to the side effects. Nowadays, after the developments in nanotechnology, it is possible to reduce harmful side effects by using nano particular drug delivery systems like magnetic nanoparticles. When magnetic nanoparticles are loaded with drug, this drug can be directed to tumor tissues via an external magnetic field by mostly eliminating the side effects of classical oral treatment. In this work, we aimed to investigate therapeutic efficacy of doxorubicin linked magnetite nanoparticles in female nude mice bearing human ovarian carcinoma SKOV-3-luc xenografts. Tumor size was analyzed via injection of luciferin with IVIS-SPECT device. As a result, we can say this doxorubicin nanocarrier could have potential for effective ovarian cancer treatment.

Keywords: Doxorubicin, Magnetic Nanoparticles, Ovarian Carcinoma

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**A Research On The In-Vitro Antibacterial Effect Of The Essential Oils
Carveol, Cineole, Eugenol, Linalool, Thymol in Thyme**

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Abstract

The increased resistance to antimicrobial agents that are used against pathogen microorganisms, and unwanted side effects of food additives have necessitated a search on new antimicrobial substances derived from plants. '*Thyme*' –a member of the *Lamiaceae* family which has 45 kinds and 546 species- is used for medical and aromatic purposes.

The antibacterial effects of the chemicals in the essential oils *Carveol*, *Cineole*, *Eugenol*, *Linalool*, *Thymol* on the Broad Spectrum Beta Lactamase (EBSL), *Escherichia coli* (ATCC 35218), *Klebsiella pneumoniae* (ATCC 700603), *Enterococcus faecalis* (ATCC 291212), *Pseudomonas aeruginosa* (ATCC 27853) and *Methycilin Resistant Staphylococcus aureus* (MRSA) (Clinical isolate) are investigated *in-vitro* via disk diffusion and broth microdilution methods.

In the disk diffusion method while inhibition zone diameter was observed for all bacteria with each essential oil (25mg/disc) and while the maximum zone diameter was observed with *Thymol* the minimum zone diameter was observed with *Cineole*. In the broth microdilution method it was determined that among the essential oils applied at a concentration between 25 - 3.125 mg/ml all essential oils and especially *Thymol* had minimum inhibitor concentration (MIC) on all bacteria at various levels. It was determined that the obtained zone diameters and the MIC values were compatible and the essential oils investigated showed maximum antibacterial effect against *Methycilin Resistant Staphylococcus aureus* (MRSA).

As a result it is suspected that all plant essential oils, which were investigated, but mainly *Thymol* can be resistant against bacteria in various fields such as health and food industries.

Keywords: *Carveol*, *Cineole*, *Eugenol*, *Linalool*, *Thymol*

Hematology and Blood Biochemistry of Green Sea (*Chelonia mydas*) Turtles from Samandağ Beach, Turkey, Including Age and Sex-Related Differences

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Abstract

Green sea (*Chelonia mydas*) turtles are large, air breathing animals that lives in tropics and subtropical regions. There is a general lack of hematologic studies of wild chelonians. Determination of blood biochemistry reference values for reptiles, particularly turtles, is necessary for understanding their health status. In the present study we aimed to determine reference values of blood biochemistry parameters for the freeranging green sea turtle population of Samandağ Beach, Turkey and to determine age and sex-related differences. The study included totally 49 healthy green sea turtle, collected from Samandağ Beach between the years of 2006 and 2009. Hematological and biochemical analysis were done in the blood samples of green sea turtles by using commercial auto analyzer kits. All hematological parameters studied in the study were significantly higher ($p<0.001$) in the hatchling group when compared with juveniles and adults. But many of the biochemical parameters studied in the study were significantly lower ($p<0.001$) in the hatchling group. However there was no difference between adult male and female turtles in most of the hematological parameters, we determined differences according to gender in some of blood biochemistry parameters like total cholesterol, triglyceride, uric acid, iron, calcium, phosphore, AST and ALT.

Keywords: Blood Biochemistry, *Chelonia mydas*, Hematology

Status Of Oxidative Stress In Pre- And Post- Menapousel Women With Iron Deficiency Anemia**TünayKontaş Aşkar¹, Yasin Dursun², Ruken Esra Demirdöğen¹**¹Department of Chemistry, Faculty of Science Çankırı Karatekin University, Çankırı, Turkey.² Department of Chemistry Institute of Science Çankırı Karatekin University, Çankırı, Turkey.

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Abstract

The most frequent nutritional deficiency is iron deficiency which plays a crucial role in oxidative metabolism and cellular immune response. The aim of this study was to determine malondialdehyde (MDA), nitricoxide (NO), myeloperoxidase (MPO), paraoxonase (PON), glutathione (GSH), and vitamin E levels in pre- and post-menapousel women with iron deficiency anemia.

The study has performed on 30 pre-menapousel women with iron deficiency anemia between the ages 25-40 (31,8±9,1), and 30 post-menapousel women with iron deficiency anemia between the ages 45-60 (31,8±9,1), and 40 healthy women. Iron deficiency in women has been determined with Hb level <11,5 gr/dL, serum iron <30 µg/dL, and ferritin level <12 ng/mL. The study has been performed with the permission of Local Ethical Commission.

In the study, MDA, MPO, and nitric oxide levels were significantly higher in the iron deficiency groups and PON, GSH and vitamin E were significantly lower when compared to the control group.

In this study, the fact that oxidative stress occurs in pre- and post-menapousal women with iron deficiency anemia has been identified with high MDA, NO, MPO and low GSH and vitamin E levels.

Keywords: Iron deficiency anemia, women, oxidative stress

The study of some qualitative indicators of cultivars of appl „ Tetovka and Mutsu "**Xhezair Idrizi¹, Mirije Elezi¹, Namik Durmishi ¹, Ismail Ferati ¹, Abdylaziz Lokmani²**¹ State University Of Tetova² Food And Veterinary Agency

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Abstract

Fruits are important products for people, this type of food was used by people since its existence, but the main problem has been the cultivated way of consumption, the way of preservation and extension of life span after harvesting. Eating the fruit is very important and irreplaceable in human nutrition whether it is consumed fresh or processed.

Fruits have a high nutritional value and play an important role in metabolic and life processes in human life.

The fruits are also well-known for healing of various diseases where even today is recommended to be used in human popular or folk medicine.

We have analyzed several qualitative parameters of both varieties of apple „*Tetovka* and *Mutsu*”.

The first parameters we have defined are the size and weight. For determining the size is used the device called calibrator.

Determination of dry matter - dry matter means the content of nutrients such as carbohydrates, proteins, fat. For the determination of dry matter is used the device called refractometer. In the first sample, „*Tetovka*” we have a dry matter of 1.351 nD, i.e. 12-12.1°Bx.

While in the second sample, „*Mutsu*” we have a dry matter content of 1.345 nD, i.e. 11°Bx.

Determination of pH – the active acidity depends on the concentration of hydrogen ions. The active acidity is determined by pH which is the logarithm with negative sign, of the concentration of hydrogen ions. In most of fruits it varies from 3.0-3.5.

Keywords: fruit, apple, cultivar, qualitative, nutrient

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