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ABSTRACT BOOK

Essays on Ecosystem and Environmental Research

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Prof.Dr. F.K. Vosniakos, Greece
Asscc. Prof. Dr. Hysen Mankolli, Albania

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ABSTRACTS

No.	Title of Abstracts

001 The impact of natural and anthropogenic forcings on past and present global climate change

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Abstract

Understanding and quantifying natural climate variability is a prerequisite to detect and attribute anthropogenic warming and to project future climate change. It is important to extend the evaluation of models used for climate projections through the pre-industrial period when natural variations were pronounced while anthropogenic influence was small.
In anticipating future climate change, there are three main sources of uncertainty.

1) We do not know the future anthropogenic emissions and resulting atmospheric concentrations of greenhouse gases and aerosols.
2) The response to greenhouse gas and aerosol forcing differs between various models, simulated regional climate changes being particularly model-dependent.
3) In addition to anthropogenic forcing, climate changes are induced by natural forcing (e.g., volcanoes and variations in solar activity) as well as by unforced internal variability in the climate system.

The tools most commonly adopted for projecting future climate are coupled atmosphere-ocean general circulation models (AOGCMs). These numerical models provide a comprehensive three-dimensional representation of the climate system, describing the main dynamical and physical processes, their interactions and feedbacks. They can generate regional estimates of climate in response to given changes in greenhouse gas and aerosol concentrations.
The four main relevant forcings (greenhouse gases, solar variability, volcanism, land-use change) have different time-dependence over long periods, so can be separated more effectively than for the shorter instrumental period.
The potential role of solar variations in modulating recent climate has been debated for many decades and recent papers suggest that solar forcing may be less than previously believed. Century-scale solar irradiance variations have been proposed as cause for past climatic changes. However, recently, astronomical evidence has been used to suggest that low-frequency variability of solar irradiance might be very low, possibly restricted to the range of the observed high-frequency variability.
We used a climate model to analyze past climatic responses to solar and volcanic forcing, using a solar irradiance history partially based on a recent ^{10}Be findings from Antarctica. Our results suggest that, while solar irradiance changes and volcanism were the dominant forcings in preindustrial times, their combined role has been changing over the past century. Although these natural forcing factors could be responsible for some modification of the decadal structure over the 20th century, they only played a minor role in the most recent warming. Therefore, the 20th century warming is not a reflection of a rebound from the last Little Ice Age cool period, but it is largely caused by anthropogenic forcing. A small role of solar forcing for late 20th century climate change is additionally supported by the absence of a trend in the satellite-based irradiance record covering the past 30 years. In conclusion, our model results indicate that the range of Northern-Hemisphere temperature reconstructions and natural forcing histories (cosmogenic isotope record as a proxy for solar forcing, and volcanic forcing) constrain the natural contribution to 20th century warming to be +0.2°C. Anthropogenic forcing must account for the difference between the small natural forcings and the observed warming in the late 20th century.
Key word: anthropogenic forcings, global climate change

002 Global Warming and Water Stress on the World

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Abstract
There is a strong scientific evidence of the increase in the global average surface air temperature during the last century. Moreover, even though there are many uncertainties about the magnitude of the future climate change, most studies indicate that global warming is very likely in the future. Climate change is a long-term change in the statistical distribution of weather patterns over periods of time that range from decades to millions of years. It may be a change in the average weather conditions or a change in the distribution of weather events with respect to an average. Climate change may be limited to a specific region, or may occur across the whole Earth. In recent usage, especially in the context of environmental policy, climate change usually refers to changes in modern climate. It may be qualified as anthropogenic climate change, more generally known as global warming or anthropogenic global warming. Evidence for climatic change is taken from a variety of sources that can be used to reconstruct past climates. Reasonably complete global records of surface temperature are available beginning from the last century. For earlier periods, most of the evidence is indirect-climatic changes are inferred from changes in proxies, indicators that reflect climate, such as vegetation, ice cores, sea level change and glacial geology. Increasing atmospheric concentrations of greenhouse gases, mainly carbon dioxide, have led to a warming at the surface, by nearly 0.6°C during the twentieth century, and it is widely believed that this trend will continue in the twenty-first century, leading to a higher sea-surface temperature, among other factors. Numerous empirical observations and models of the global climate confirm the hypothesis that global warming enhances the global hydrologic cycle. For instance, a global warming by 4°C is expected to increase global precipitation by about 10 percent. Models suggest that the increase is more likely to come as heavier rainfall, rather than as more frequent rainfalls or falls of longer duration. We saw many episodes in last few years with giving important problems at the occurring places.
Keywords: Global Warming, Water Stress, Temperature, CO2, Greenhouse, episodes.

003 Preparation of Noise Map by Geographic Information System (GIS) around Konya Coach Station

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Abstract
Noise pollution became important because of the inconvenience with rapidly developing technology and increasing population, especially the increasing noise in the city centres with modern life worldwide. Preparation of noise pollution maps is necessary a priority taken for noise pollution and measures in city centres. In this study, the use of Geographic Information System was carried out for noise pollution map in Konya Intercity Coach Terminal and around. For this purpose, the equivalent noise levels (Leq) were measured between the 07:30 to 00:30 hours at the 11 sampling points. A map At Konya Intercity Coach Terminal and around was digitized with screen digitizing using the UTM (Universal Transverse Mercator) coordinate system. Than noise measurement results were entered into GIS system. The noise measurement point coordinates of the 11 sampling points were entered into the system based on the Magellan SporTrak handheld GPS receiver for Konya Intercity Coach Terminal and around area on a digital map. GIS software MapInfo Professional 8.5 is used for Mapping and data analysis construction noise map of Konya Intercity Coach Station and around area
Key words: Noise Pollution, Noise Pollution Map, Konya, Coach Station, Geographic Information Systems (GIS), GPS

004 ENVIRONMENTAL EVALUATION OF THE CLOSED BASIN AS SUSTAINABLE BASIN MANAGEMENT

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ABSTRACT
Basin management requires attention to basin-wide water use efficiency and water quality management. In some circumstances, field efficiency is important because return flows degrade land and water resources. In other circumstances, any water loss is another one's recharge, and improved farm-level irrigation efficiencies often result in only theoretical, not real, water savings. Or savings in one sector are offset by wastage in another user group. An improved, customized understanding of water balances and water quality in specific basins are required, so that the benefits from often costly interventions to reduce losses are assessed in terms of the contribution to overall basin water use efficiency and water quality. Such understanding includes determining how much water can be consumptively used on a sustainable basis while still meeting environmental and other in-stream flow requirements without overexploitation of groundwater.
There are 25 main river basins in Turkey. Konya Closed Basin (KCB) is 4th biggest basin according to its precipitation area which is about 53 850 km^2. The area consists of two closed sub-basins those are referred to as Salt Lake Basin and Konya Basin. Disruption of the natural hydrological regimes and over-consumption of freshwater resources pose the principal threats to the wetlands, salt lakes and freshwater bodies. Irrigation schemes have diverted water from the streams that feed scattered freshwater resources to convert some of the salty steppes to agricultural fields. It leads to a decrease in the overall freshwater content of the lakes, wetlands and streams. These are two of several drainless areas of the Central Anatolian Plateau, which is itself also a closed basin. Each of the basins is characterized by the presence of a large lake, respectively Salt Lake and Beysehir Lake. The KCB is fed by rivers and groundwater coming mainly from the south and by melt water and rainfall from the mountain range bordering the basin in the south. The Konya Plain Project (KPP) is a comprehensive group of projects which includes construction of dams, hydroelectric power plants, and irrigation systems as well as providing developments in agricultural infrastructure, transportation industry, water supply, water budged, environmental impacts and in other issues. Konya Plain Project (KPP) is thought together with land consolidation studies in the region. The KPP comprises 47,720 km^2 of area spreaded over 4 river basins in Konya closed basin. The KPP consists of 12 projects including 9 big scale water projects, 2 water supply projects, energy projects, and a number of small scale surface and ground water irrigation projects. This study covers the works in the Konya Closed Basin as an example of sustainable basin management such as effective use of surface water, ground water for irrigation and water demand required by cities in the region.
Key Words: Basin management, Konya Closed Basin (KCB), Irrigation, Water usage

005 Investigation of adsorption of C.I. Basic Violet 2 from aqueous solution onto perlite:adsorption isotherms and kinetics

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Abstract
The aim of this study was to investigate the removal of C.I. Basic Violet 2 from aqueous solutions by adsorption technique using perlite as an adsorbent. The effect of operational parameters such as pH, temperature, agitation speed, contact time, adsorbent dose and initial dye concentration was studied in a batch mode reactor. The results indicated that the removal kinetics obeys pseudo-second order kinetics. Langmuir, Fruendlich and Redlich-Peterson adsorption models were used for the mathematical description of adsorption equilibrium and the equilibrium data were in agreement with Langmuir model. The thermodynamic parameters such as Gibbs free energy , enthalpy and entropy were also calculated and findings indicated that the process was spontaneous and exothermic and negative value of entropy reveals that the adsorbate is residing on the adsorbent and being organized.
Keywords: Perlite; Adsorption models; Kinetics; Thermodynamic parameters; C.I.Basic Violet 2

006 A Deliberative Multi-criteria Analysis Approach with Application to Tourism in Lakes Prespa Ecosystem, Albania

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Abstract
Multi-criteria analysis is a well-tried and effective procedure for structuring and aiding complex decision-making processes, especially those involving environmental considerations. Formal deliberative processes have also been successful in aiding understanding and meeting consensus in complex and difficult decision problems which involve more than one decision-maker. In this study, both approaches are combined to assist a group of natural resource managers decide on a suitable option for tourism activities in Lakes Prespa area, Albania. This approach seeks to combine the advantages of multi-criteria analysis providing structure and integration in complex decision problems with the advantages of deliberation and stakeholder interaction provided by a citizens' jury. I this paper, first, a set of options and decision criteria were identified by the decision-makers. Next, the criteria were ranked to identify disparities in priorities for the decision-makers. A stakeholder jury process was then carried out with the decision-makers given the charge of coming to consensus on a set of weights for the criteria. Experts were called in to provide information on those criteria with wide disparities in priorities and a facilitated deliberative process was carried out including the requirement for decision-makers to support and defend their positions. A probabilistic multi-criteria analysis software tool was used interactively to aid the decision-makers in their deliberations. An important outcome of the process was the discovery of some crucial aspects of the decision problem that require deeper understanding and assessment if that preferred strategy is to have the desired results. Some suggestions for improving the process were provided.
Key words: Lakes Prespa, multi-criteria analysis, citizen's jury, tourism, ecosystem.

007 EVALUATION OF THE QUANTITY OF ERODED LAND IN MOUNTAINS WATERSHEDS OF VITHKUQI AREA (DISTRICT OF KORÇA) - ALBANIA

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Abstract
Visible activity of land erosion that is observed in our country, especially in recent years has become more troubling. In many areas of our country during the period October - March floods occur in parts plains, while mountainous and hilly territories suffer major erosion in the area of depth.
The phenomenon of erosion is greater in the vicinity of residential areas where damages are larger and more sensitive.
Referring to the preliminary monitoring in Korça district, it turns out that one of the most vulnerable is the area of Vithkuqi, this area with specific geomorphological features.
This study had as main purpose the determination of the amount of eroded soil in the watersheds of the area, through analysis of different geomorphological factors, and determining the risk of erosion under rainfall indicator.
Keywords: areas, eroded, erosion, geomorphological, monitoring, rainfall, risk.

008 The Criteria Air Pollutants Levels During Calm Atmospheric Conditions: A Case Study

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Abstract
The criteria air pollutants (CO, TSP, SO_2, NOx and O_3) levels has increased due to residential heating, traffic and industrial source in urban areas. Air pollutants levels vary with meteorological parameters (wind velocity and direction, temperature, pressure), topographical feature and source. The high pollution levels is monitored in urban situated mountainous areas during calm conditions (stable thermal inversion and wind velocity <1m/sn).
This study was researched interaction of the pollutants during winter days with calm conditions. For this purpose, CO, TSP, SO_2, NOx and O_3 concentration were monitored by mobile station when temperature value lower (-7^{o}C) and wind velocity lower (1m/sn) for two winter season (1995-1996 and 1996-1997). The relationship among the pollutants was statistically analyzed using the RATS (Regression Analysis Time Series) programme. The pollutants concentration was estimated dependent on guessed pollutant's previous day concentration and other pollutant concentration. Determination coefficient of proposed statistical models varied from 0.49 to 0.86. The model was good for SO_2, but for CO was weak.
According to the equation for SO_2, the level of SO_2 increased with increasing NOx and TSP levels, but SO_2 decreased with increasing O_3 levels. It was found that the previous day concentration for SO_2 was not effective parameter.
Key Words: air pollution, calm atmospheric conditions, previous day concentration, regression analysis

009 Organic Wastes: traditional and new utilizations in soil

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Abstract
Nowadays recycling of organic residues and wastes as soil amendment is a very common and efficient agricultural practice. However, these materials need to be properly processed previous to soil application in order to obtain a mature and stabilized organic material in which the humification process has developed adequately. In particular, much attention is paid to evaluate the composition, the chemical and molecular structure and the reactivity of HA-like substances in the organic amendment and its effects on the chemical status, environmental role and fertility functions of native soil HAs. The HA-like components in composts are generally characterized by a larger aliphatic character and molecular heterogeneity, smaller amount of oxygenated and acidic functional groups, and smaller degrees of aromatic polycondensation and humification than native soil HAs. Aliphatic, polysaccharide and lignin structures and S- and N-containing groups of the HA-like materials have been shown to be partially incorporated into native soil HA thus modifying at various extent its composition, structure and chemistry. However, with increasing time from compost application these modifications become less and less apparent and tend to approach the molecular properties typical of native soil HA. This important result supports the fundamental objective of recycling partially humified organic waste materials as beneficial soil amendments. Nowadays, manufactured nanoparticles (NP) are increasingly proposed to be used for soil decontamination thus posing increasing serious concerns for human and environmental exposure. The intrinsic chemical and physical properties of HS qualifies them as natural NPs. Adsorption of the polycyclic aromatic hydrocarbons (PAHs) pyrene and fenantrene has been studied on four soils with various content of organic carbon (OC) and on the same soils added with either 5% of the NP fullerene (F), or 1% of a compost (C), or 1% of a humic acid from compost (HAC). Results show that: (a) in any case, the adsorption data best fit into a Langmuir-type isotherm; (b) as expected, the adsorption capacity for the two PAHs is a function of the intrinsic OC content of the substrate; (c) for any soil, the adsorption capacity for the two PAHs increases in the order: original soil<soil+F<soil+C=soil+HAC. These results indicate that the content of native soil OC is the most important factor influencing the soil adsorption capacity for PAHs and that addition of compost or HAC is more efficient than that of fullerene in enhancing the adsorption capacity of soil for PAHs. Thus, the compost amendment practice should be preferred to the use of synthetic NPs for soil decontamination purposes.
Key words: organic wastes, composts, soil use, humic substances, humic nanoparticles

010 VARIATIONS OF WEEKLY ATMOSPHERIC DEPOSITION IN ERZURUM, TURKEY

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ABSTRACT
Emissions of air pollutants is rapidly increasing mainly from antropogenic activities due to large population, a rapidly growing economy, high-energy consumption, transportation and industrialization. The two major groups of air pollutants are SOx and NOx. Their oxidations result in particulate sulfate and particulate nitrate which ultimately determine the lifetime of those pollutants in the atmosphere.Acid deposition, the major removal pathway for secondary pollutants, can take place in two forms wet and dry deposition, which together is referred to as bulk deposition. This study has been carried out to investigate the chemical properties of atmospheric deposition in Erzurum, Turkey. The weekly bulk deposition samples were collected at three stations in the city center during January 2003-May 2003. Major cations (Ca^{+2}, Mg^{+2}, K^{+}) and major anions (SO_4^{-2}, NO_3^{-}) and pH were determined in bulk deposition samples. SO_2 was also measured at three stations during the study period. The lowest pH value was 4.7. The highest pollutant concentrations of the bulk deposition samples were determined as follows: 54.6 mg SO_4^{-2}/l, 3.3 mg NO_3^{-}/l, 28 mg Ca^{+2}/l, 15 mg Mg^{+2}/l, 6 mg K^{+}/l. The mean value of SO_2 was 176 $\mu g/m^3$.
Key Words: *air pollution, acid rain, atmospheric deposition, bulk deposition*

011 **Factors Affecting the Sustainability of Medicinal and Aromatic Plants in Koprulu Kanyon National Park, Turkey**

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Abstract
Koprulu Kanyon is one of the largest national parks with a high diversity of medicinal and aromatic plants (MAPs) in Turkey. Local communities gather MAPs to provide for their subsistence needs (e.g. food and primary medicine), as well as to generate cash income to lift their lives out of poverty. However, the lack of a comprehensive management mechanism for controlling the wild-collection of these species threatens their long-term sustainability. However, the sustainable wild collection of these species is necessary to meet the needs of present and future generation – the essence of sustainable development. In view of this desired goal, the purpose of this study is to evaluate the factors and also interrelationship among those factors that directly and/or indirectly affect the sustainability of MAPs in Koprulu Kanyon National Park. The conceptual framework for sustainable use of natural resources developed by the World Conservation Union Sustainable Use Specialist Group was adapted to the study to assess the factors affecting the sustainability of MAPs in the national park. The results of this analysis revealed that population, institutional (formal and informal), and economic factors and interrelations among them directly and/or indirectly influence the sustainability of MAPs in the national park. Assessment of the factors showed that a powerful management plan and permanent monitoring mechanism are needed to achieve the long-term conservation and sustainability of MAPs. Finally, possible conservation options and instruments are examined for promoting and ensuring the long-term sustainability of MAPs in the national park.
Key Words: Medicinal and aromatic plants, sustainable use, conservation, Koprulu Kanyon National Park

012 **Evaluation of ammonium and nitrate forms of nitrogen on soil and vegetables of glasshouses.**

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Abstract
In this study, we evaluated the content in soil and plants of both forms of nitrogen assimilated from the plant, ammonium ions and nitrates. Beside them and needed help to estimates, there have been physical and chemical analysis of soils. A new glasshouse in production, in Durres area was selected for the study. The data are the years 2007-2008 and are compared with the analysis of several other greenhouse did before. In the analysis of glasshouse we used the standard method that was provided by the QTTB Fushe Kruje (Department of Land). Ammonium and nitrate ions are determined by the method Kjelhdal subsequently titrated by NaOH. In samples taken there is a correlation between the values of the contents of ammonium and nitrate ions (treated as total nitrogen), and nitrogen content in vegetables. Used high doses of manure within a short period of time reflected in a long-plant vegetation. These high doses of manure have come as a result of the omission of land preliminary analysis. From the comparison that is made with data obtained from other greenhouses, noted that the same problems are inherited, but also

have improved many of them during this time.
Kew-words: ammonium, greenhouse, nitrogen, soil, vegetable

013 Potential Challenges for Sustainable Landscape Design in Northern Cyprus

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Abstract
The purpose of this study is to examine sustainable landscape design approaches for semi-arid regions in the case of Northern Cyprus. The rural landscapes of the region have been altered and degraded particularly due to the severe impacts of drought and water shortage. Therefore; when dealing with sustainability issues in Northern Cyprus, more sustainable solutions or a holistic approach is needed for design and management of the related problems of the rural landscapes in the region. Within this context, in the first section of the study, the concept and scope of sustainable landscape design are examined. This assessment shows that sustainable landscape design in Northern Cyprus can only be achieved if the proposed five pillars (environmental, economic, social, political and aesthetic sustainability) are considered in the process of design. Such a multidimensional approach can help increasing the quality of environment as well as living standards of local people. In the second part, establishment of a strong relation between landscape ecology "science of environment" and landscape design "art of environment" for achieving a reliable balance between ecological processes and spatial patterns is discussed. This discussion revealed that an eco-aesthetic approach and creation of multifunctional landscapes can help achieving the desired balance. In the final part, potential challenges for sustainable landscape design (e.g. minimization of energy use, water and waste management) have been studied for Northern Cyprus.
Keywords: Sustainable landscape design, Northern Cyprus, semi-arid, sustainability, green economy, quality of life

014 FLORISTIC AND CHOROLOGICAL RECORDS FOR MONOCOTS OF THE LAKE SHKODRA

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ABSTRACT
Flora of the freshwater wetlands ecosystem of Lake Shkodra is very rich. About 236 aquatic and wetland plant species and subspecies, of them 112 Monocots were reported. New floristic and chorological records regarding to the monocots of Lake Shkodra and Delta Buna basins during our field trip were observed. Altogether, 5 plant species and 2 subspecies of monocots are reported and discussed, of which 3 species and 2 subspecies: *Carex michelii* Host 1797, *Juncus sphaerocarpus* Nees 1968, *Najas flexilis* (Willd.) Rostk. & W.L.E. Schmidt 1824, *Carex viridula* subsp. *oedocarpa* (Andersson) B.Schmid 1983 and *Romulea linaresii* Parl. subsp. *graeca* Béguinot 1907 are new for the flora of Albania, while 2 species: *Schoenoplectus litoralis* (Schrad.) Palla and *Elodea canadensis* Michx in Delta Buna for first time were reported. *Romulea linaresii* subsp. *graeca* is an endemic of the Aegean Islands to West Turkey, while *Najas flexilis* is rare in the European portion of its range and is strictly protected by Appendix I of the Berne Convention. The variability of the certain taxonomic characters, life forms and preferred habitat and actual knowledge for the most of them are presented. Also, the distribution of all species was mapped on 10 x 10 sq. km and shown in a UTM grid system
Key words: Monocots, plant species, subspecies, endemic, wetland, Lake Shkodra, Albania.

015 Towards development of ecoagricultural landscape indicators across Northern Cyprus

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Abstract
The purpose of this study is to develop a conceptual framework of ecoagricultural indicators for improving and maintaining the interrelationship between biodiversity conservation, agricultural production and security of livelihoods at landscape level in Northern Cyprus. Accordingly, a conceptual framework for ecoagricultural landscape performance is developed in the case of Northern Cyprus. The approach of ecoagricultural landscape performance is found to be focused on the four functions (regulation, habitat, production and information) of agricultural landscapes to achieve a balance between social and ecological systems in the region. In addition to this, a comprehensive set of ecoagricultural landscape indicators were developed within the framework of four goals: Biodiversity conservation (e.g. openness and habitat connectivity), agricultural production (e.g. financial viability of production systems), security of livelihoods (e.g. access to clean water and sustainable energy sources), and institutions (e.g. adoption of the European Union Landscape Convention and Water Directive). These indicators can be used as benchmark by policy-makers and resource managers to reconcile biodiversity conservation and sustainable development of rural livelihoods in Northern Cyprus.
Keywords: Ecoagriculture, indicator, landscape, biodiversity conservation, agricultural production, rural livelihoods, Northern Cyprus

016 CONSIDERATION AND NEW DATA ON CHRYSOMELIDAE FAMILY (INSECTA COLEOPTERA) IN MALËSIA E MADHE REGION

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Abstract: The study of Chrysomelidae family is of great importance not only for the enrichment of systematical data of Albanian Coleopterofauna, but also for the role that individuals of this family play in food chain and in biological war. Up to now in the world are known 24.000 species and only 232 of them are found in Albania.In this paper we present the diversity of species of Chrysomelidae Family in Malësia e Madhe Region. In this study we classified 18 species that belong to 12 genera from wich three species are reported for the first time in Albania (Timarcha coriaria, Chrysomela hyperici, Chrysomela haemoptera).
Key words: Coleoptera, Chrysomelidae family, Albania, Malësia e Madhe Region.

017 Heavy Metals from Solid Waste and Its Bioremediation

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Abstract
In most of developing countries, solid wastes are being dumped on land without adopting any acceptable sanitary land filling practices. Precipitation that infiltrates the solid wastes disposed on land mixes with the liquids already trapped in the crevices of the waste and leach compounds from the solid wastes. The leachate thus formed contains dissolved inorganic and organic solutes. In course of time, the leachate formed diffuses into the soil and changes the physico-chemical characteristics of water.Leachate from a solid waste disposal site is generally found to contain major elements like calcium, magnesium, potassium, nitrogen and ammonia, trace metals like iron, copper, manganese, chromium, nickel, lead and organic compounds like phenols, polyaromatic hydrocarbons, acetone, benzene, toluene, chloroform etc. Uncontrolled heavy metal containing leachate to the environment can be detrimental to humans, animals and plants. This study is a review about impact of leachate charasteristics on water quality and public health. Also, natural treatment methods of heavy metals in aquatic environment is evaluated. The treatment methods include the use of microorganisms, biomass and live plants. Protozoans have been found to be present in and metabolizing leachate effluents contaminated by toxic metal ions such as Cu^{+2}, Hg^{+2} Ni^{+2} Pb^{+2} Zn^{+2} and Cd^{+2} and toxic compounds .The long-term survival of protozoa in media containing relatively high concentrations of heavy metal ions shows that these organisms have strategies

to tolerate, resist or detoxify organic substances and heavy metals.Heavy metals which are not vital can cause health problems affecting the biological structure at very low concentrations of heavy metals are not vital can cause health problems affecting the biological structure. Heavy metals act as toxic when exceeding the limit tolerated..
Key words: solid wastes, leachate, heavy metals, public health, natural treatment, protozoa

018 OVERVIEW OF PROTISTS OF THE SHKODRA LAKE

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Abstract
Protists biodiversity and biological water quality of Shkodra Lake, based on bioindicator species are presented in this survey.
The list of Protists of Shkodra Lake include about 378 genera with 1374 species and intraspecific taxa; 1071of which belong to Protophyta and 257 to Protozoa. Most of the taxa belong to the Chromalveolata with 657 species and Archeoplastida with 483 ones.
The bioindicator species of Cyanobacteria, Diatoms and Protozoa are used to assess the relative purity of Shkodra Lake **waters.** Regarding to the trophy and saproby valences of the bioindicator species, Shkodra Lake has a good situation for its life.
A big difference is observed in composition of species and abundance among different sampling points of the lake. The largest number of species is found in June and July, on the lake shores, while the smallest one is found in February, in the plankton of open waters. The heterogenity of Shkodra Lake needs a long-term monitoring, in order to get a wider view of ecologic and trophic conditions of the lake waters.
Data about the complexity of Protists habitats and microhabitats and their ecological role, especially in food networks and sustainable development of Shkodra Lake, are also provided.
Key words*:* Protist, Protophyta, Protozoa, bioindicator, water quality, Shkodra Lake.

019 TOWARD A LANDSCAPE ECOLOGY OF CITIES, BEYOND BULDINGS, TREES AND URBAN PARKS IN PRISHTINA KOSOVO

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ABSTRACT
Urban green space is defined as all publicly owned and publicly accessible open space with a high degree of cover by vegetation such as:parks, woodlands, nature areas and other green space. These spaces have different functions in cities, at several levels such as the environmental, ecological, social, economic, cultural and aesthetic, promoting the image and character of an urban area.The area of Prishtina (572 km^2, about 600.000 inhabitant) represents one of the largest Kosovo metropolitan areas. The average amount of green spaces per capita is approximately 2.5 m^2.In this study we use a socio-ecological model as framework when studying influences on the use of respondents' nearest urban green space in the Prishtina city of Kosovo. Data were obtained from a survey for 1000 randomly selected adult residents within the central part of the Prishtina city. We tested the relative importance of different factors (area size, distance to the area,use of different ages) on the frequency of use of the nearest urban green space.The results show that 39.0% visit green space every day, 85.6 % visit green space at least once a week, only 3.4% never visit green space. Other important motivations to visit green space are:to reduce stress, relax (53.8%); to exercise, keep in shape (59.5%); for visit together with friends and family (55.4%).According the respondents distance to green space is the most important factor related to its use(< 300-350m), while the favorite biggest green sapce was about (2.5-3 ha).

Key words: green space size, urban trees, environment, Prishtina, respondents.

020 CONSERVATION ASPECTS OF BIOLOGICAL DIVERSITY IN FOREST ECOSYSTEMS IN THE PRUT RIVER BASIN (REPUBLIC OF MOLDOVA)

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ABSTRACT
The paper includes the results of a research carried out during 2004 - 2010 which aim was to assess the ecological status of representative forest ecosystems, located in the Prut River Basin. Emphasis has been placed on biological diversity, the distribution range of flora and fauna, the endangered status in accordance with the IUCN classification and protection status in accordance with the annexes of International Environmental Conventions. Flora and fauna study was conducted seasonally and thus in different development phenological phases whereas species systematic origin was established by field reference books and specialized microscopes such as Micmed and MBS-10-5.
Valuable forest ecosystems biodiversity records plants and animals species protected by both national and international laws. Based on the investigation results, new habitats were established for a range of rare species, but also sufficient materials was gathered to scientifically argue for the foundation of 4 new protected areas (about 700 ha) and expansion of two existing once.
Key words: *representative forest ecosystems, biological diversity, valuable species, conservation, protected area.*

021 INDOOR AIR QUALITY IN FREESTALL DAIRY HOUSING IN AUTUMN AND THE EFFECTS OF GAS EMISSION ON ENVIRONMENTAL POLLUTION

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ABSTRACT
Indoor air quality is one of the important factors for human being and animals in livestock which must be taken consideration with fastidiously. Manure has many organic compounds that may be decomposed at different climatic condition. Mineralisation period may be affected environmental conditions. This study has been carried out to determine climatic parameters (temperature, relative humidity) harmful gases (NH_3, CH_4, H_2S) occurring in barn and O_2 have been measured in freestall dairy houses in autumn (16-30 November) 2007 in Konya-Turkey where little data is currently available. The air quality parameters have been measured by using datalogger and multi-gas monitor during 15 days for dairy cattle company. In this study, hydrogen sulphide values are nearly detectable level or less then this value. Because, most dangerous gas is H_2S and CH_4 livestock buildings, than NH_3 fallows. Oxygen level was not critical level for livestock buildings and sometimes changed about 1%. In this study, climatic parameters (temperature, relative humidity) harmful gases (NH_3, CH_4, H_2S) occurring in barn and O_2 have been measured in freestall dairy houses in experimental days. The effects of harmful gases occurring in barns on animal health and air quality of environment have been endeavoured to determine. However we tried to investigate effect of air quality parameters for animal housings and human that work in barn, and environment pollution.
Key words: Air quality, ammonia, freestall housing, environmental pollution, livestock building, hydrogen sulphide.

022 THE MICROBIOLOGICAL STATUS OF SOME EATING VEGETABLES DURING 2009-2010

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Abstract

Fresh fruit and vegetables are important in nutrition and healthy diets. The health of consummators can be affected by consumption of microbiologically unsafe food staff. Microbial contamination can occur directly or indirectly from insects, soil, water, human handling etch. Over the last several years the detection of outbreaks related to food borne diseases, associated with consumption of domestic and imported fresh fruits and especially vegetables, has increased worldwide.
A survey of ready to eat vegetables in Tirana city is conducted during 2009-2010. A total of 84 vegetables and salad samples, were analyzed. The collection of samples was casual, from different retails in Tirana city. The results indicate that ready to eat vegetables sold in different areas of Tirana city, had poor microbiological quality. The highest microorganism counts were associated with domestic grated carrot, salad and spinach. *Enterobacteriaceae* populations between 10(5) and 10(6) CFU/g were found in 33% of samples. *Bacillus cereus* was detected only in one sample of spinach. *Citrobacter freundii* was found in 8 vegetable samples. *Serratia ficaria* was found in 5 vegetable samples. *Enterobacter agglomerans* was found in 7 cases. *Listeria monocytogenes*, *Shigella spp* and *Escherichia coli* O157:H7, were not detected in our samples.
Key words: Microbiological status, *Salmonella spp*, vegetables, salad, retail.

023 THE EFFECT OF AGROMETEOROLOGICAL ELEMENTS ON CROP YIELDS AND STATISTICAL MODEL OF YIELD FORECASTING

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ABSTRACT
The study of the effects of meteorological factors on crop production and the development of models for forecasting the yield have been the concern of agro meteorologists worldwide. This research work focuses on wheat production in two zones with diverse climate conditions in Albania.
The most important factors that directly affect crop production are changes of climate conditions. Furthermore, wheat as part of this crop production has been attracted particular attention worldwide. In this framework, we decided to study, evaluate and estimate wheat production gain two weeks before harvest, based on the most favorable model for the conditions in Albania. There are a number of models and approaches considered from different researchers in the past and nowadays. All of them have their advantages and disadvantages and moreover different behaviors towards climate conditions of our country. Hence, after a thorough evaluation, we have chosen the best appropriate model and analyzed its results. This model is based on the multiple equations of regression, which consider all the climate elements. In addition, as the model requires, we have chosen the most significant periods for this plant, and evaluated it for the two most diverse climatic changes regions, but with the highest productivity in the country. The regions considered are, respectively, the Korça region, located on the South – East part of Albania, and it is known for its favorable agro-climate characteristics, and the Lushnja region, located on West part of Albania, known as lowland country.
Keywords: Forecasting, yield product, meteorological factor, equations of regression, wheat.

024 ENVIRONMENTAL HEALTH IN EMERGENCIES

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Abstract
Emergencies, conflicts, and disasters happen frequently, including natural disasters, chemical or radiological incidents, complex emergencies, and deliberate events. A substantial fraction of the disease burden derived from these events is attributable to environmental risk factors. Rapid industrialization and new technologies have produced new hazards. Technological disasters often result in an unexpected and uncontrolled release of hazardous materials that have the potential to cause health problems. The severity and frequency of this type of disaster has increased. Every year natural disasters kill around 90 000 people and affect close to 160 million people worldwide. Natural disasters include earthquakes, tsunamis, volcanic eruptions, landslides, hurricanes, floods, wildfires, heat waves and droughts. They have an immediate impact on human lives and often result in the destruction of the physical, biological and social environment of the affected people, thereby having a longer-term impact on their health, well-being and

survival. Children, pregnant women, elderly people, malnourished people, and people who are ill or immunocompromised, are particularly vulnerable when a disaster strikes, and take a relatively high share of the disease burden associated with emergencies. Poverty – and its common consequences such as malnutrition, homelessness, poor housing and destitution – is a major contributor to vulnerability. Health-care facilities are hospitals, primary health-care centers, isolation camps, burn patient units, feeding centers and others. In emergency situations, health-care facilities are often faced with an exceptionally high number of patients, some of whom may require specific medical care (e.g. treatment of chemical poisonings).

Key words: Emergencies, disaster, vulnerable groups, health-care

025 THE MICROBIOLOGICAL SURVEY OF RAW MILK IN SOME PLACES OF MILK COLLECTION IN ALBANIA

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Abstract
The aim of this study is the microbiological survey of raw milk in some places of milk collection in Albania in 2010. The quality of raw milk is very important for the quality of market milk or other product like cheese, yogurt. In this study we have analyzed the raw milk for total aerobe mesophilic bacteria and coliforms. We have used the Plate Count Agar for detection of total aerobic mesophilic bacteria and VRBA (Violet red bile agar) for coliforms. With these microbiological analyses we have compare the quality of our samples with the microbiological standards for total bacterial count and for total coliform count. The microbiological standard for the total bacterial count is $<1x10^6$ cfu/ml, and the microbiological standard for total coliform count is $<5x10^2$ cfu/ml. From five places of collection that we have analyses, only two places were in good quality within microbiological standard. From the results of these analyses we have the conclusion that the raw milk in these places is not in a good quality and there is much to do with the hygiene in these places or with the health of the cows.

Key words: microbiological survey, raw milk, quality, milk collection, Albania.

026 AIR QUALITY IN THE RECREATION AREAS OF THE CHIŞINĂU CITY BY BIOINDICATION

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ABSTRACT
Green areas are an important component of urban ecosystem which also associates a range of benefic functions for people, especially socio-cultural, aesthetic and recreational. The ratio of green areas per one Chisinau city inhabitant is about 30 m^2 (World Health Organization recommends about 50 m^2). Taking into consideration the insufficiency of green areas but also the citizens' intensive attendance of these, particularly at the end of the week and during summer, their study and environmental state monitoring is rather actuality. One of the current methods applied to investigate the state of environmental components is bioindication, which can provide accurate and comprehensive information concerning the environmental quality of investigated components. The study conducted in 2003-2007, in 18 recreation areas of Chisinau, showed that the air in most of the areas (represented by green areas) is polluted with SO_2 (0,2 to 0,3 mg/m^3 air), which was additionally confirmed by the values of the Index of Atmospheric Purity (IAP). Lower air pollution by SO_2 has been recorded in green areas located in the Northern part of the city, whereas heavily polluted air was recorded in various green areas located in depression.

Keywords: urban ecosystems, recreational areas, lichen indication, green areas, SO_2 pollution.

027 Influence of the UV Radiation on Rhodamine WT Fluorescence in Water Samples

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Abstract
The fluorescence ability of Rhodamine WT enables its using as artificial tracer in the water system studies. The problem is dealt with in relation to applying Rhodamine WT to trace and determine water movements within the karstic system and underground waters. Rhodamine WT has been used as an artificial tracer for the first times in our country on Mali me Gropa system study (2002). UV radiation may induce photochemical decomposition of the dye which can cause large measurement errors on measurements of Rhodamine WT fluorescence intensity. This paper presents the obtained results in our lab studying the influence of UV radiation on Rhodamine WT fluorescence in water samples in different conditions so-called: 'in the light' and 'in the shadow'. We have studied this influence putting water samples containing Rhodamine WT in colorless glass bottle and brown glass bottle in each situation mentioned above. The concentration and synchronous scan methods were used for the measurement of Rhodamine WT fluorescence by the means of a Perkin Elmer LS 55 Luminescence Spectrometer. The photodecomposition results help us to determine if the dye can be used or not in a water system study with tracing experiment. According to these results we can decide the conditions of the transport and storing of the water samples, too.
Key words: Spectral Determination, Rhodamine WT, Fluorescence Intensity (I_F), Synchronous scan, artificial tracer.

028 VARIATION OF MICROBIAL POLLUTION (SF AND CF) IN WATER RIVERS OF TIRANA AND SHKODRA

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Abstract
During 2006-2010 years, ten sampling station in Kiri, Drini, Tirana and Lana rivers are taken in order to estimate the pollution level from SF and CF. All the station are choose in way to have unpolluted samples, that means before pollution and polluted ones in down streams or samples polluted by urban charges. The selection of monitoring stations is based on monitoring scheme of liquid discharges. In that scheme collector is considered the source of pollution to receiving surface waters. The samples are taken at the collector and also in distance 500 to 1000 m from point of discharge after mixing and dilution with receiving waters. Faecal Coliforms/E.coli and Faecal Streptococci/Enterococci are detected via Multiple-Tube Fermentation Technique or Most Probable Numbers (MPN) technique.The analysis of samples shows a high pollution level in Tirana and Lana rivers during all the year seasons, particularly during the summer and autumn season. Water of Tirana and Lana rivers results most polluted, respectively at level of 104-107 for faecal coliforms and 103-105 for faecal streptococci. Drini and Kiri are less pollution.
Keywords: Albania, water pollution, rivers, faecal streptococci, faecal coliforms,.

029 Ecological and tourist values in mountain ecosystem Voskopoja. Albania

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Abstract
Albanian environmental resources are multifunctional. The values of these resources appear as a special ecological value, tourism, and cultural. The study of ecological and tourist values in mountain ecosystem Voskopoja, Albania data was based on geographical, historical, environmental, climatic, and archival

interviews. All the information in the form of the above data was used to analyze and assess the situation and ecological tourist area Voskopoja. From the results of the issued and analysis, we conclude that: environmental situation Voskopoja mountain ecosystem is an innovation for the improvement and sustainable development of ecotourism in the area of Voskopoja; Facilities and cultural heritage of the area of value-added tourism Voskopoja; Development of a strategy with the ecological character as the creation of new landscapes, planting native vegetation, urbanization, etc.,significant impact on the improvement of tourism in the mountain ecosystem Voskopoja.
Key words: mountain ecosystem, ecotourism, sustainable development, environmental resources

030 Analysis of climatic changes based on indicators of temperature extremes in the Balkan and the Mediterranean region.

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Abstract
Realization of this study is based on research and processing of climatic temperature indicators reflected in materials science in 2008. After receiving the data processing is done on the basis of deductive logic, based on environmental arguments which are changing due to climate change impacts. Space climate change affects countries and regions around the globe. This overview on the ends of the temperature indicator for Balkan and Mediterranean countries, gives us an opportunity to pass on to deeper studies, because the impact of climate change on physical and biological environment has no borders. The risk of global climate change is becoming increasingly apparent, is a true need to focus on efforts to limit greenhouse gases and to minimize that issue the impacts on climate change. Lower extremity temperatures ranging up to - 40 ^{0}C station Erzurum, Turkey and high ends of the temperature station Kebili +50 ^{0}C.
Keywords: temperature, climate change, extremes, impact, station

031 Assessment of climate in Shkodra with statistical methods and climate indices

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ABSTRACT
Global climate changes have a direct impact on the world of living. Their effect seems biology studying the situation in local terms. This means the numerical comparison of plant and animal species in different periods of time. Studies found that the visible effects of global climate change and local ecosystems encounter in the surface as lakes, rivers, etc. agro-ecosystems. The study of local climate change starts with the evaluation of indicators of climate ecosystems doing an analysis of the values of climatic elements provided by reliable sources as meteorology laboratories or meteorology checkpoints. We study the local climate mathematical processing used to show performance trends of climatic elements in a locality or area of ecosystem. Local studies in general belong to a region or territory in small size, and as a result the real indicators and results appear more credible. Bioclimatic evaluation, in the ecosystem of Shkodra Lake, based on analysis of climatic indicators, Q index Emberger and graphical analysis of climate indicators of precipitation, temperature and relative humidity of air.
Key words: lake area, climatic elements, statistical methods

032 Paleopalynological study of Leguminosae and Rosaceae families in Elbasan region

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Abstract
The study is performed in Elbasan city. This city is situated in the middle of Albania. It is one of the biggest cities of Albania. A lot of biological studies have been realized in this region during two last decades' periods. This study provides some paleopalynological data about the dispersion of Leguminosae and Rosaceae families during Quaternary period in the area where is situated Elbasan. The aim of this paper is to present the correlation between the depth and dispersion of Leguminosae and Rosaceae families on different periods of time. For this purpose we took some samples from various layers of soil, starting from the surface to four meters depth. Palynological data for these families were provided for the first time in the Albania's palynological literature.According to the analyses of these samples we found out several interesting data that showed clearly the correlation between the depth and number of spores and pollens for these two families.
Key words: Paleopalynological, Quaternary period, spore, pollen, leguminosae, rosaceae.

033 AMPLIFIED FRAGMENT LENGTH POLYMORPHISMS (AFLPS) GROUP POPULATIONS OF *SALVIA OFFICINALIS* OF ALBANIA IN ACCORDANCE TO THEIR GEOGRAPHICAL LOCATIONS

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Abstract
The gene pool under study contains 80 genotypes of *Salvia officinalis* L., belonging to eight geographically quite distant areas (Tomorr, Berat; Tepelenë; Përmet; Ulzë; Shëngjin; Valbonë; Qafë Thanë, Pogradec; Llogara, Vlorë) of Albania.
The Amplified Fragment Length Polymorphisms were the category of molecular markers used to evaluate the intra-populational and inter-populational diversity.
A total of 63 molecular markers were received from which 20 were polymorphic.
The distribution of the molecular markers among the genotypes was used to construct binary matrices, which were elaborated via the soft NTSYS to construct dendrogramma of similarity among genotypes of the same population, among the eight populations, among populations of close geographical locations, and finally among the eighty genotypes all together.
They clarified the fact that genotypes of the same populations shared from 30% to 60% and to 80% similarity; that the populations of the near geographical locations grouped together giving this way a strong indication on the important role of the environmental conditions into the genoma of this species; and that the 80 genotypes compared to each other shared at least 70% similarity. Once more the AFLP-s proved to be a very useful tool for the effective evaluation of the genetic diversity in population level at plant species. They grouped the populations of *Salvia officinalis* according to their geographical affinity indicating that the intraspecific variability at this species is closely linked to the environmental conditions.
Keywords: *AFLPs, genetic polymorphisms, molecular markers, Salvia officinalis, vajra esenciale*

034 Organochlorinated pesticide residues in marine Water in the south of albania

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ABSTRACT
This article, presents data of organochlorinated pesticides levels in marine waters in the south of Albania. Stations in the study were: Triport (bay of Vlora, the Adriatic Sea), Karaburun Peninsula (Bay of Vlora, the Adriatic Sea) and Dhërmi (Ionian Sea). Water samples were taken in the period May-July 2010. Organochlorinated pesticides are a widespread class of organic compounds for agricultural purposes and also known for many environmental problems. They are persistent, apolar compounds and can accumulate

easily in fat tissues. These chemicals can be transported via air routes and movement of water from pollution sources. Analysis of organochlorinated pesticides in water samples was performed by gas chromatography technique using electron capture detector (GC / ECD), based on EPA Method 8081. In the analytical method combined liquid-liquid extraction and florisil treatment with 5% water for cleaning of the samples as pretreatment procedure. Rtx-5 capillary column was used for isolation and determination of organochlorinated pesticides. In the studied samples were detected regularly in large amounts of DDT and its metabolites, Lindane and its isomers and HCB. Presence of organochlorinated pesticides was as a result of their previous uses for agricultural purposes, due to inflows of rinse from agricultural lands and from miss management of waste for organochlorinated pesticides stocks after 90'. One important factor with significant impact in the profile of pesticides is the movements of marine currents within the Bay of Vlora. Found levels of organochlorinated pesticides are comparable to levels reported for similar studies in the Adriatic Sea and Ionian Sea.
***Keywords**: Adriatic Sea; Ionian Sea; Organochlorinated Pesticides; Gas Chromatography*

035 Study of Organchlorinated pollutants in Sediments of North Albania

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ABSTRACT
PCBs and other chlorinated pollutants, particularly the highly chlorinated ones, have been known to persist in soils, water, sediments and biota for long periods of time. The deposition of particle-bound PCBs from the atmosphere and the sedimentation of them from water are largely responsible for their accumulation in sediments and soils. Data reported here are parts of a study to determine the concentration and distribution of polychlorinated biphenyls in sediments of North Albania: Velipoja (Adriatic Sea), Buna River to Shkodra Lake. Sediments were sampled in May 2009. Ultrasonic extraction was used for extracting polychlorinated biphenyls from sediment samples. Clean-up procedure for sediment samples was performing using metallic mercury following an open florisil column. Analysis of PCBs was based on the determination of the seven PCB markers (IUPAC Nr. 28, 52, 101, 118, 138, 153 and 180) measured by gas chromatography electron capture detection. Results of surveillance on polychlorinated biphenyls markers was in levels comparable within sediments of these three water resources, because their same origin.
Keywords: Adriatic Sea; Shkodra Lake; PCBs; Buna River; Gas Chromatography

036 DAILY VERTICAL DISTRIBUTION OF CULTURABLE HETEROTROPHIC BACTERIA IN OFFSHORE CENTRAL ADRIATIC SEA

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Abstract
The Albania coast of the Adriatic Sea is the less explored area in terms of scientific and management aspects, beside the evidently high importance of the ecosystems. The Adriatic extends northwest from 40° to 45° 45' N., with an extreme length of about 770 km (415 nm, 480 mi). It has a mean breadth of about 160 km (85 nm, 100 mi), although the Strait of Otranto, through which it connects at the south with the Ionian Sea, is only 45-55 nautical miles wide (85-100 km). The Albanian coast line and continental shelf is a typical alternation among the erosive and accumulative types and the Delta Buna-Drini of is typical accumulative one. The aim of the current paper is to present recent data on cultural heterotrophic bacteria in the "open sea", central part of Adriatic Sea in a line passing the continental shelf from the Delta Buna-Drini to the isobaths of 1100 m. In order to achieve the planed intention, 22 samples of water were collected during the May 2009 in different depths and distances from the seashore further on analyzed in laboratory. Some physical and chemical parameters (temperature, salinity, transparency, oxygen dissolved, etc) were analyzed as well following recent techniques of CTD. The results prove that daily vertical distribution of cultural heterotrophic bacteria in offshore central Adriatic Sea is interrelated with

physical and chemical parameters, especially by temperature and the depth mixed by wind and down welling currents. The comparison of these data with those taken by the other authors in the coastal and the depth of Adriatic Sea shows that this area is an oligotrophic character of quality.
Key words: Adriatic Sea, cultural heterotrophic bacteria, biomass production, eutrophic area, oligotrophic ecosystem

037 A SURVEY OF OF BIOAVAILABLE FRACTION OF PERSISTANT ORGANIC POLLUTANTS IN THE POLLUTED AREAS OF LAKE SHKODRA

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Abstract
The Shkodra Lake is located on the border between Montenegro and Albania and is the largest lake in Balkan. During the last decades, the anthropogenic pollution is going to be significant in this area. The exposure of aquatic biota to certain HOPs is of immediate concern because of the ability of some of these compounds to bioaccumulate and induce either lethal or sub-lethal toxicity including mutagenic, carcinogenic, teratogenic and endocrine disrupting effects on species at all tropic levels and in doing so disrupt the normal functioning of the whole ecosystem. Consequently, the regulatory monitoring and risk assessment of hydrophobic contaminants in surface waters is generally hampered by the inability to measure reliably these low (and sometimes fluctuating) concentrations. In order to solve this problem and to monitor the bioavailable fraction of more hydrophobic organic micropollutants is used the laboratory extraction of water samples by using a polymeric material as a receiving phase as polydimethylsiloxane (PDMS) the most applied polymer. The concentrations of a number of PAHs in lake Shkodra water ranged from 0.01-5 ng/L.
Key words: PDMS, PAH, HOP

038 PHYTOPLANKTON DIVERSITY AND SUCCESSION IN THE ORIKUMI LAGOON

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Abstract
The phytoplankton diversity and succession in the Orikumi lagoon was investigated for 12 consecutive months (Oct., 2005 – Sept., 2006). Phytoplankton diversity was clearly higher in the dry than wet season. Six major algal groups - the *Bacillariophyceae*, *Cyanophyceae, Euglenophyceae*, *Chlorophyceae*, *Dinophyceae* and *Chrysophyceae* were recorded. The diatoms (*Bacillariophyceae*) were the most important group in terms of diversity with the centric forms recording a higher number of species than the pennate forms. Whereas dinoflagellates (*Dinophyceae*) recorded more species in the dry season, the euglenoids (*Euglenophyceae*), chrysophytes (*Chrysophyceae*) and most green algae (*Chlorophyceae*) were more common in the wet season. Notable species recorded in the dry season were *Actinoptychus splendens, Bacillaria paxillifer Coscinodiscus radiatus, Coscinodiscus granii, Parlibellus delognei, Skeletonema coastatum* and *Thalassionema nitzschoides*, whereas *Aulacoseira granulata* var. *angustissima*, *Aulocoseira granulata* var. *curvata*, *Fragillaria construens*, *Gonatozygon* sp., *Microcystis aureginosa*, *Scenedesmus obliquus* and *Synura uvella* were reported in the wet season.
Keywords: Microalgae, phytoplankton, diversity, Orikumi lagoon

039 REGIONALISITAON OF THE ALBANIAN TERRITORY BY THE FLUCTUATION OF YIEL PRODUCT AND METEOROLOGICAL FACTORS

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ABSTRACT
The environment conditions under which the plant grows and develops represent a system of factors, wherein the meteorological factors predominate. Therefore, it is important for various agro-meteorological and agricultural researches the recognition and progress of the meteorological factors, which influence the vital processes associated with the plant and farming yield product. Collecting and processing the agro-meteorological data bank is required with respect to conducting various researches in the area of agro-meteorological forecasting. It is precisely for this reason that our research study intends mapping Albania into 8 synchronous regions, which are represented on their own by equal climatic conditions and synchronous yield product for these areas. Initially, the homogenization of the meteorological elements series through implementing various research methods, as well as the yield series through the DMA (Double MASS Analyses) Test were carried out. The correlations identified among the pairs relevant for the respective districts coincide with the results serving the entire territory regionalization. Later, based on the theory of synchronous yield fluctuations for the various regions' pairs, it will be concluded in a establishing the regional mapping divided into 8 areas, wherein each of them will include regions equal both in terms of climatic conditions, as well as in terms of the synchronous yield fluctuations.
Keywords: Agrometeorology, regionalisation, homogenisation, synchronousness, DMA Test

040 The role of land reforms on land cover, land use and environmental situation in Albania

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Abstract: Albania has experienced one of the most radical cases of postsocialist reform. It was the only country in postsocialist Europe outside the former Soviet Union that switched from state to private ownership. Up to 1990, the socialist state owned all land, controlled the flow of produce and inputs through a procurement system, and isolated the country from the West and East. This situation changed drastically in the South-eastern European country after 1990. The Albanian state distributed all agricultural land to the rural population in 1991. Albania is the only country in Central and Eastern Europe that followed such a pure land distribution strategy. It also liberalized domestic markets for agricultural produce and inputs and opened Albania's international borders to movements of goods, capital, and people. This paper analyzes the effects of postsocialist reform on land cover and land use in South-eastern Albania. The analysis targets three main research questions: First, how did land cover change in the study area between 1988 and 2003? Second, what were the changes in rural livelihoods during the postsocialist period? And, third, what are the determinants of the changes over time and how are they linked to changing rural livelihoods? The first question is addressed using satellite data to measure changes in land cover between 1988 and 2003. The second draws on a village survey to assess changes in rural livelihood strategies intertwined with land use. The assessment of shifts in the determinants of land cover between 1996 and 2003 relies on econometric modeling. Two models are estimated for land cover as a function of variables that are hypothesized to influence the spatial arrangement of land cover. The independent variables are derived from geographic information systems (GIS) and the village survey. Taken together, the analysis provides unique insights into the effects of postsocialist reforms on land cover and land use.
Key words: land, reform, environmental situation

041 Microbiological Assessment of Water Used in Some Abattoirs in Albania

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Abstract
Contamination of water by bacterial pollution is a serious public health concern and it's so important monitoring of the actual pathogens. The microbiological analysis of water used in four abattoirs was

assessed using standard and contemporaneous microbiological techniques. This study is performed from July to June, 2008-2009, in Microbiological Laboratory, Albania. Values obtain for the bacteriological count show that TBC and TCC in summer were significantly higher than other seasons. Results from the microbiological analysis indicated that all the samples collected were highly contaminated with pathogenic organisms, *Escherichia coli* having the highest observed prevalence (29%) while *Enterobacter aerogenes* had the least observed prevalence (2%) among the encountered isolates. Highest mean bacterial count observed during the study was 8,0 x 10^5 CFU/100 ml. Recorded pH and average temperature values ranged between 6.6-7.2 and 18,9^{0}C-17,15^{0}C respectively.
Key words: Bacteriological assessment, Abattoirs, Physicochemical analyses, sanitary condition.

042 CYANOBACTERIA FROM SHKODRA LAKE AND HISTOLOGY OF LARVAE HYPOPHTHALMICHTHYS MOLITRIX (Valenciennes 1844)

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Abstract: The aim of this study was to find out how crude extract of cyanobacteria can influence larval development of hypophthalmichthys on the basis of embryo-larval toxicity test and histological changes of liver of larvae hypophthalmichthys aexposed 30 days to the crude extract of cyanobacteria with the cumulative concentration 9.0 µg l^{-1} (medium concentration of the extract) and 0.9 µg l^{-1} (low concentration of the extract) of microcystins LR, RR and YR. The experiments were finished after 30 days. Evaluation of the tests was based on the OECD guideline for testing chemicals, direction 210 from 1992. Liver sections were stained with haematoxylin-eosin and using light microscopy. The extract with medium concentration caused an increase in malformed and dead larvae. The extract with low concentration caused an increase in dead larvae. Vacuolar dystrophy of hepatocytes accompanied by damage of nuclei (pyknosis,) were found in the group exposed to the low concentration of the extract. Focal necroses and dystrophic changes of hepatocytes with vacuolization and nuclei damage (pyknosis, karyolysis,) were found in the group exposed to the medium concentration of the extract. The degree of damage depended on the concentration of the extract.
Keyword: cyanobacteria, malformations, fish, histology

043 Health Impact Assessment of Air Pollution in Some Regions in Albania

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Abstract
Air is the oqean we breath. Air supplies us with oxygen which is essential for our bodies to live. Ais is 99,9% nitrogen, oxygen, water vapor and inert gases. Human activities can release substances into the air, some of which can cause problems for humans, plants and animals. There are several main types of pollution and well-known effects of pollution which are commonly discussed.These include smog, acid rain, the greenhouse effect, and "holes" in the ozone layer. Each of these problems has serious implications for our health and well-being as well as for the whole environment.The age and health condition are more important also at the response opposite the pollution of air. During the last decade in our country such as result of freely population movement, development and growth of their industrial activities, growth of vehicle number, collapse of roadway infrastructure etc., it is seen a increase of air quality pollution. In this study we exhibite the pollution indicators of the air quality, such as PM10,LGS, which are in the high level; outdoor and house dust's level; health indicators, especially lung diseases: bronchial astma with higher percentage , cronic bronchit and lung cancer; as the number of the cars as important factor of the pollution in Elbasan districts during four years.
Key words: air pollution, PM10, LGS, dust, environmental health, breath diseases.

044 SOME ENDANGERED COLEOPTERA SPECIES OF NORTHERN ALBANIA

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Abstract: In this study we are going to present some Northern Albanian Coleoptera species, endangered in their habitats,which have also their perilous categories at the national level based on the Red List of IUCN (International Union for the Protection of Nature). There are exactly 12 Coleoptera species with their risked categories: VU (6 species), EN (2 species), LR (2 species), CR (2 species). These data are derivative of a several-year monitoring, based on expeditions carried out in different areas of the country.We think that there are lots of causes of their peril, but the most important to be highlighted are the destruction of their habitats, the collection before egg emplacement, chemical –organic contamination of waters (for water insects) etc. To prevent these risks we should take measures for the protection and preservation of the habitats, to elude commercial collections. Meanwhile, we should investigate thoroughly on ecological research and should monitor endangered species and their habitats, especially those from EN category (*Calosoma sycophanta*, *Gymnopleurus mopsus*) and CR category (*Osomderma eremite*, *Rosalia alpina*).
Key words: Coleoptera, Chrysomelidae family, Albania, Malësia e Madhe Region

045 THE PARTICULARITIES OF CHEMICAL POLLUTANTS ACCUMULATION IN DIFFERENT COMPONENTS OF FOREST ECOSYSTEMS IN MOLDOVA

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Abstract
The study performed in 34 forest ecosystems in the Republic of Moldova indicates that there are certain particularities concerning differential accumulation of heavy metals in abiotic and biotic ecosystem components and possible sources of pollution. The results of the chemical analysis of the six studied chemical elements (Cu, Zn, Cd, Pb, Cr and Ni) show that none exceeded maximum permissible concentration in the *soils* of our forests. It has been evaluated that *trees* tend to accumulate Zn, Cu, Pb, Cd and Ni which is confirmed by high concentration of these elements in the litter of representative species. *Mosses* intensely accumulate Pb, Cd, Cr, whereas *lichens* proved to be the best accumulators of Cu, Pb and Cr. In particular, the litter layer and mosses accumulate better Cd than lichens do, which indicate the possibility of their use in monitoring of environment pollution with Cd. In all cases mosses and lichens accumulated more Cr than the litter does, which probably involves a cross-border penetration of the pollutant by air. Ni is accumulated better by trees, because the element content in the litter prevails over that in lichens and mosses. Its origin can be both ground and air.Taking into consideration investigated bio accumulator's cumulative properties and distribution uniformity, the following species are recommended to be applied in the monitoring of ecosystems pollution with heavy metals within the Republic of Moldova: oak - *Quercus robur*, mosses - *Hypnum cupressiforme*, lichens - *Parmelia sulcata* and mollusks - *Helix pomatia*.
Key words:ecobioindication,heavy metals,pollution,forest ecosystems,mosses,lichens,mollusks.

046 Adsorption and recovery degrees of SrG Extra from activated carbon used in Water System studies

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Abstract
During the studies of aquatic environments with artificial tracer we can take the information measuring

the dyes fluorescence intensity directly in water samples or in carbon bags extracts. The purpose of this paper relates to determining the adsorption and recovery degree of Sulphorhodamine G (SRG) Extra from active carbon bags. The effect of the activated carbon is that traces of the used dye are strongly fixed at the surface of the carbon grains. This attribute is used in different water systems studies with fluorescent tracer experiments. Adsorbed tracers can be extracted from carbon bags under the analytical procedures. Based on measurements of SRG Extra fluorescence intensity in standard solutions and extracts we can calculate its adsorption and recovery degree from activated carbon bags. The obtained results prove that extreme low traces of SRG Extra, which cannot be detected directly in the water sample, can be determined in carbon extracts.
Keywords: Artificial tracer, Fluorescence Intensity (I_F), Synchronous scan, SRG Extra, Activated carbon.

047 INTERACTION BETWEEN ENVIRONMENT, OLIVE AND IMPACT ON PRODUCTION

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Abstract
In *Kaninjot* olive cultivar, analysis for characterization of changes intervarietal (pomological and technological) were carried out in the period (2007-2009), in three areas of cultivating geography that, at a distance 400 km (North-Sud): (1) Lukove (2) Jonufer, (3) oblike. The certification of characteristics was carried out according to Rezgen (COI). This cultivar has expressed the difference of its genetic potential, intervarietal variability, influenced by the environment of cultivation. The changes consisted of fruit weight; Lukove 3.8 g, 3.1 g in the Oblike.The ratio (T / E) is 1:23 to 1:45. Leaf surface (44 mm ² to 73 mm ²). Up to 54 mm length intnought 28mm. The number of flowers in inflorescence (21-13), vezor abortion 18-31%, lowers/fruits (2.1-0.96%).Production (895-285g/m³); percentage of oil (the fresh substance), 29% - 25%. Variability continues and for oil acidity (0.6-1.1%), N° peroxideve, the soaps number, iodine number. Phenological changes have happened due to the differences of effective temperatures, Σ (t-t°) with the difference about 1028 °C from 3263 to 2235° C (°t-t). Individuals of the same cultivar (cv Kaninjot), have expressed genetic potential, technological and pological differences under the influence of geographical area cultivation. The first and second area, aremore favorable for cultivation of cv. Kaninjot.
Key words: Olive tree; technology, pomology; oil acidity; peroxide

048 SURFACE WATER QUALITY OF SHKODRA LAKE BASED ON MICROBIOLOGICAL PARAMETHERS

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ABSTRACT
Shkodra lake water is exposed on the anthropogenic pollution, which is connected to the sewages, waste outfalls, agricultural activities etc. The parameters were examined for a number of samples from different selected sampling sites at regular intervals during the year 2010. The microbiological analyses are performed in accordance with the European Standard Methods and Standard Method (WHO). The presence of coliform bacteria like: *Faecal coliforms, Escherichia coli, Streptococcus faecalis* etc, on the surface of the lake water indicate presence of human activities near the inhabited area around the lake. Microbial loading vary also in relation with external natural conditions. Analysing of water samples is figured via method with vacuum pump filtration, where was analysed a quantity from 100 ml for each analyse and the method with multiple tube fermentation (MPN). The pollution even though is evident results to be within European Standard Norms for surface waters.
Key words: Escherichia coli, Streptococcus faecalis, faecal coliforms, MPN, MF.

049 THE PRESENCE OF HEALTH EDUCATION ISSUES INTEGRATED WITH ENVIRONMENTAL EDUCATION IN THE CURRICULA OF UNIVERSITY OF SHKODRA

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ABSTRACT
Besides environmental education that is compulsory already in our Albanian educational system, Health Education is also a very important column for the education of students, which deals with their daily life and the preservation of the life quality for each individual. School and university is considered one of the main actors for the environmental education in Albania, therefore giving information on environment and health issues should be perceived and considered as a very important duty with practical value and it should be in the attention of all pedagogical staff in all schools in the country. The purpose of this qualitative and theoretical research was to evaluate the progress of integrated Environmental and Health Education in the Albanian University educational system and especially in the curricula of University of Shkodra. This research presents the way of treatment of knowledge and education about the environment and health through the curricula of compulsory subjects and secondarily through different projects that relate the health with the education. Based on this research's findings, recommendations are given on intervening in the existing curricula regarding environmental and health education. This will provide a future generation that takes a good care of themselves by preserving the environment in which they live.
Key words: Health education, Environmental Education, health issues, curricula, environment

050 CLIMATE CHANGES IMPACTS ON THE ALBANIAN COAST AND ADAPTATION CHALLENGES

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ABSTRACT

The Drini and Mati River Deltas (DMRD) are 2 of 3 deltas found on the northern Adriatic coast of Albania. River deltas are a distinct feature of the northern coastal region which extends from the Albania-Montenegro border in the north to the Rodoni Peninsula in the south. The DMRD harbors significant biodiversity values, and this is recognized under the National Biodiversity Strategy and Action Plan (NBSAP, 1999). Three main types of habitat are found between the2 deltas: (i) marine, (ii) wetlands including estuarine, riverine, lacustrine and palustrine, and (iii) non-wetland habitats including forests, shrubs and open fields where traditional agriculture is practiced.
The projected temperature increase (about 1.8°C and 3.2°C by respectively 2050 and 2100, especially higher in summer) and precipitation decrease (about 8% and 16%, by 2050 and 2100) is likely to have as consequence *milder winter, warmer springs, hotter and drier summer and drier autumn*. More hot days and hot waves, frequent and intensive drought (with increased fire risk) are expected. These changes in climate are expected to place additional stress on marine and littoral biodiversity as well as livelihoods of local communities. Sea level rise (projected to increase from 18 cm to 59 cm, up to 2100), more frequent and intense floods, aggressive erosion, frequent inundation and longer submersion of low lying coastal areas could affect life cycles of species and pose risks of habitat loss and fragmentation of a unique compound ecosystem consisting of sandy dunes, lagoons and coastal wetlands. Agriculture and tourist infrastructure are prone to flooding caused by storm surges (like in December-January in 2009 and 2010).To increase the adaptive capacity of ecosystems and livelihood, a set of on-the ground adaptation measures, such as coastal dune habitat restoration, modification of DMRD protected area network planning and coverage, and other landscape-wide adaptation policy measures are planned to be implemented within the frame of the project "Identification and implementation of adaptation response measures in the Drini-Mati River deltas" (GEF/UNDP).
Key words: climate change, scenarios, vulnerability, adaptation

051 ALLIUM TEST OF ROOT GROWTH FOR TOXICITY ASSESSMENT AS A STANDARD IN ENVIRONMENTAL MONITORING OF SOME AQUEOUS SOURCES OF MALESIA E MADHE

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abstract
Allium test *(Allium cepa L.)* as a plant bioassay is short-term and sensitive tool for scoring the effects of water chemicals. The aim of this study was the monitoring of the toxicity degree of some Malësia e Madhe aqueous sources, by measuring macroscopical parameters (length, form, turgescence and change of color) and microscopical parameters (mitotic index MI) of the onion bulb root bundles grown on top of test tubes. Test tubes were filled with water from Dobër wells, Vraka runnel, and Shegan waterside sampling points. Results were compared with test tubes filled with pure tap water from Koplik reservoir (control test), distilled water, acetone and $CuSO_4$ solutions. It has been observed: a slight bending of root tips in the series of Shegan; bending and brownish of root tips and color change to slight blue-green in the series of bulbs treated with Cu solution. Rating of samples for root length and MI values was (increasingly): distilled water, $CuSO_4$ solution, acetone solution, Shegan, Vraka, Dobër: readly lower in Dobër and Vraka, compared to the control test, showing that there is not a relevant root growth inhibition caused by chemical water pollution, acetone and Shegan values were aproximate to each-other and significally different from control test. These are preliminary results and should be followed by further and periodic Allium test investigations espetially for organic pullutants of agricultural areas closed to Shkodra Lake and alternative drinking water sources of Malësia e Madhe.
Key words : *Allium test, root growth, MI index, chemical water pollution*

052 AIR POLLUTION IN SHKODRA REGION

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Abstract
In this paper we have presented detailed results of air pollution over Shkodra region. We have obtained measurement results on number and mass concentration of particulate matter. Measurement campaigns were carried out in several areas; urban centre of Shkodra city, rural areas around this city, places near the perimeter of Shkodra Lake, seashore places of Velipoja (Adriatic Sea), and nearest mountain areas. The principal goal of this study is evaluation of air pollution situation in Shkodra region, and the determination of principal sources of particulate matter in this region. Monitoring results indicate the fact that principal sources in the Shkodra region are; traffic from the nearest roads, combustion activities from Shkodra city and surrounding residential rural centers, combustion activities from residential and commercial activities around the Shkodra Lake and Velipoja beach, biomass burning in rural areas, sea salt from the Adriatic Sea, and residential and touristic activities in mountain areas. Higher concentrations of particulate matter were obtained in urban centre of Shkodra city, whilst lower values were obtained in mountain areas.
Keywords: Air pollution, particulate matter, Shkodra region

053 The Determination of Phytoremediation Levels of Ornamental Plants Used in Landscape

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Abstract
Nowadays, the environmental pollution related in industrial development is one of the important problems. The researches in this field are generally conducted by using hyper accumulator plants. The phytoremediation properties of some ornamental plants used in landscape have been also

investigated.This study aimed to determination of heavy metals accumulation in leaves of some ornamental plants used landscape in Yüzüncü Yıl University campus area. For this aim leaf samples were taken from the plant groups belonging leafy, coniferous, shrub and bush on central refuge of main road in campus area affected heavy metal pollution because of intensive motorized traffic and coast area where in for away traffic. Soil samples were also taken from same areas mentioned above. Lead, nickel, cadmium, iron, zinc and copper concentrations were determined in leaf and soil samples. As a result, effects of species of plants were found significant ($P<0.01$) in Fe, Zn, Cu, Ni, Cd, and Pb contents of leaves. The effects of location were found significant ($P<0.01$) in Fe, Zn, and Cd contents of leaves. Interactions of between in locations and species were determined significant ($P<0.01$) for all of the heavy metals except Pb. The highest Fe, Zn, Cu, and Cd concentrations were obtained in species of *Cedrus libani* A.Rich, *Betula alba* Linn., *Salix alba* L. and *Eleagnus angustifolia* L., as 558 ppm, 70.18 ppm, 15.99 ppm and 0.157 ppm respectively. The highest Ni and Pb contents were determined in *Pyracantha coccinea* M. Roem., as 6.22 ppm and 3.65 ppm respectively.

Key words: Heavy metals, accumulation, phytoremediation, ornamental, soil pollution,

054 A DREAM OF FUTURE; SUSTAINABLE CİTİES WİTHOUT POLLUTİON BY LANDSCAPE ARCHİTECTURE PERSPECTİVE

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Abstract
Developing is an activity with residues in any forms. Residues can be found in the air, in the water at the soil, even in city life like, traffic, migration, loose of natural resources. Dream of the city life at the future is creating modern and long-lived, sustainable cities without environmental pollution. With a different expression, creating and living in the cities which develops without or minimal residue of production, which use and protect the natural resources and left them enough for the next generations and which present much humanistic way of living to citizens. That is not impossible, the city planners, architects and the landscape architects organise the lands, houses and open areas for many years. In that concept, all the decisions makers of city gather in one idea, providing and keeping sustainability in any part of city. Ecological planning make more possible to create sustainable city areas, like eco-homes, eco-parks and recreational areas, eco- transporting and recycling. This dream can be true by beginning to plan the future by today. This paper presents the environmental pollution attitude in sustainable city concept and its planning requirements for the future by a landscape architecture vision.

Key words: natural resources, environmental pollution, landscape architecture vision

055 DETERMINATION OF KETOPROFEN AND PHENYLBUTAZONE BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY WITH DIODE ARRAY DETECTOR

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Abstract
Nonsteroidal anti-inflammatory drugs are widely used in veterinary practice and are, therefore, of growing interest for the residue control of animal-derived food. Last years, an increased use of anti-inflammatory agents is observed, administered with or without antibiotics, for treatment of mastitis, because of the increase in the efficiency of these agents over antibiotics alone.
A high performance liquid chromatography method with DAD detector has been developed for the simultaneous analysis of ketoprofen (KPF) and phenylbutazone (PB) in the animal plasma samples. The chromatographic system consisted of a column SYNERGI-MAX RP 80A 250mm x 4.6mm x 4μm (Phenomenex). We used o-phosphoric acid (0.010M)/ acetonitrile (65%/35%) mixture as mobile phase

with gradient elution and the detection wavelengths were chosen 230nm and 254nm. Limit detection for KPF was 12.5 µg/kg and for PB µg/kg. Limit of quantification of KPF and PB was 50 ppb each. During 2009, in Albania, are analyzed 87 sheep and bovine plasma samples. Four of them were found positive. This study indicates that this method is suitable for routine analysis of the phenylbutazone and ketoprofen in the various animal plasma samples and other biological materials.
Keywords: veterinary drug residue, anti-inflammatory, ketoprofen, phenylbutazone, HPLC

056 IMPACTS AND RECLAMATION OF OPEN PIT MINES

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Abstract
Mines are although inevitable sources of pollution and deterioration of environment but also resource for the raw material for modern civilization which no other material can take their place. Science and technology especially in landscape reclamation improved many methods and materials to miti gate the impacts in order to obtain sustainable mining affairs.But these works must be introduced to mining works from the very beginning and depend on ecologically correct process. Past mining land use planning will gride the naturally appropriate method and material particularly landscape bioengineering with indeginous plants. Than correct and complete management of established vegetation. This contribution will explain the all process mcledy the reclaution method examples and plant materials for Albania.
Key words: Open pit mınes,environmental impacts,landscape reclamation,bioengineering

057 RELATIONSHIP BETWEEN AIR POLLUTANTS AND SOME METEOROLOGICAL PARAMETERS IN THREE CITIES OF ALBANIA

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ABSTRACT
This paper aims to perform a statistical analysis in order to evaluate the level of relationships between air pollutants as ozone and nitrogen dioxide and meteorological parameters as air temperature, solar radiation and relative humidity in three cities of Albania. Air pollutants and meteorological parameters are measured continuously in Tirana city and on expedition basis in Elbasan and Fieri cities during year 2006. Three main episodes during this year are taken in consideration and the analysis is based on hourly values of air pollutants and meteorological parameters. Diurnal variations of air pollutants and meteorological parameters are investigated at three cities during these episodes. According to the results of the statistical analysis there was found a strong positive correlation between ozone and air temperature with correlation coefficient R up to 0.91 and between ozone and solar radiation with coefficient R up to 0.73. Negative correlations are found between ozone and minimum value of relative humidity with coefficient R up to -0.88 and between ozone and nitrogen dioxide with coefficient R up to -0.97. Based on the results of this analysis the relationship between air pollutants and meteorological parameters in three cities of Albania varies from moderate to strong levels.
Key words: relationship; air pollutants; meteorological parameters; Tirana; Elbasan; Fier; correlation coefficient

058 Natural ecosystems in the world: some problems and solutions

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Abstract
Because different geographic areas on Earth differ so mach in their abiotic and biotic components, we can easly place them in broad categories. The two largest categories are broken down in this way: Ecosystems that are based on land are called biomes, while those in aqueous environments are known as aquatic life zones. Aquatic ecosystems are categorized primarly by the salinity of their water-freshwater and saltwater ecosystems fall into separate categories. Land environments are separated into biomes based on their climate. There are population-limiting factors that are purely the result of the size of the population itself. For example, in many populations of species in nature, birth and death rates are influenced by the density of the population. Other density-dependent factors that influence population size are increased predation; competition for food or living space; disease; and buildup of toxic materials. Some population-limiting factors operate independently of the population size. These density-independent factors will change population's size regardless of whether the population is large or small. Independent factors include fire, storms, earthquakes, and other catastrophic events.
Key words: ecosystem, abiotic and biotic components, population, dependent factors, Independent factors

059 MODELLING STUDY ABOUT SOME POLLUTANTS TRANSPORTING IN SOIL

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Abstract
In this study, some pollutant's transporting were worked in different soil samples. Column test equipment that's made for experiments were used for collecting data. Statistical analysis for all pollutant transporting data getting from experiments were made. Obtained results were used for development a modelling software. A PC, the WINDOWS XP operating system and Visual Basic were used for modelling. The results shown that, some soil typical parameters effected (texture, ph, etc.) on pollutant transporting but some of them didn't effect on transporting in soil.

Keywords: Pollutant transporting, soil, modelling software

060 EDUCATION FOR THE ENVIRONMENT- METHODS AND FORMS OF WORK

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Abstract
The paper says the purpose of education for the waste management and environmental protection as well as quality of education and promoting the proper treatment of waste and environmental means. In this sense, in the educational and promotional program for waste management and environmental protection, which should be brought and carried out in each city, is representing a strategy according to objectives (advertising, marketing, short and long term), defined target groups (when we send a message to every group, they will understand it and accept it with it's characteristics), key measures, actions for achieving the set goals and the program for their development.
Within the startegy and the rest of the key measures , the role and importance of the Center for development and protection of the enviroment should be realized. At the same time the strategic approaches in the work of the Center, it's basic tasks, methods and forms of work and features programs and activities should be declared.
Finally, we can expect the desired effects in protecting the environment only from the continuing education of the social groups and the systematic promotion, based on the designed programs. Otherwise, in solving of the environmental problems it continues to be „talked" to those who do not understand the problem and they don't know how to communicate, but they do know how to blindly defend their „

interests".
Keywords: education for the environment, methods and forms of work, waste management, the systematic promotion, quality of communication, concerted action by interested factors, positive approach, democratic dialogue, partnership, agreement

061 HERBAL TREATMENT'S IMPORTANCE FOR SUSTAINABLE LIFE AND STUDY ON WETLANDS IN THIS CONTEXT

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Abstract
Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED 1987). According to this definition, "water", indispensable element of life, must be protected in order to ensure the continuity of life. There are many methods for water treatment. However, only some of these methods can perform the purification process without harming the environment which called natural treatment systems. Furthermore, one of these natural systems is artificial wetlands. There are lots of advantages of artificial wetlands such as requiring less labor, being more economical and being compatible with nature.
Key words: Sustainable life, natural treatment systems, artificial wetlands.

062 Effect of naphthalene acetic acid (NAA) concentration in the rooting of vegetative cuttings of Thuya occidentalis "Emeraud"

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Abstract
Thuja occidentalis "Emeraud" is one of the most used evergreen ornamental plants for decoration of parks and gardens. The paper presents the influence of different concentrations of NAA in the rooting of vegetative cuttings of Thuya occidentalis "Emeraud". Vegetative cuttings of thuya were treated with rooting hormone NAA in six different concentrations 1000, 2000, 3000, 4000, 5000 and 6000 ppm. The experiment results showed that the concentration of rooting hormone NAA affects the rooting ability and increase the rooting percentage of cuttings. Specifically, the average percentage of rooting of untreated cuttings was 20%, while the average percentage of rooting of cuttings treated with NAA with different concentrations varies from 23 to 45.6%. In all treated variants, the rooting percentage was higher than the control, V1. Statistical analysis of results confirms with mathematical accuracy the fact that there are differences between the variants. Statistical index of variants (the NAA concentration) was F = 57.90605. This value is greater than the value F-crit = 3.325835. At the same time, the value of propability P-value = 4.66E-07 (equivalent to 1/4 x 107) was smaller than confidence level $\alpha = 0.05$.With the increase of NAA concentration from 1000 ppm to 4000 ppm, the rooting percentage increases from 20% to 45.6%, while the increase of NAA concentration over 4000 ppm (5000 ppm and 6000 ppm) was not accompanied with the increase in the rooting percentage. So, the optimal concentration of NAA is 4000 ppm.
Key words: cuttings, percentage, propagation, rooting, treatment.

063 COMPARISON OF "IN VITRO" RHIZOGENESIS OF WILD SPECIES OF THE GENUS *PRUNUS*

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Abstract
The present study was carried out to investigate the influence of different doses of auxinic phytohormone NAA (α-naphthaleneacetic acid) and MS nutrients on "in vitro" rhizogenesis of two species of *Prunus* genus: *Prunus avium* L. and *Prunus mahaleb* L. The most common use of these wild fruit trees is as rootstocks for sweet or sour cherry cultivars. Rooting induction appears very difficult, especially regarding to trees species. Three nutrient rooting media containing different concentrations of NAA and macro- and micronutrients, presented in the universal medium MS were compared: (I) - ½ MS macronutrients, MS micronutrients, MS vitamins supplemented with 0.1 mg l^{-1} NAA; (II) - ½ MS macronutrients, ½ MS micronutrients, MS vitamins with 0.1 mg l^{-1} NAA and (III) - MS macronutrients, ½ MS micronutrients, MS vitamins with 2 mg l^{-1} NAA. The rooting percentage changed according to the species and to the rooting media. The highest value of rooting for both species resulted in the first rooting medium. *Prunus mahaleb* plantlets showed higher rooting percentage in all examined media than *Prunus avium*. Root length was also evaluated and presented significant differences among treatments. Rooting medium III with higher dose of NAA gave rise of abnormal roots favoring the development of callus and limiting root formation for all the plantlets "in vitro". As result, the use of the lower doses than 0.5 mg l^{-1} of auxin NAA is recommended. The well developed roots "in vitro" induces a better ability to face the stress during the plantlets acclimatization.
Keywords: *Prunus* genus, MS medium, auxin NAA, rooting media, rhizogenesis.

064 "IN VITRO" MEDIUM TERM CONSERVATION OF SOME SPONTANEOUS FRUIT TREES

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ABSTRACT
The objective of our investigation is to evaluate a medium-term "in vitro" conservation protocol of some woody tree species (*Prunus avium* L., *Prunus mahaleb* L., *Zizyphus jujuba* Mill.). Wild relatives of cultivated fruit trees represent a source of genetic variability and can be very important in breeding programs and cultivation. For this reason, it would be of interest to use a method available for "in vitro" medium-term germplasm conservation, which involves strategies to slow plant growth through chemical and environmental manipulation of "in vitro" conditions. Effect of reduced sucrose and MS salts concentrations and combination of low temperature and light regime were examined using "in vitro" grown plant cultures. Maintenance in these conditions reduced microcuttings growth. To test the regeneration of the conserved cultures, they were transferred onto fresh culture medium. The examined species differed significantly in their survival. However they were similar in terms of proliferation ability, when they were transferred onto fresh medium. The effect of low temperature (4^oC) combined with reduced light regime is the most effective method of medium term preservation for all the species. *Zizyphus jujuba* species resulted with highest survival rate in both used preservation methods. The optimal time of conservation without subculture on 4^o C was 14 months for *Z. jujube* and about 6 months for *P. mahaleb*, and *P. avium*. Whereas reducing sucrose and MS salt (1/2MS) concentrations resulted optimal for 5 months for *Z. jujuba*, 4 months for *P. mahaleb*, and 3 months for *P. avium*.
Keywords: "In vitro" conservation, low temperature, reduced light regime, sucrose, survival, regeneration.

065 *IN VITRO* SHOOT PROLIFERATION AND MULTIPLICATION OF *PRUNUS CERASIFERA* L.

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ABSTRACT
The rapid "in vitro" multiplication of clonal plants is desirable to cultivate and to shorten crossing programs in fruit trees breeding. The present study aimed to evaluate the explants survival and proliferation rate during *in vitro* establishment period, as well as to evaluate the *in vitro* multiplication potential of wild cherry plum, *Prunus cerasifera* L. Isolated apexes and lateral buds from cherry plum plants were inoculated in the Murashige & Skoog, MS universal basal nutrient medium supplemented with cytokinin benzylaminopurine BAP in the dose 0.7 mg l^{-1}. The mean values of explants proliferation were 43.47% and 70%, for apexes and lateral buds, respectively. The explants cultured in the basal nutrient medium MS showed *in vitro* multiplication rate of 4.14 regarding to apexes buds and 3.7 for lateral buds. Mean values for shoot height (12.5mm) and number of leaves (15.9) it was recorded in *in vitro* obtained cherry plum plantlets. Micropropagation is a suitable method for obtaining a great number of homogeneous plants within a short period.
Keywords: *Prunus cerasifera* L., MS medium, apexes, buds, cytokinin BAP, proliferation, multiplication.

066 Improving urban ecosystems USING Information and Communication Technologies

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ABSTRACT
Since the industrial revolution, our world was involved into many important challenges, as the spontaneous industrialization and urbanization processes. It's our obligation to work on environmental challenges caused by these unplanned changes. These processes are able to produce in a very short period a decuple growth of the population in different cities. At the same time these processes may cause the depopulation of other cities. Considering these transformations, recently the world has been interested on smart urban ecosystems, as an important part of the human activity. The capacity buildings growth and the community involvement are the permanent inducements of a sustainable and valuable development in urban ecosystems. We are indispensably obligated to look for new ways and methods for the community sensitization about environmental solutions. This paper is going to be a mixed production of the Physical Geography and the Information and Communication Technologies, Web-based GSI especially. These new methods aid the public participatory on environmental decision making.
Keywords: urban ecosystems, intelligent urban ecosystems, environmental challenges, Web-based GIS.

067 Wastewater and waste management in Albanian brewing industries

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ABSTRACT
Wastewater management constitutes a practical problem for the food and beverage industry including brewery industry. Beer production industry in Albania for many companies is relatively new. Industry output growth has increased and their waste. This paper gives a brief description of handling for key residues of these industries and also is shown some recommendations for the use of new ways to treat beer industry waste.
Industrial wastes, especially of organic origin, have a high potential for agricultural use. In different countries were investigated the effect of beer factory sludge on soil properties. Increasing doses of brewery sludge has a significant effect on the vegetative growth of sugar beet plants. It was found that waste brewery biomass of non flocculent type is promising biosorbents for the removal of Cu^{2+},Cd^{2+} and Pb^{2+}. Treatment of waste water for many industries must evaluate as important process because it is connected with a huge environmental fate.
Keywords: Breweries, Waste water, Waste management, Yeast, Kieselguhr sluge, Membrane process

068 SOIL EROSION AND SEDIMENTATION REDUCTION STUDY IN ALBANIA

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ABSTRACT
This article is a short presentation of the study SOIL EROSION AND SEDIMENTATION REDUCTION STUDY IN ALBANIA providing the recent findings of the erosion situation in Albania, by applied a terrain and computer model methodology for this phenomena, giving soothe results and lessons learnt and suggestions. The main objective of this study is to analyze the land-use practices in forests, shrubland, rangelands, pastures, cropland and orchards and management, and to quantify the impacts and the incremental costs/cost effectiveness of a certain mitigation measures to evaluate the effectiveness of a former financed project in non-questionable and acceptable way to The World Bank. The main specific tasks are an assessment of the current status of soil erosion and siltation (at dams and in rivers flowing to the Adriatic Sea) problems taking place in Albania today; an analysis of the effectiveness of forest and rangeland management mitigation measures, in particular, for example, to extending the life of dams with economic analysis and proposals for mitigation, together with an economic analysis of those measures. In this study, both the negative and positive impacts have been identified, and the erosion hazard is also taken into consideration. The study area is located in the whole country (fields, hills and mountains regions). The purpose is that via the quantitative and qualitative geologic, hydrologic, the morphologic and pedologic parameters based on international scientific standards, to manage the assessment of the degree of erosion reduction and to reach the conclusions about the erosion in general, but more about the degree of erosion reduction, especially in areas where NRDP of WB project intervened.
Key words: soil, erosion, scientific standards

069 THE BIODIVERSITY OF A PROTECTED LACUSTRINE COMPLEX WITHIN A LOWER HYDROGRAPHICAL BASIN FROM THE JIU

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Abstract
The lacustrine complex Valea Preajba, located within a plain in the hydrographical basin of the Jiu river, is included in the category of wet areas. The main ecological feature that defines the protected area consists in the fact that on an area not exceeding 30 hectares, are grouped a great variety of ecosystems: unevenness of the ground in the shape of small hills, pastures and meadows, agricultural lands and a complex hydrographic structure: springs, streams, rivers, marshes, small reservoirs. All these are populated with a variety of plants and animal species witch confers to the area an ecological character special for the Oltenia Plain and even for Romania. In the lacustrine ecosystems have been identified 36 paludous and aquatic macrophytes species, dominated by *Phragmites communis, Typha angustifolia, Scirpus lacustris, Heleocharis palustris, Lemna minor, Nimphaea alba, Potamogeton natans, Mentha aquatica, Myriophyllum spicatum, Ceratophyllum submersum*; 78 species of periphytic and planktonic algae; 13 large groups of benthonic invertebrates dominated by the larvae of Chironomidae, Coleopterae, Ephemeropterae, Heteropterae, Gastropodae; 10 species of fish *Cyprinus carpio, Carassius auratus gibelio, Rutilus rutilus, Abramis brama, Pseudorasbora parva, Perca fluviatilis, Sander lucioperca, Lepomis gibbosus, Alburnus alburnus*. The area is populated by 3 species of amphibians, 5 species of reptiles, 20 species of birds and 7 species of mammals.Taking into account the fact that the lacustrine complex belongs to a hydrographical system located in the neighborhood of Craiova, an important urban centre, it presents an increased tourist interest. This is why the local administration wants to ensure the proper conditions to determine the development of the ecological functions, which mainly refers to the diversity of the ecosystemic structures and biodiversity.
Keywords: lacustrine complex, the Jiu river, biodiversity, Romania

070 THE IDENTIFICATION OF THE PHARMACEUTICAL MEDICAMENTS IN THE SURFACED AND DRINKABLE WATERS BASED ON THE CHROMATOGRAPHIC METHODS

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Abstract
The aim of this study was to verify the presence of some widely used drugs in the drinkable water samples. In our study we are focused in the optimization of determination method of these drugs using HPLC-UV. We have used for this optimization CRM standards dissolved in water. The target compounds were amoxycillin, ampicillin, tetracycline, doxycycline, atenolol, diazepam, deksamethasone sodium phosphate, prednisolone sodium phosphate, isosorbide mononitrate. Each analyte standard solution was studied according the specific conditions described in the method of BP (British Pharmacopoeia) 2010. The measurements were carried out using Shimadzu HPLC-UV. A mixture standard of all analytes (0.01g/L each) was prepared and studied in the same conditions as for individual CRMs.We came to the conclusion that in the matrix where all the drug are present, a slight shift was observed for retention time of each analyte, which makes them identifiable, even in one another's presence. Another observation was that some of analyzed drugs in the standard mixture, like: tetracycline and doxycycline were identified better in these matrices using columns L_{21}, while for the others, C_{18} column was appropriate.
Key words: drug, drinkable water, HPLC, retention time, column

071 The Effects of the Concentration of macro & micro mineral salt the "in vitro" rooting of plum sub - grafts MRS 2 / 5.

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Abstract
The proliferation of plum sub-grafts MRS 2 / 5 by the technique of cultivation "in vitro" consists in achieving a considerable number of plants for a short time while maintaining genetic characteristics and phytosanitary purity and achieve one kind of uniformity in cultivated plants. The purpose of this study was to determine a nutritive ground composed of macro and micro mineral salts, to see their effect on the ground under the optimal requirements of the plant and the evaluation of their rapports on the percentage of propagation and rooting of plum sub-grafts MRS 2 / 5. The study also examined other indicators related to the number and length of branches as well as plant physiological behavior dictated by this salts' rage. By the experimental results has been proved three protocols of different nutritive grounds, namely.ML (Macro Lepoivre), ML / 2 and DKW (Driver Kiunyki 1984) and found that the largest percentage of plants' rooting of plum sub-grafts MRS 2 / 5 was achieved in 82% DKW ground (ground that has the highest concentration of ground salts compared to 67% of ML ground.)
Keywords: culture in vitro, rootstock, micropropagation, proliferation.

072 IMPACT OF CLIMATE CHANGE ON AGRICULTURE IN ALBANIA AND ADAPTABILITY STRATEGIES

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Abstract
One of the biggest concerns for society today is climate change, which is a direct consequence of global warming, whose projected knock-down effects will be harmful to the environment, and in particular to the agriculture. The climate changes seen as a consequence of alterations in the amount of rainfall patterns, temperature fluctuations and an increase of the sea levels will take on extreme forms and shapes. The expected effects will have a strong impact on human health, on water quality, biodiversity, on agricultural production and on the environment as a whole. Global warming is a consequence of the greenhouse effect seen mostly as a natural phenomenon which makes earth an inhabitable planet, but the anthropogenic factor has accelerated the process of "greenhouse gas" release thus triggering an increase in average temperature of the land surface. By analyzing the sources of these gas releases, agriculture contributes approximately 34%, but an almost scant attention has been paid to agricultural activities and use of land in relation to the greenhouse gas cycles. Earth possesses a great ability to capture carbon and other gases responsible for the greenhouse effect, but these potentials have not been taken into account until recently.The heavy dependence of Albanian economy on agriculture has dropped from 36 % to 20.7 of the GDP between 1990 and 2007. It should be noted that roughly 58.3 % of the population make their livelihood out of sectors which are sensitive to climate changes such as agriculture, forestry and fishery. Taking into account the possible changes in temperature, amount of precipitation and frequency of extreme climatic events as well as their impact, the most vulnerable agricultural areas in Albania will deteriorate and exert thus pressure on agricultural production and food supplies for the population.
Key words: climate change, agriculture, greenhouse gases, greenhouse effect.

073 STUDY OF ENVIRONMENTAL IMPACTS OF THE CONVENTIONAL AND BIOLOGICAL SYSTEMS ON THE CULTIVATION OF FRUIT TREES

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Abstract
The agricultural systems have had as their main objective the meeting of the nutritional needs of human society. In countries with conventional systems of agriculture, the agricultural activity is presented as an open system in which the manufacturing processes challenge the fossil energy behavior of chemical fertilizers and anti-parasites. But although conventional farming has brought about a great increase in agricultural production, it has also triggered negative consequences in the ecosystem: through the introduction of active substances into the chemical synthesis; it has damaged the biological complexity of agro-ecosystem along with the food quality of agricultural products. The ecological consequences of the implementation of conventional systems have given rise to the need of developing farming systems which show environmental compliance (eco-compatibility) and organic methods of cultivation, which preserve the environmental resources and their fertility. To this effect this study analyzes the environmental impacts (effects on soil micro-flora) in two cultivation systems: conventional and biological ones. The study also analyzes soil biological activity (micro-flora) and fertility levels in conventional and biological systems in plants fruit trees (vineyards and apple) with the view to identifying the impact of various modes of cultivation on the presence and activity of soil micro-flora. The methods of cultivation and technologies used are key to both the activity and fertility of the soil as a detrimental aspect to the production of plants. It highlights the advantages of the biological system in terms of high environmental qualities on the farm.
Key words: agricultural system, conventional, biological methods, micro-flora, fertility.

074 THE IMPACT OF GLOBAL WARMING IN SOUTHERN ALBANIAN GRASSLAND ECOSYSTEMS

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Abstract
The controversial data comes from different long-term experiments carried out thought the world on global warming effects. Several data from the alpine meadows of North America, suggests that the wildflowers will effected by the warming climate, whereas the ecosystems of the higher altitudes in Western Europe expressed higher resistance of ecosystems to global warming. On the other hand, the Mediterranean grassland ecosystem reflects also intensive transformation under rapid climate change. Our data collected during years 2004-2010 in grassland ecosystems of Saranda, Gjirokastra, Vlora, Tepelena and Permeti, shows an increase in changes of ecosystem structure and function. So, a decrease of cover vegetation and loss of active soil layer and expansion of thorny species toward the alpine grassland ecosystems were observed in this area. Several rare species, such as *C. bory*, *A. corcyrensis*, *C. microcalyx* subsp. *minor*, *C. decalvans* subsp. *leontopodium*, *C. banaticum* and several *Orchid* species are moving upward and adapted to the new ecological conditions. These data and the frequent hybrids between different species, observed in Southern Albania, are good indicators that show us the impact of global warming on grassland ecosystems.
Keywords: Grassland, cover vegetation, soil active layer, thorny species, hybridis

075 MONITORING OF CHEMICAL CONTAMINANTS IN FISH OF TIRANA MARKET

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Abstract
Over the last few decades, there has been growing interest in determining heavy metal levels in the water environment and attention was drawn to the measurement of contamination levels in fish. The toxic nature of these metals by food consumption is well known. The purpose of the study was to evaluate level of the chemical contaminants (Hg, Cd, Pb, Cr) in Tirana fish market.
Fish were selected based on life's condition (wild/cultivated), by size (small/medium), origin (own/imported), as well as.
Seventy one samples of Lophius *piscatorius*, Oncorhynchus *mykiss*, Merlucius *merlucius* and Sparus *aurata* fish were analyzed for Hg, Pb, Cd, Cr by AAS. Of the total samples analyzed Hg, Pb, Cd and Cr were detected in all samples. The results of the analyses indicate that concentration of the Hg it ranged from 0.008 to 0.23 mg/kg with a mean of 0.09 mg/kg; for the Cd varied from 0.002 to 0.02 with a mean of 0.009±0.050; for Pb it ranged from 0.001 to 0.02 with a mean of 0.010 mg/kg; for the Cr it ranged from 0.01 to 0.03 with a mean of 0.016 mg/kg. All sample values were lower than limits permitted from EU and MAFCP. This study aims to give an overview of the heavy metals in fish for human consumption.
Having concentrations of hazardous substances close to natural levels in the marine environment is also one of the ecological objectives of this study. The levels of these metals in foodstuffs will be under frequent monitoring.
Keywords: heavy metals, pollution, fish, consumption

076 Study of climatic temperature indicators in the region of Korca, Albania

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Abstract
Korca Region located in south east Albania. The climate of the area determined by the value of the

indicator and temperature climate. This study provides the option of setting the temperature trend in a period of over 30 years. The survey results are based on data metrological stations in the area of Korca. Also the results are issued based on statistical methods, based on height above sea level. Indicators are used values of correlations. Graphic method gives the possibility of logical analysis. Data processing shows that the region of Korca is heterogeneous in terms of climatic temperature indicators. The study is necessary for evaluation of further climate. His results can be used by farmers and specialists in the field of environment.
Key words:region, climatic temperature indicator, statistical method

077 Water Quality Modeling of Lake Macro Prespa Ecosystem

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Abstract
The purpose of this study was to develop a model for Macro Prespa Lake located in the Prespa region, Albania that can (1) simulate the water quality in the lake, and (2) aid in developing a more in-depth understanding of lake quality and the processes affecting it. For this reason, the two-dimensional water quality model CE-QUAL-W2 was used to simulate water quality, for the years 2007 through 2010. The model has been widely applied to stratified surface water systems such as lakes, reservoirs, and estuaries and computes water levels, horizontal and vertical velocities, temperature, and 21 other water quality parameters (such as dissolved oxygen, nutrients, organic matter, algae, pH, the carbonate cycle, bacteria, and dissolved and suspended solids). Some of obtained results are as follows. Starting the year well-mixed, cold, and oxygenated, the lake developed a thermocline by early summer, isolating cold, dense water below. Dissolved oxygen became depleted in the hypolimnion by late August to early October, depending on the year. Accumulation of ammonia began with the onset of hypolimnetic anoxia. Macro Prespa Lake turned over in November, returning to an isothermal, well-oxygenated condition. Algal blooms, including late summer blue-green algae blooms, occurred in all years of this study. Dissolved oxygen in Macro Prespa Lake was most influenced by water temperature and sediment oxygen demand and, to a lesser degree, periodic algal blooms. The largest bloom of algae typically occurred in August or early September. Model results suggest that this bloom was triggered by late-summer high water temperatures and was limited in size by the availability of phosphorus. The calibrated model was capable of simulating the important spatial and temporal dynamics of various constituents in the lake, and successful application of the calibrated model to 2009 and 2010 data confirmed this. Goodness-of-fit statistics for all 4 years varied from acceptable to excellent (mean absolute errors < 0.7^0C for temperature and < 1 mg/L for dissolved oxygen). Further work is needed to better simulate some of the complexities of the algae and zooplankton populations.
Key words: modeling, ecological processes, water quality, phosphorus, ammonia, chlorophyll *a*, algal blooms.

078 An Opportunity for improving irrigation efficiency using FAO aqua-crop model for irrigated and water deficient agricultural crops

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Abstract
Simulation models that quantify the effects of water on yield at the farm level are valuable tools in water and irrigation management. To address this need, FAO has developed a yield-response to water model, named aqua-crop model, which simulates attainable yields of the major field and vegetable crops

cultivated worldwide. Although the model is simple, it gives particular attention to the fundamental processes involved in crop productivity and in the responses to water, from a physiological and agronomic background perspective. The ease of use of the model, the low requirement of input parameters, and its sufficient degree of simulation accuracy make it a valuable tool for estimating crop productivity under rainfed conditions, supplementary and deficit irrigation, and on-farm water management strategies for improving the efficiency of water use in agriculture. A set of conservative parameters calibrated and validated for maize (*Zea mays* L.) in a prior study (Hsiao et al., 2009) and considered applicable to a wide range of conditions and not specific to a given maize cultivar, are used to further evaluate the performance of aqua-crop model for maize using data from environmental conditions of Korça zone. In this study, aqua-crop model is parameterized and tested for maize under full (100%) and deficit (50, and 33% of full) irrigation regimes. The model was able to simulate the crop water use under very high *ET* and wind conditions. Furthermore, the model performed satisfactorily for the growth of aboveground biomass, grain yield, and canopy cover (*CC*) in the non-water-stress treatments and mild stress conditions, but it was less satisfactory in simulating severe water-stress treatments, especially when stress occurred during senescence.

Key words: aqua-crop model, maize, irrigation, aboveground biomass, grain yield, canopy cover.

079 METABOLIC, HEMATOLOGICAL AND MORPHOMETRIC INDICES OF SALMO LETNICA AESTIVALIS OF OHRID LAKE

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Abstract

This paper presents some metabolic, hematological and morphometric indices of Salmo letnica aestivalis, which is one of four forms of Salmo letnica of Ohrid Lake. Hematological indices determined in blood and metabolic indices determined in plasma were hematocrit, hemoglobin, total proteins, cholesterol, alkaline phosphatase, total calcium, inorganic phosphorus and glucose. Morphometric indices measured were: total body weight, length till the tail bifurcation, length till the end of scales and maximal body height. The average values of metabolic, hematological and morphometric indices have resulted with a high probability (P > 0,999). The correlation coeficients beetwen metabolic and hematological indices have been also determined and analysed.

Key words: Salmo letnica aestivalis, blood indices, Ohrid Lake.

080 Impact of reconstruction mass to Golden Delicious apple grafted on M9 rootstock

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Abstract

Orchards with intensive apples are planted in Albania since early 1980 and were used cultivars such as Golden Delicious, Rennet Canadian, Red Delicious, Granny Smith, Fuji and Gala, grafted on clonal rootstock M9. Sowing distances were 4 x 2.5 m, while the mean realized yield till 1993 was 20-25 kg/plant. Changes on the property over agricultural land, improved the situation for apple production as well. New owners were well oriented and invested toward new cultivation technologies. The experience of emigrants had a very good impact, as well. Commercial economy development and farmers demands for profitable investments on fruit growing brought as a necessity the establishment and realization of the study *"Impact of reconstruction mass to Golden Delicious apple grafted on M9 rootstock".* The study was carried out in Dvoran, Korçë, in a two ha orchard, planted with Golden Delicious cultivar, grafted on M9 rootstock. The study was established according to the *randomized block design* with 5 variants and 4 repetitions/variant, as below:V_0- control, V_1 – reducing of the plants crown 10%, V_2 – reducing of the plants crown 20%, V_3 - reducing of the plants crown 30%, and V_4 – reconstruction of the crown 75%, recreating the crown for three consecutive years.Results showed that the best variant were V_4 with 55.23 kg/plant and V_3 with 33.12 kg/plant. The used design in the above mentioned variants reestablish optimal

vegetative and productive conditions of apple trees.
Key words: *apple, clone, form, reconstruction, technology, variant.*

081 THE CHARACTERIZATION OF MOSSES AS BIOINDICATORS AND BIOACCUMULATORS IN AIR POLLUTION MONITORING

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Abstract
In this work the accumulation of heavy metals in different moss species collected in the same sampling sites is studied. Samples of terrestrial mosses *Hypnum cupressiforme, Homolothecium, Neckera Krispo* and *Pseudoscleropodium purum* were collected from two different sampling sites in rural area of the southern part of Albania. The moss samples were collected during the period September-October 2010 according to the guidelines of the UNECE ICP Vegetation. The concentrations of heavy metals (Cd, Pb, Hg, Cu, Zn and As) were determined using AAS and CV-AAS technique. The quantity of accumulated heavy metals differs in various moss species from the same sampling sites. In order to evaluate the better heavy metal bioaccumulator moss species the interspecies correlation between the moss samples is performed. Based on the concentration of heavy metals in the analyzed samples the characterization of bioaccumulation behavior was performed.
Keywords: bio indicator, moss, air pollution, heavy metal,

082 HABITUS OF SUPERIOR GENOTYPES OF WILD CHERRY (*Prunus avium* L.) FROM NATURAL POPULATIONS OF AREAS AT TUZLA

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Abstract
The paper presents the results of monitoring long-standing habit genotypes of wild cherry (Prunus avium L.) from natural populations from localities Zivinice, Tuzla, Banovici and Kladanj. Habitus has special value in assessing the biological potential of the aforementioned taxa. It reflects the degree of fruit trees growing activity, biological predisposition for fruiting, resistance to various abiotic and biotic conditions of the external environment. This study shows very pronounced trends in the evolution and infraspecific differentiation of this kind, which goes towards the creation of new shapes and forms, some of which may have a separate taxonomic status. Some of registrated individuals show great potential in acquiring new lines in the field of agriculture, horticulture and biotechnology.

Key words: habitus, wild cherry, cultivars, biological potential, agriculture

083 AIR POLLUTION SURVEY OF VLORA CITY, ALBANIA USING THE MOSS BAG AS PASSIVE SAMPLER

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Abstract

Moss sample (*Hypnum cupressiforme)* collected at Llogara site (N40 01 50.3 E20 16 07.7) was exposed at different urban point of Vlora city. The aim of this survey is the monitoring of air pollution of Vlora area, Albania by means of mosses, as a good bioindicators for metals survey in air. For the first time the atmospheric deposition of trace elements, by means of the biomonitoring technique associated with analytical techniques, were applied to study multielement atmospheric deposition in our country. Terrestrial mosses characterized by the lack a root system; variability of morphology through the growing season is small; they lack epidermis and cuticula; have a high surface to volume ratio; a high cation exchange capacity and have several advantages as biomonitors.
Moss samples were used as passive samples and heavy metals, such as Cu, Pb, Zn, Ni, Co, Cr, Mn, Fe, As, Cd and Hg were determined by flame AAS method and/or electrothermal system. CVAAS method was used for mercury determination. Using the data, statistical methods and a less polluted moss sample were used for background evaluation. Quality controll for the process of extraction and determination of elements was carried out by analysis of CRM. PCA and Cluster Analysis were used to identify the most polluted areas and to define different pollution sources. Typical mercury pollution in air was found caused from the contamination from ex-Vlora Hot spot site.
Key words: air pollution survey, moss, passive sample, bioindicator, heavy metals, AAS method, PCA, Cluster Analysis

084 Effects of Calcium and Vitamine D Suplement on Bone Mineral Dansity of Lumbal Spine Region of Athletes[#]

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[#] This paper has been produced from Ph. D. Thesis of Ibrahim Bozkurt

Abstract
This study has been carried out to examine the effects of calcium and calcium + Vitamine D suplements on the bone mineral dansity (BMD) of lumbal spine region (L1, L2, L3, L4) of 60 elite level active male and female athletes whose ages vary between 18-23 of different athletic branches that are studying in Calisthenics and Athletics Academy of Selcuk University. In this study the Dual Energy X-Ray Absorbtiometrics method by using Hologic QDR-4500 C device has beed used to determine the BMD leves of subject lumbal spine regions (L1, L2, L3, L4). Subjects have been divided into three groups following as Calcium (Ca), Calcium + Vitamine D (Ca-D) and Control (K) respectively. For 12 weeks long time period 1000 mg extra Calcium tablets have been suplied to Calcium subject group, 600 mg Calcium and 400 IU Vitamine D extra have been suplied to Calcium + Vitamine D subject group. No additional suplemets have been suplied to control group. Two measurements have been fulfilled at the beginning and at the end of study. "One Way ANNOVA" and "Duncan" statistical tests have been utilized at the statistically significancy level of $P<0.05$ to determine the differences between both intergroups and intragroups. At the end of the study the BMD leves of lumbal spine regions of subjects have been shown no differences at the statistically significancy level (P>0,05). In conclusion, it is seen that suplemets of calcium and calcium + Vitamine D given to elite level athletes have been shown no effects statistically on the BMD levels of subject lumbal spine regions.
Keywords: Exercise, Athlete, Calcium and Vitamine D, Bone Mineral Dansity

085 EXTRACTION OF HYPERICUM PERFORATUM ME HEXAN, DCM, LIQUID CO2

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Abstract
Medicinal and aromatic plants are very important for the economy of Albania. Thousands of tons of

medicinal and aromatic plants are exported every year from Albania. Hypericum Perforatum is a very important medicinal plant with very well known effect on the mood of people and as an antidepressant. Extracts of this plant have been used for centuries for internal use and for external use. In literature there are examples of chemical analysis of Hypericum Perforatum using different extraction methods. In this study we are more interested in comparing its volatile components using subcritical CO2 extraction and other traditional extraction methods. The plant used was a locally collected plant which before extraction was dried to a constant weight and grinded as a fine powder. The chemical composition of subcritical CO_2 extraction was compared towards the chemical composition of extracts obtained by Soxhlet extraction using as solvent hexane and dichloromethane. The CO2 extraction was done in pressurized autoclave at 65bar and 32^0C. The crude extract of subcritical CO2 were than diluted in an appropriate solvent and its content was studied with TLC and GC. The crude extracts of solvent extraction were treated at the same way, but after evaporating the excess of solvent. The identification of the volatile components was done by Mass Spectroscopy.

Keywords: Hypericum Perforatum, GC-MS, subcritical extraction

086 COMPARISON OF CHEMICAL COMPOSITION OF EXTRACTS OF SATUREA MONTANA FROM DIFFERENT EXTRACTION METHOD

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Abstract: Saturea Montana is a very important medicinal plant for Albania that is exported in large quantities. In literature there are examples of chemical analysis of Saturea Montana using different extraction methods. In this study we are more interested in comparing its volatile components using subcritical CO2 extraction and other traditional extraction methods. The advantages of CO2 extraction are that we can very easily evaporate the solvent in low temperature. The plant used was a locally collected plant. Before extraction it was dried and grinded. The chemical composition of subcritical CO_2 extraction was compared towards the chemical composition of extracts obtained by Soxhlet extraction using as solvent hexane and dichloromethane. The CO2 extraction was done in pressurized autoclave at 65bar and 32^0C. The crude extract of subcritical CO2 were than diluted in an appropriate solvent and its content was studied with TLC and GC. The crude extracts of solvent extraction were treated at the same way, but after evaporating the excess of solvent. The identification of the volatile components was done by Mass Spectroscopy. It was noticed that the subcritical CO2 has similar polarity to hexane, and the chemical composition of extracts were similar to that. There were no new compound extracted with CO2 but this method showed to be more selective for some compounds.

Keywords: Subcritical extraction. GC-MS, Saturea Montana

087 A SOLVENT FREE METHOD OF PLANT EXTRACTION USING LIQUID CO_2 UNDER SOXHLET CONDITION

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Abstract: The extraction of medicinal and aromatic plants with organic solvents and steam distillation is widely used in industry. There is also large number of examples in the literature using gases in their critical state for such purposes. In this work we will present a method of extraction of Saturea Montana by using liquid CO2 near its critical point. The Soxhlet extraction using as solvent the liquid CO_2 was carried out in a laboratory autoclave under the vapor pressure of CO_2 in near critical temperatures. The plant, Saturea Montana, a local Albanian plant, was dried, grinded and extracted with liquid CO_2 at 65bar and 32^0C. The crude extract was than diluted in an appropriate solvent and its content was studied with TLC and GC. The identification of the volatile components was done by Mass Spectroscopy. We observed a good yield of extraction, 1.92%, and a wide range of organic substances were identified. The advantage of this method is that it allows having the crude extract free of solvent and preserving all the volatile components that could have been lost during solvent evaporation. This method showed that, for some

compounds, it was more selective than the traditional extraction methods like Soxhlet extraction with DCM or Hexan.
Keywords: Saturea Montana, CO2 extraction, GC-MS

088 MOSSES FROM LURA REGION

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Abstract: The bryophyte flora of Albania is not sufficiently known. The aim of this study is to investigate the moss flora from Lura region (Dibra district, Albania). During a field trip in August 2007 were collected *ca*. 150 samples in three different sites, one in Fushë Lurë, and the other two at the altitude of Lura lakes. In the last years *ca*. 190 moss specimens were identified from this collection. The results show 62 moss species recorded from Lura region. Among these species: fourteen species are confirmed for Dibra district and 48 species are recorded for the first time for Dibra district. Moreover, eight species are new for Albania: *Brachytheciastrum olympicum*, *Brachythecium geheebii*, *Dicranum brevifolium*, *Dicranum tauricum*, *Hedwigia ciliata* var. *leucophaea*, *Heterocladium dimorphum*, *Racomitrium elongatum* and *Schistidium papillosum*. Three taxa have conservation value according to the Red Data Book of European Bryophytes: *Brachythecium geheebii* (R, rare), which is also an endemic taxa for Europe, *Pseudoleskea saviana* (RT, regionally threatened) and *Schistidium papillosum* (K, insufficiently known). Therefore, Lura region shows relatively high and interesting moss diversity, taking into account the small number of collections and the small area investigated, as well. However, this study is just a preliminary investigation. Further exploration will certainly increase the number of species.
Keywords: Moss flora, Biodiversity, Lura, Dibra, Albania

089 EVALUATION OF HEAVY METALS DISTRIBUTION IN SEDIMENTS OF SHKODRA LAKE AND BUNA RIVER

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Abstract: The environmental status of Shkodra Lake and Buna River due to heavy metals contamination in sediments was investigated. Samples were collected in different stations of lake as well as along the river, beginning from its mouth toward the sea. All samples have been analyzed for major and trace elements (Fe, Mn, Cu, Pb, Cr, Zn, As, Ni and Cd) via atomic absorption spectroscopy technique. Geoaccumulation indexes and enrichment factors were calculated to assess the origin of heavy metals levels observed (natural or contaminated occurrence). Enrichment Factor (EF) values (EF<1) indicated that elements in the sediments studied originated predominantly from crustal material or terrigenous origin, except for Ni. All the samples resulted to be classified mostly in Class 0 or 1 (background concentrations or unpolluted) for all the metals, except for Ni and As, when using METRANAL^{TM}-1 certified reference material as background whereas only one station was classified in Class 2 (moderately polluted) regarding As.
Keywords: Surface Sediments, Heavy Metals, Geo-accumulation Index, Enrichment Factor; Buna River, Shkodra Lake.

090 AIR POLLUTION SURVEY OF TIRANA AREA, ALBANIA USING THE MOSS BAG BIOMONITORING TECHNIQUE

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Abstract: The aim of this survey is the monitoring of air pollution of Tirana area, Albania by means of

mosses. For the first time the atmospheric deposition of trace elements, by means of the biomonitoring technique associated with analytical techniques, were applied to study multielement atmospheric deposition in our country. Terrestrial mosses have several advantages as biomonitors: they lack a root system; variability of morphology through the growing season is small; they lack epidermis and cuticula; have a high surface to volume ratio; a high cation exchange capacity. Moss samples were collected in rural areas isolated from urban and industrial centers. Two different types of mosses, *Hypnum cupressiforme* and *Pseudoscleropodium purum*, were collected in two different places, respectively at Llogara (N40 01 50.3 E20 16 07.7) and Libohova (N40 01 50.3 E20 16 07.7) during September-October 2010. They were used as passive samples and the study was carried out at seven monitoring sites located in Tirana. Two different moss samples were exposed at each site for a period of five months. Heavy metals, such as Cu, Pb, Zn, Ni, Co, Cr, Mn, Fe, As and Cd were determined by flame AAS method and/or electrothermal system. CVAAS method was used for mercury determination. Using the data, statistical methods and a less polluted moss sample were used for background evaluation. Quality controll for the process of extraction and determination of elements was carried out by analysis of CRM. PCA and CLUSTER Analysis was used to identify the most polluted areas and to define different pollution sources.
Key words*:* air pollution survey, moss, passive sample, bio indicator, heavy metals, AAS method, PCA, CLUSTER Analysis

091 DIAGNOSIS AND SURVEY OF ALERGY CAUSED BY PARASITES IN ALBANIA

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Abstract
From gastro-intestinal parasites infected more than 3 billion people worldwide. Most of them is widespread in developing heterogeneous areas composed of migrant population. According to studies of recent years, only 10% of these populations are carriers of 70% of intestinal helminteve. One of the features associated with allergic diseases shaktuara by parasites, in general and increase the concentration of IgE immunoglobulin in serum of the patient. Because many immunoglobulins are closely associated with certain diseases, their use as diagnostic markers has been very successful. Frequency of cases in which the concentration of IgE immunoglobulin rise to various diseases is high allergic character. In the populations of industrialized countries in which the frequencies of parasitic infections are low, the action of IgE immunoglobulin faces high frequency reaction of the first type hypersensitivity. While in less developed countries dominated agrarian countries, parasitic infections are a major cause of increased concentrations of immunoglobulin IgE in serum. Through the coproscopic method were analyzed as biological materials, the feces of 300 children from 1 to 14 years, for the presence of protozoa's eggs, helminthes larva, trophosoids, cists, etc. We have taken the photo of the positive cases. The analysis have been done in the Parasitological Laboratory of the Institute of Public Health, Tirana through the method of concentration with floatation in sulphat zinc; the permanent color as Ziehln-Neelsen, Giemsa, Blu-metilen, etc.To determine the IgE are used the EIA kits. The level of the eosinophyle and IgE in the blood is performed in 76 individes who had been positive cases by helminths.
Key words: parasites, protozoa, allergy, immunoglobulin, ELISA, etj.

092 MILLIPEDS' DISTRIBUTION DEPENDING ON THE TYPE OF SOILS

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Abstract
There are some envirmonmental factors observed to have an impact on millipeds' distribution. Millipeds are very sensitive toward such conditions as temperature, sogginess, sea level height, soil type according to humus level and chemical components, even the soil's structure. In this study we give datas on these pedologic factors on the millipeds' distribution, according to the species and observed individuals' numbers. These datas are collected in 19 stations belonging to 8 area zones.There are known datas for each station, according to the type of soil, the structure, chemical components and humus levels. We have studied the chemical components and their impact on the soil types.The study is concentrated on the

different classes of diplopods. We have observed that these creatures are found almost everywhere. We have also noted that there is a related dependence between the soil's type and the creatures' distribution. Overall, the millipeds usually stay away from the sandy and limestone soils.
Keywords: environmental factors, millipeds, diplopods, pedologic factors.

093 STATISTICAL STUDY ABOUT THE CHRONIC OBSTRUCTIVE PULMONARY DISEASES OF SHKODER DURING 2000 - 2010

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ABSTRACT
In this article we consider the cases of Chronic Obstructive Pulmonary Diseases (COPD) in Shkoder, during 2000 – 2010. Also we have considered the hospitalized cases in the Regional Hospital of Shkoder. The morbidity and mortality of these diseases is studied according selected age - groups, gender and socio - demographic characteristics (place of residence: rural vs. urban areas). The data are taken from the Statistic Office of Hospital. The method is simple, analytic and descriptive and evidences the incidence of cases. From statistical analyses of the data were concluded that the number of morbidity and mortality is going to be high in the last decade and is linked with the changes in environment as the low air quality. The symptoms and diseases associated with air pollution are the same as the nononcogenic conditions commonly associated with cigarette smoking. In addition, respiratory illness in early childhood has been associated with chronic exposure to only modestly elevated levels of traffic-related gases and respirable particles. Recent population based studies comparing cities that have relatively high levels of particulate exposures with less polluted communities suggest excess morbidity and mortality from cardiore spiratory conditions in long term residents of the former communities. This finding, in part, has led to greater emphasis on publicizing pollution alert levels. One can only advise individuals with significant cardiopulmonary impairment to stay indoors during periods when pollution exceeds current standards. The levels of dust in Shkodra presented in this paper in microgram/m^3 which are higher than recommended levels of World Health Organization, WHO**.** The air quality connected with **t**ransport car, combustion of solid wastes and emission in environment air pollutants as : oxides of sulfur, nitrogen oxides, mono and carbon dioxide, hydrocarbons, lead, soot, dust and cancerogenic substances which are the main factors increasing the cases of Chronic Obstructive Pulmonary Disease in Shkoder**.** COPD is also a disease of increasing public health importance around the world. GOLD estimates suggest that COPD will rise from the sixth to the third most common cause of death worldwide by 2020. Some investigators have reported increased respiratory symptoms in those living in urban compared to rural areas, which may relate to increased pollution in the urban settings. With high rates of COPD reported in nonsmoking women in many developing countries, indoor air pollution, usually associated with cooking, has been suggested as a potential contributor. In most populations, ambient air pollution is a much less important risk factor for COPD than cigarette smoking. Although several specific occupational dusts and fumes are likely risk factors for COPD, the magnitude of these effects appears to be substantially less important than the effect of cigarette smoking.
Key words. chronic obstructive pulmonary disease, respiratory infection, morbidity and mortality, air quality

094 SHKUMBINI RIVER MANAGEMENT FOR LAND PROTECTION FROM FLOODING, EROSION, SALINISATION AND WATER QUALITY

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Abstract
Flooding of soils, erosion and Land-slide, salt accumulation in soil and waters of rivers, in relation to the management of rivers, are among the main problems of land degradation and development agricultural level in Albania. The object of study is Shkumbin River, which has a length of 181 km, watershed area of 2464 km^2 and the average altitude 753 m above sea level. From Elbasan, to River moth (in the Adriatic Sea), it characterized as a lowland river and directly influence on the soil formation, erosion, gully. Land-

slide salinisation, riverbank and coastal erosion, water quality, changes of biological production capacity of the land. The study was conducted throughout the length of the river and was concentrated on the segment from Elbasan to the river moth , the delta of the river and agricultural lands. Interpretation was used in this study, field and laboratory methods through soil mapping and soil classification study of agricultural land throughout the segment according to the FAO system and National System in 24 profiles, assessment of soil loss from erosion and salinisation by direct measurement and the application of the Soil Los Universal Equation, soil and water analysis. Were rated critical points and land area that flooded in the usual and in years with intense rainfall and in relation to method of use of gravel *and* river protection measures. From the analysis of soil samples, depending on the distance from the delta, resulting points that land contains many salted and salted law salted (in% dry residue) in the limits 0.1-1.5% and the waters has also sensitive differences. Considerable saline and abandoned surface can not be cultivated. The study gives the results of the level of erosion, soil and water salinisation, other indicators and recommendations for protection and rehabilitation plan, land improvement and agricultural practices, protection from flooding, erosion and management and protection of the river.
Key words: Management, floods, erosion, salinisation, quality water

095 DETERMINATION OF GROSS ALPHA BETA RADIOACTIVITY IN AIR SAMPLES OF TIRANA

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Abstract
The activity concentration of radionuclides in the air is a critical factor in assessing the air quality and the potential impact of possible pollutants. Air is in fact one of the main pathways for human exposure to pollutants. European directives require substantial efforts and resources to comply with the requirements and ensure a good air quality.In this study we present the results of activity measurements for some air filters collected in the city of Tirana. The air filters used are glass fiber P10. Air is collected with a low volume air sampler pump for a period of one week. Air filters are measured for gross alpha and gross beta radioactivity by a Ultra Low Level Alpha Beta gas proportional counter (MPC 9604, Protean Instrument Corporation) with Vista 2000 software. Each particulate filter is analyzed for gross alpha and gross beta radioactivity after waiting about four days for naturally-occurring daughter products of radon and thorium to decay. Air sampler averaged a flow of approximately 50 l/min. During a week period the filter will collect particulate material from approximately 500 m3 of air.All measured gross alpha and beta activities were within the expected range of background levels. It is important checking the trueness and precision of the analytical results produced by our laboratory. Hence, we have participated in a proficiency test organized by International Atomic Energy Agency (IAEA) for the determination of radionuclides in air filters. Results obtained in our laboratory were in good agreement with the reference values given by IAEA.
Key word: air filters, gross alpha beta radioactivity.

096 HYGIENIC-SANITARY EVALUATION OF THE DRINKING WATER PIPELINES IN THE CITY OF VLORA AND THE IMPACT ON COMMUNITY HEALTH

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Abstract: In the city of Vlora the production capacity of drinking water, is higher than the amount of water which reach's to the population. The drink-water pipeline is very old and amortized which led to drink-water losses and contamination of the drink-water causing gastro-intestinal disorders to the population.The methodology applied focused on observation and examination of the drink-water samples. Drink-water samples were taken in 22 different checkpoints in the period January-December 2010. The drink-water capacity of Vlora city is much higher than the capacity supplied to the population. The data collected from the drink-water supply Department shows that from 1 million m^3 drink-water only 560 thousand m^3 goes to the population which means that over 40% of the drink-water supplies leaks away

because of the outdated pipelines. From the 6908 drink-water samples taken in different location of the city, 171 of them or 2.5% results with microbiological contamination. During 2010, 6609 cases with gastro-intestinal disease caused by contaminated drink-water were registered in the public hospital.The outdated drink-water pipelines and the massive losses, makes that the drink-water supply capacity is much under the population demand on the other hand the leaks in different parts of the pipeline cause contamination of the drink-water on those area by increasing so the population vulnerability to disease.
Key words: drink-water pipeline, contamination, gastro-intestinal disease

097 DEVELOPING CLIMATE VINEYARDS IN THE AREA ISOTHERMS ACCORDING TO TIRANA

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Abstract: In this work are presented results of an analysis of space macroclimatic vineyards located in Tirana, in order to give local institutions operating an instrument to support the viticulture sector planning. Comprehensive scope of cultivation of vineyards in the region of Tirana can currently be estimated at 350 ha, from 10000 throughout Albania, more concentrated in the hilly area.Vineyards are mostly new, and their profitability has been controversial due to not adaptations of genetic material, the climate and soil. Department of Environmental Horticulture and conducted a major study using meteorological data, within a vineyard.These data are compared with results of quantitative and qualitative harvest is made in this period. The main conclusions are:Factors such as light, heat and running water together (positively) to significantly influence the quality of the product.Amount of heat (thermal constant from April to September) 3450 to 3680 ˚ C.];spring average temperature 11-12 ˚ C; average summer temperature 22-23 ˚ C; amount of rain not too large, 250-450 mm , smooth and mixed day 130-170 a year. Analysis consists bioclimogram of variety, classification, and assessment of areas with positive. Tirana constitutes Atlantic Mediterranean climate, annual average temp 15.2 0 C, the coldest month, January range (3.3 to 6.4 0 C), with the hot July (from 24.1 to 26.2 0 C), annual rainfall (994-1247mm). Isotherm on average 30 years of temperature, precipitation, and biological constants (Winkler, Huglin, Branas of Fregoni) conducted a study of the territory of Tirana macro zones, valid for any breeding program and agronomic Administration
Key words : Vineyards, bioclimograms , biological constants, macro zones, ecology

098 Main Impacts of Urbanization on Wetlands of Beysehir Lake

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Abstract
Mediterranean societies have traditionally been lived according as wetlands. Important civilizations have been founded in the wetland environs. Konya is a closed inside watershed in Turkiye, opens to Mediterranean via karst topography and dolins. Rapidly increasing urban population has brought number of environmental problems. One of the most important effects in these problems is increase of recreational and tourism actions. Wetlands as a fragile ecosystem parts needs to use natural resource the counterpoint, for example renew energy forms, air, water and natural reproduction. The conservation natural conservation legislation is also important to protect these areas, on the other hand local people and visitors for awareness of wetland values are needed to support. Beyşehir Lake Wetland is within Konya and Isparta Province. As well as geological, geomorphologic, archaeological, cultural, biological (flora, fauna, ecological structure), landscape and recreational resource values, Beyşehir Lake Wetland has national and international importance for a Class A wetland area. 88,750 hectares of Beyşehir Lake Wetland were declared as part of the National Park in 1993. This research aims to show the main impacts of

urbanization with using the socio-economic and environmental data. On the other hand it will explain the positive or negative change in the environmental elements (water, vegetation, landscape, wildlife and air qualities)
Keywords: Wetland, Urbanization, Konya, Beyşehir Lake Wetland,

099 Environmental level of Corum Stream Basin (Turkey)

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Abstract
Underground and surface water qualities are very important in Corum Stream Basin for drinking and usage water, suitability in auricular irrigation and industry. This region is in the relation area with population activity area and landfill region of the Corum city. Pollution measurements were being made with together measurements connection point to basin. Basin takes a large area in relation industry, settlement and agricultural area. Some agricultural areas were also irrigated with pollution contaminated water. On the other hand fertilizers and some pesticide was contaminated river basin during irrigation or after precipitation flood. Our measurements have shown that pollution in the river basin is considerable and most important pollution was coming from Corum Municipality Landfill leak. Landfill is not really under control by local authority. Heavy metal pollution is incredibly increasing in relation with organic pollution contend of working area.
Keywords: Corum Basin, Landfill, Pollution, River, Heavy Metal

100 Getting Drinking Water by Reverse Osmosis in Sea Water

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Abstract:
Though the 70% of the world surface is covered by water and only 3% of this water may be able to us for drinking or other activities. This water with this insufficient water was used often in our daily lives might not meet desired standards. Parallel to the rapid development and population rise, the water sources are getting lesser and being more polluted. The status of the water today requires that have to purify before consuming. In the mean time, water must be recycle or purify before getting rid to soil. These essentialities have caused rapid developments in water purifying technologies. Especially in the droughty areas, to satisfy the need of water and human have found some techniques to purify the salty water to make it drinkable. The most important one of these methods is Rivers Osmosis (RO) systems. This is something inevitable since global warming has such big affects on water. There is a curtain some applications for RO process which lets only water pass through electing the salt. Reverse osmosis a process has been applied for waters treatment in this study using different salt concentrations. Performance of system have calculated and compared with other methods.

***Key words*:** Salty, Reverse osmosis, Sea water, Water sources, Treatment

101 ESTIMATION OF WOODY AND GRASSLAND COVER VEGETATION USING IMAGE PROCESSING TECHNIQUES (Case from Kukësi, Albanian)

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Abstract

Numerous integrated image-processing programs are using in now days in order to estimate the changes in percentage cover vegetation ecosystems during the years. Combination of satellite images processing using Java Advanced Imaging API (JAI) with terrestrial checking of cover vegetation is one of the best ways that can increase quality of estimation. Three different satellite images in grassland, mixture and woody ecosystems are taken in analyses for estimation of cover vegetation in three different areas of Kukësi District, Albania. The digitized color photographs and satellite images were calculated from spectral by pixel values of red, green and blue band to calculate the percentage of cover and uncovered parts of photographed ecosystems. The analyzed images and cover vegetation will serve as a database for checking of the dynamics and changes in cover vegetation of Albanian grassland ecosystems.

Keywords: Image-processing, cover vegetation, ecosystem, grassland, dynamics

102 Evaluation of irrigation water quality across major water resources in Albania spanning a 5-year monitoring process

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Abstract
The objective of this study is to evaluate the quality of water for irrigation purposes from several water resources in Albania.
The study was administred in several rivers like Drini,Fan, Mat, Erzen, Shkumbin, Seman and Vjosa Rives and in several reservoirs including Tapize, Xhafzotaj, Thane and Kurjan.The study was realized during 2006-2010. The samples were collected in a one-week period every year (varying from June 1st to August 30th) and were analyzed in terms of parameters such as pH, tºC, TDS, EC, chemical parameters Ca2+, Mg2+, K+, Na+, Cl-, CO32-, HCO3-, SO42-, nutritional elements N-NO3, N-NH4, P and heavy metal presence Fe, Pb, Cr, Cu, Ni, Zn, Mn for Fan and Shkumbi rivers, (2010). The analytical results obtained were within the parameters set from the State Standard Catalogue and EU standards, with the exception of the Thana water basin. In this the presence of high EC and TDS values is attributed to the reduction in amount of water supply during the second half of August and to the high amount of Na and Cl-. However, the high amount of Ca and Mg and (Na++K+)/(Ca2+ + Mg2+) ratio at less than 1,5 does not permit expansion of irrigation into areas of sodic soils in the region, at least without reclamation measures. There were also relatively high concentrations of NO3-N, NH4-N and K+. The content of heavy metals in the Fani river follows this order: Cr>Pb>Ni>Fe>Cu>Mn>Zn. While the order for Shkumbini river is: Cr>Cu>Ni>Mn>Pb>Fe>Zn. Our results indicate that water irrigation resources of Albania, except for Thana, can be considered of good quality (class 2). Since these water resources find themselves continually threatened with urban, industrial and agricultural pollution, it is recommended reduce these pressures and to maintain a permanent monitoring program of their quality.
Key words: irrigation, pollution, resources, soils, parameters

103 EVALUATION OF CHLOROPHYLL AS A COMMON INDICATOR OF PHYTOPLANKTON BIOMASS

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ABSTRACT
The concentration of photosynthetic pigments is used extensively to estimate phytoplankton biomass. All green plants contain chlorophyll a, which constitutes approximately 1 to 2 % of the dry weight of plantonic algae. The important chlorophyll degradation products found in the aquatic environment are the chlorophillides, phephorbides and pheophytins. The presence or absence of the various photosynthetic pigments is used, among other features, to separate the major algal groups. Visible wavelength spectrophotometry is used to measure pigments in sub-parts per million (ppm) concentration. Trichromatic methods have been developed in order to determine the three types of chlorophyll (a, b, and c) in the absence of degradation products. The trichromatic equation of Jeffrey and Humphrey are used to calculate the concentrations of chl a, chl b and chl c. Monochromatic methods have been developed to correct chlorophyll a for pheopigment a. Modified monochromatic equation of Lorenzen are used to calculated pheopigments. It is assumed that acidification degrades all chlorophyll-like pigments into pheopigments by eliminating the magnesium ion from the tetrapyrrole complex. The pigments are extracted from the phytoplankton in 90% acetone. The aim of this study was optimization of spectrophotometric method for chlorophyll evaluation, considered the principal variable used as a trophic state indicator.

Keywords: chlorophyll, extraction, spectrophotometric methods, trophic state indicator.

104 SPECTROPHOTOMETRIC DETERMINATION OF PHENOLIC COMPOUNDS IN SURFACE WATER

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ABSTRACT
The levels of phenol and phenolic compounds give an indication of the presence of pollution from industrial sources such as petroleum products and insecticide, herbicide, fungicide and pesticide residues. The presence, even in concentration of 1 ppb, of some phenols in drinking water supplies may lead, on chlorination, to the formation of objectionably tasting and odoriferous chlorophenols. A spectrophotometric method for the determination of phenol in tap water or ground water samples was developed. The method is based on the oxidative coupling of phenols with 4-aminoantipyrine (4AAP) in alkaline solution in the presence of potassium ferricyanide. The linear dynamic range is 0.1 – 6.0 mg l^{-1}. The optimum determination wavelength is at 506 nm. The relative standard deviation of the standard solution of phenol is 1.5 % (n = 6, C = 1 mg l^{-1}).
Key words: Phenol, spectrophotometric method, tap water

105 RAPID ASSESSMENT OF THE STATE OF MACROZOOBENTHIC COMMUNITY OF DEVOLLI RIVER

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Abstract
A rapid assessment of macrozoobenthic community of Devolli River has been carried out, based on two

field surveys, one in November 2009 and the other in May 2010. Samples were taken in 11 sites along the river bed and main tributaries. The total number of taxa and abundance of each taxa in each sample were assessed. Shannon and Weaver Index was calculated for each sampling site. A classification of taxa based on the constancy value has been done. The presence of pollution sensitive and pollution tolerant taxa has been evaluated. EPT index and MGBI index were calculated and the environmental state of each site was classified after the standard classifications related to these benthic indices. The predominant group in the macrozoobenthos were insects, followed by gastropods, oligochaetes, leeches, amphipods and acarines. A better state of macrozoobenthic community has resulted in the upstream and its tributaries. In a general evaluation, Devolli can be considered as a slightly impacted river. A better environmental state has been recorded in spring season in almost all aspects. Although the majority of the river is classified as slightly impacted, the low taxa number and abundance of benthic macroinvertebrates show an unfavorable situation of their guild in this river. Erosion, deforestation, gravel mining, high oscillations of the water level, flooding and pollution may be considered as the main factors affecting the state of macrozoobenthic community in Devolli River.
Key words: Devolli River, macrozoobenthos, benthic indices, environmental state assessment.

106 The Importance and Uses variation of Jerusalem artichoke (*Helianthus tuberosus* L.)

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Abstract
Jerusalem artichoke can be grown all over in different climatic and soil properties because of compliance is adequate rainfall or irrigation. Jerusalem artichoke can growth with vegetative parts and may growth in the same growing area and can be taken product in many years. For this reason, it is easy to growth and takes less cost. Jerusalem artichoke agriculture is ease well and it is not selective for soil and water. Usage Jerusalem artichoke is also very diverse. Mainly used for human and animal nutrition, it also used for production of bio-fuels, in addition to the production of inulin obtained from tubers in medicine, industry, starch, alcohol, glue production and so on. It also used as the construction ornamental plant. Both tuber and aerial parts of Jerusalem artichoke plants may be used for nutrition.
Keywords: Jerusalem artichoke, *Helianthus tuberosus* L., inulin, bio-fuels, tuber

107 Kinetic and thermodynamic studies of the biosorption of Cu(II) by *Agaricus campestris*

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Abstract: *Agaricus campestris* was used as an adsorbent for the adsorption of Cu(II) ions in water. The adsorption process was carried out in a batch process and the effects of contact time, initial pH, initial Cu(II) ion concentration, adsorbent amount and temperature on the adsorption were investigated. Kinetic calculation results from the present experiments showed that the amount of adsorbed Cu(II) increased with increasing Cu(II) concentration, pH, temperature, contact time and with decreasing adsorbent amount. Pseudo-second-order reaction model provided the best description of the data with a correlation coefficient 0.99-1 for different initial metal concentrations and temperatures were studied. The equilibrium data were well fitted to the Langmuir isotherm. The maximum adsorption capacity for Cu (II) was 32.52 mg g^{-1} at 298 ^{o}K. Thermodynamic parameters such as ΔH^{o}, ΔS^{o} and ΔG^{o} were calculated. The adsorption process was found to be endothermic and spontaneous.
Keywords: Cu(II) ions; *Agaricus campestris*; Adsorption kinetics; Isotherm

108 ON THE PRESENCE, CONSERVATION STATUS AND DISTRIBUTION OF THE OTTER (*Lutra lutra*) IN THE SEMANI RIVER WATERSHED

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Abstract
A study on the presence, distribution and conservation status of the otter (*Lutra lutra*) in the Semani river watershed, including Devolli and Osumi rivers and their main tributaries has been conducted during 2009-2011. River sections of upper, middle and lower Devolli, Osumi and Semani, their main tributaries of Devolli, (Perroi i Malesise, Dusharit, Graboves, Verces, Tomorrices, Holtes), Gjanica as well as a number of lakes and water reservoirs included in the watershed of Semani river have been surveyed. Data on the presence and territorial marking intensity have been collected and assessed. Changes in the distribution patterns of the otter by seasons and water level fluctuations in the main rivers have been reported. Otter is present in Devolli and Osumi river, and lower sections of their main tributaries, although in low abundance. It is not present nearby the main urban areas such as Gramsh, Çorovode and Berat. Surprisingly, otter is present, although in very low abundance in most of Semani river, expect for 3-4 km downstream of confluence of Semani with Gjanica river. Gjanica river has no signs of otter presence, due to long time impacts of oil industry in the river biota. Otter is also present in some water reservoirs included in the Semani river watershed, showing its opportunistic behaviour and adaptation strategies to survice in a very dynamic and challenging environment.
Key words: Semani River watershed, otter, conservation status and distribution.

109 NATURAL VENTILATION FOR LIVESTOCK HOUSING IN HOT ARID REGION

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Abstract
Natural ventilation systems are becoming more popular because they require less energy, and they have lower maintenance requirements. But, they provide a quiet arguably less stressful environment for animals. In this study, to explain natural ventilation systems in the livestock housing, planning criterions, problems and solutions about the application of natural ventilation system in hot arid region was aimed. Natural ventilation systems are used widespread in livestock housing. It is possible that increasing the production performance of animals by decreasing the impact of climatic stress factors. The most important method is ventilation to remove climatic stress in hot arid areas. However, it is not easy to apply natural ventilation in the areas. Establishment of appropriate environmental conditions for animals and to increase the efficiency of the natural ventilation system depends on planning. It is required to create the pressure difference depending on temperature differences or wind that fresh air is entering into the building and the dirty air going out it. The air outlet openings and roof slope should carefully be planned to reducing the radiation load on the roofs of semi-open housing system in hot arid region.
Keywords: Climatic stress, hot arid region, livestock housing, natural ventilation.

110 FLORAL AND ICHTHYOLOGICAL RESEARCHES ALONG THE FLOW OF RIVER CRNA

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Abstract
In this paper are presented floral and ichthyological researches along the flow of river Crna **(**Black River).River Crna is river in the Republic of Macedonia and is the largest right tributary of the River Vardar**.** Its length is 207 km. The source of the River Crna, Crna Dupka **(B**lack Hole) is in the mountains of western Macedonia, near the village Zeleznec at an altitude of 760 m**.** From source to its estuary in the river Vardar, River Crna passes through several municipalities. It is the main recipient of sewage and industrial waste waters from many settlements**.**The researches were performed in the course of summer

period of 2009 from more localities along flow of river Crna, respectively from the source (in village Zeleznec) to village Topolcani. According to our researches in this river ecosystem were evidenced total of 22 different plant species, and 14 different fish species.The obtained results show that the qualitative composition of flora and ichtyofauna in river Crna is diverse and depends of different ecological conditions along the flow of the River.
Key words: River Crna, researches, flora, ichtyofauna,

111 Micronuclei induction in *Ranidae & Buffonidae* tadpoles by the pyrethroid insecticide lambda-cyhalothrin

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Abstract
Pyrethroid lambda-cyhalothrin genotoxicity was evaluated using the micronucleus test in *Ranidae & Buffonidae* tadpoles. The effects of concentration and exposure time on the micronuclei frequency were studied in blood smears obtained from tadpoles exposed to four concentrations (0.02, 0.1, 0.2 and 0.4 µg/L) of the compound for 24, 48, 72 and 96 h and 8, 15, 20 and 30 days. As a positive control, tadpoles were exposed to cyclophosphamide (5 mg/L). The micronucleated cell frequency was expressed per 1,000 cells. *Ranidae & Buffonidae* tadpoles exposed to increasing concentrations of lambda-cyhalothrin showed an increase in the micronuclei frequency in peripheral blood. Tadpoles exposed to cyclophosphamide (CP) also showed a significant increase in micronucleated erythrocytes which peaked after 15 days. These results suggest that *Ranidae & Buffonidae* tadpoles may provide a useful model for monitoring water pollution.
Key words*:* genotoxicity, micronucleus test, lambda-cyhalothrin, tadpoles.

112 Reuse of domestic wastewater for irrigation in Turkey

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Abstract
Domestic wastewater management has been an important issue for governments with respect of economics and pollution control. Every day big amounts of wastewater has been produced and therefore, treatment processes have gained increased attention to reach discharge limits. Alternative disposal methods of treated wastewater are reuse of wastewater for irrigation, process water in industry or feeding of deep well. However, treated wastewater for irrigation should provide some physical, chemical and microbiological standards. Turkey ministry of environment has some regulations and standards for irrigation with treated wastewater. This study focused on the environmental regulations about this issue.
Keywords: Reuse, domestic wastewater, irrigation, regulation

113 THE INFLUENCE OF CHLORORGANICS COMPOUNDS IN PARKS OF BEES IN ALBANIA.

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Abstract
This article included the influence of residue chlororganics compounds effects in parks of bees about military zone in Albania.The chlororgnics compounds used since '1930 as like as DDT component. The residues of chlororganics compounds included PCB that used in some sectors such as industry, agriculture, zooculture, veterinary and military in same biosfere (George et al., 1966; Keith, 1966, Hattula et al., 1978).The chlororgnics compounds bioacumulated in soil and aquatic enviroment (sediment, ëater, invertebrate, vertebrate). The chlororgnics compounds accumulated in adipose tissues in vertebrates and in chitinose tissues in invertebrates (arthropodes and bees). Some izomers such as PCB, TCDD, DDE, DDD, HCB accumulated in biologically tissues as like a chitin tissues that included as residue in honey products. These residues influenced in chitin synthesis and reproduction sphere in bees. (George et al., 1966; Keith, 1966, Hattula et al., 1978).We taken 30 bee samples from parks that included near military zone which stored chlororganics compounds as like as Polican, (Skrapar), Bodar,(Përmet), Linzë,(Tiranë) districts.We analyzed 30 bees for each honeybee from 10 honeybees for each park. We used GC (Gas Chromatography Methods) to evaluate the levels of chlororganics residue in bees. The analyses realized in Wild Surveillance Albania Lab that knew as reference lab. The results showed that only park as like as Bodar, Permet's district content low levels for chlororgnics compounds.
Key words: chlororganics, bee, GC methods

114 The infrastructure development of the hydrocarbon market in Albania during last decade, its prespectives

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Abstract
The economical growing during the last decade of the 20th century, and the first decade of the 21st, was characterised by high demands for fossil fuels, like oil by-products both as energetic source as well as raw material in many in industrial branches like: transport, construction industry, agriculture, plastic industry etc. The demands of the economy with oil by-products are fulfilled through the import and domestic production. Actually the domestic production of oil-by-products contributes with is 40 %, hence it contributes not only in stabilizing the market demands, as well as having a direct role in the oil prize control. Oil by-products have contributed in the final consumption balance from 48% in 1995 until 63.1% in 2005 and finally to 64 % (1.104 million tonnes) in 2008.Increase of the demands for oil products, fossil fuels and lubricants is accompanied by the enlargement of the stockade infrastructure, processing, and distribution. Actually in the domestic market operate 134 gross distributors and 1010 retail operators.The aim of this study is to present in general the key figures that have served as milestone for that market, to give evidence on the infrastructure, different operators and the trends of the hydrocarbon market in Albania as mode to give some forecast in the future for that area.
Keywords: crude oil, oil by-products, combustible oil, energy, oil market

115 ICHTHYOLOGICAL AND FLORAL RESEARCHES IN ARTIFICAL LAKE SLATINO (R.MACEDONIA)

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ABSTRACT
In this paper are presented ichthyological and floral researches in artificial lake Slatino in Republic of Macedonia. Artificial lake Slatino is situated in the watershed of Lake Ohrid, about 40 km north of town Ohrid, in region Debrca. This lake was build with septum of River Mramorecka with dam with length of 100 m and height of 15.5m. Because of sanction of the dam, lake was emptied in autumn 1993, and then again filled in the spring 1994. This artificial lake lie at altitude of 829.5 m, has a maximum depth of 9.2 m (average depth 5 m) and cover surface area of 0.28 km2.The researches were performed in the course of spring-summer period of 2009. For the collection of materials were used standard lymnological methods.According to our researches in artificial lake Slatino were evidenced total of 18 different plant species, and 12 different fish species.The obtained results show that the qualitative composition of ichtyofauna and flora in artifical lake Slatino is diverse and depends of different ecological conditions

along the shore of lake.
Key words: artifical lake, Slatino, researches, ichtyofauna, flora,

116 EVALUATION FOR SAFE DRINKING WATER: AN EXAMOLE FROM ORDU PROVINCE IN MIDDLE BLACK SEA REGION, TURKEY

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Abstract
The main sources drinking water in Turkey include surface waters. Water provides essential elements but when polluted it may become the source of unsiderable substances dangerous to human health. Managing the provision of safe drinking water has a renewed focus in light of the new World Health Organization (WHO) water safety plans. Protecting source water using watershed management strategies can help communities reduce the threat of drinking water pollution. However, small communities face financial, human resource, institutional, social, and technical challenges that test their ability to protect drinking water supplies. The study presents an assessment of the water quality in Ordu Province based on the physicochemical investigations carried out in spring and summer seasons. Here we describe the water quality of four spring based on measurement of 15 different parameters.
Keywords: Spring water; Drinking water quality; Physicochemical parameters

117 COMPARISON OF LEACHING TESTS TO EVALUATE METAL MOBILITY IN ZINC GALVANIC WASTES

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Abstract
Waste disposals in landfills are a potential source of contamination for surface and subsurface waters, air and soil since heavy metals can migrate into soil and vegetation. National regulations are reinforcing environmental protection, thus rendering the development of recycling technologies necessary and convenient. Galvanic waste is a result of liquid effluent treatment from the metal finishing industry and contains high content of zinc that is considered a potentially eco-toxic residue. The aim of the present study was to investigate the metal leaching behaviour of galvanic wastes. Samples were subjected to toxicity tests such as, the Toxicity Characteristic Leaching Procedure (TCLP), the Synthetic Precipitation Leaching Procedure (SPLP) and the Leachate Extraction Procedure (LEP). The leaching tests showed that the content of some elements in the waste exceeded the regulatory limits and cannot be disposed of in the present form. Therefore a stabilization treatment is necessary prior to disposal.
Keywords: Galvanic waste, zinc, metal leachability

118 BACTERIOLOGICAL WATER QUALITY OF SURFACE SPRINGS AROUND LAKE OHRID

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Abstract
The ancient Lake Ohrid is an oligotrophic, cold oligomictic, calcareous, graben, mark lake, mostly fed with spring water from the numerous sublacustrine and coastal sources. Besides tributaries, the main input comes from the numerous karstic springs around the lake. The bacteriological quality of spring waters

around Lake Ohrid were evaluated. Samples were collected from 8 natural springs (St. Naum, St. Petka, St. Bogorodica, Korita, Elsani, Biljanini, Hydrobioloski and Kalista springs) and analysed for total coliforms, enterococcus bacteria, *Escherichia coli*, *Clostridium perfringens* and parameters of ecological aspect (heterotrophic, proteolytic, amilolytic, lipolytic and phosphorusmineralizing bacteria). Standard methods were used, with general and selective nutrient media and membrane filter method.Based on results, received from the bacteriological analyses of surface springs around the Lake, in general, from ecological aspect, we can conclude that all the investigated parameters have values characteristic for pure spring water. This state is a result of a low biodegradable organic matter concentrations. The total bacterial counts (heterotrophs) ranged from 18 to 612 bact.ml^{-1}. The values obtained for bacteria which mineralize organic matter of protein, sugar or fat origin are small or insignificant. Also, phosphorusmineralising bacteria suggests a small concentrations of phosphorus. The coliform organisms, although in small amounts, were present almost in all springs. Enterococci and *E. coli* occur occasionally after rainy periods. Three springs were heavily contaminated. Bazed on criteria which used the ratio of faecal coliform to faecal streptococci, all springs studied may be contamined with human and animal wastes. It is concluded that the spring waters studied are unsuitable for human consumption unless disinfected.

Keywords: surface springs, Lake Ohrid, water quality, bacteria,

119 Strategies for conserving Biodiversity in USA

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Abstract

In ecology, the term conservation is used to describe the wise management of natural resources, including preservation of habitats and wildlife. The modern science of conservation biology seeks to protect biodiversity. Many conservation efforts are aimed at managing individual species to kip them from becoming extinct. Some zoos, have established captive breeding programs, in which young animals are raised in protected surrounding until the population is stable. Then are later returned to the wild. This strategy has successes with a few species, including the black-footed ferret. Today, conservation efforts focus on protecting entire ecosystems as well as single species. protecting an ecosystems will ensure that the natural habitats and the interactions of many different species are preserved at the same time. The United States has an extensive system of national parks, forests, and other protected areas. Few of these, however, were designed with ecological principles in mind. As result, these areas many not be large enough, or contain the right resources, to protect biodiversity. The conservation history in USA start 1854 with Henry David Thoreau, which recommends the preservation of wildlife. Yellow stone becomes the world's first national park at 1872. In 1900 was the first major national conservation law by the U.S Congress, So we have many conservation biologist which are focusing on "biodiversity hot spot" where the biodiversity of these unique ecosystems is threatened. By focusing on protecting specific ecosystems, biologist hope to preserve global biodiversity.

Keyword: ecology, ecosystem, preservation, conservation, biodiversity, global biodiversity, natural habitats,

120 ECOLOGICAL DATA ON THE SOIL FAUNA IN RIVER SIDEBEDS, AS BIOINDICATOR OF IMPACTS OF OIL POLLUTION LEVEL ALONG GJANICA RIVER

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Abstract
This study on the assessment of the impact of oil pollution in Gjanica river, aimed at using soil mesofauna as bio-indicator for the evaluation pollution impact in river ecosystems. It is undertaken in the period 2009-2010, along 45 km of Gjanica river, as one of the most polluted river ecosystems in Albania. There are four sampling stations established based on different criteria such as the distance and position to pollution discharge sources, typology of the riverbed, etc. In order to compare the cumulative effect of the residue oil pollution, at each station, sampling is made in 5m, 10m, and 15m off the water stream Data on the first station (Aranitas) shows clear evidence of higher abundance on the main bioindicator groups such as *Colembola, Acarina* and *Coleoptera*. Some of the groups show clear decreasing tendency towards the downstream stations such (Lapulec, Oficine and Kraps). In addition, there is clear evidence about the stronger effect of the impact of pollution as well as the other abiotic ecological factors on all soil mesofauna groups at the closest distance to the water stream (5m) compared to the farest measured distance (15m). In addition, some groups such as Insects larva appears to be more sensitive at the most polluted stations. The data on soil fauna groups at different stations are compared to chemical analyses of river water on presence of hydrocarbons.
Key words: Gjanica River, soil mesofauna, oil pollution, bioindicator.

121 Is agriculture and tourism complimentary anymore ? A field study from albanian coastal area.

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Abstract
The role of tourism on the development of the rural economy and its diversification now well studied on the economy literature. All this studies mention that the tourism is and important tool that can be used to improve the economic results of farms on the rural area. All this studies, seems to have different results with the scientific literature of ’80 and ’90 that show the destructive effects of tourism development on the agriculture sector with the agricultural land urbanization, concurrence on natural resources use (water).The following study is a long term one that tends to show the change of the farm strategies on the coastal area of Albania. The study s undertaken on two villages of the central western part of Albania, and there are analyzed the strategies of farm for a period of ten years 2001-2011.The methodology of the study is based on the farm strategies study and the changes that these strategies have had during this period. There are analyzed more than 30 farms on two villages and we have applied a questionnaire on different period of times (i.e. each 3 years) to see the change of farm strategies on the area. Taking into consideration that the main tourism type on the area is a coastal one, we see that the agriculture, at the beginning is the main economic activity of the farms, after that it serves as a complimentary for the tourism offer of the area and at the and, it disappears form the farms that now is changed in a completely or quasi completely in a service unit for the tourist of the area.
Key words: Agriculture, Tourism, Farm strategies, Coastal area, Albania

122 VERTICAL DISTRIBUTION AND SEASONAL CHANGES OF MICROBIAL COMMUNITY IN THE LAKE OHRID PELAGIC REGION

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Abstract
The aim of the study was to determine vertical distribution, seasonal changes in the number of bacterioplankton and its qualitative composition in the waters of Lake Ohrid pelagic region. Samples were collected in a vertical profile (surface and depths of 10m, 20m, 30m, 40m, 50m, 75m, 100m, 150m, 200m, 250m and 275m) from the pelagic zone of Lake Ohrid during 2007-2008. In the Lake Ohrid pelagic region the maximal counts of bacteria were found in the trophogenic zone, in summer, and in the zone near the bottom, probably reflecting the accumulation of particulate organic matter, and concentration of soluble organic substrates excreted by phytoplankton. Generally, the lake is in the category of clean

waters with a domination of oligotrophic bacteria. According to the received results for saprophytic bacteria, the pelagic water of Lake Ohrid is still of I class (oligotrophic).As for representation of physiological groups of bacteria, the general conclusion is that all groups have very similar seasonal dynamics and relatively low abundance. It is a common characteristic of all investigated physiologicalgroups of bacteria: proteolytic, amilolytic, lypolytic, phspho-mineralizing, phosphor-mobilizing, nitrogen-fixing and cellulolytic bacteria, that they exhibited two development maxima in the summer to fall (when decomposition of dead plankton occurs) and a minimum in the winter-spring period. Organic phosphorus-mineralizing bacteria are much more abundant than phosphor-mobilizing bacteria. However their number in the pelagial region is small and insignificant, as the lake is oligotrophic and relatively low quantities of the phosphorus containing matter.Anyhow, obtained results indicate that Lake Ohrid is a biologically controlled ecosystem of oligotrophic character.

Key words: Lake Ohrid, pelagic region, proteolytic, amilolytic, lypolytic, phspho-mineralizing, phospho-mobilizing, nitrogen-fixing, cellulolytic bacteria

123 MITIGATING CLIMATE CHANGE THROUGH UTILIZATION OF BIOMASS IN THE AGRICULTURAL SECTOR OF THE REPUBLIC OF MACEDONIA

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Abstract
Forest and agricultural biomass represents great energy potential in the Republic of Macedonia. It is creating each year as naturally renewable source which is found in significant quantities. Utilization of biomass, as source of energy, will contribute for sustainable development of rural areas in the country. The aim of this study is to identify the ways of utilization of biomass in agriculture, concerning the need to promote their benefits in rural areas in the country and to compare to the latest achievements in the World. This study will include the potential for agricultural and forestry biomass and its utilization in the Republic of Macedonia. This is a key role for mitigating climate changes and reducing greenhouse gas emissions. Therefore, using biomass will contribute for sustainable development, green jobs employment and production efficiency in the agricultural sector in rural areas.

Keywords: Agriculture, Climate changes, Green jobs, Production efficiency, Sustainable development, Utilization of biomass.

124 ELECTROMAGNETIC POLLUTION IN AREAS OF DAIRY CATTLE COMPANIES IN KONYA-TURKEY

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Abstract
In today's World, electromagnetic pollution is more and more along with fast development of technology, augmentation of uses of internet, mobile phones, and in communication. It is incontrovertible that electromagnetic pollution has negative effect on human health such as tiredness feeling, forgetfulness, and increase in brain tumour risk especially at long mobile phone calls. As it has very much negative effect on human, it is of importance for other living beings.
This study was carried out in Konya to investigate electromagnetic pollution levels in areas of dairy cattle barns, and also its risk level. Electromagnetic pollution levels were determined in the areas by drawing maps of dairy cattle housings in the region.

It can be concluded that holding electromagnetic pollution in low values is very significant for health of living beings and animal productivity.

Key words: Electromagnetic pollution, dairy cattle housing, environmental pollution.

125 EXPLOITATION OFALPECHINE PROPERTIES THROUGH THE SOIL EVALUATING POSSIBILITIES OF THEIR IMPACT ON INFILTRATION WATERS

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Abstract
The purpose of this study is to evaluate the likelihood of pollution on infiltration waters that derive from the application of the various dosages of the alpechine in soils showing a number of various characteristics. The study has been conducted in lisimetric columns in samples of soils boasting various characteristic. In a periodical period there have been reported applications in soils of various alpechine from 30, 180 to360 m3/ha/year alternating with water by stimulating 8 yearly cycles. The flows have been analyzed by determining the pH, CE, DQO, phenols, nitrates, nitrites, potassium, and the indicators of germination rate of *Lactuca sativa* culture. The results obtained have demonstrated that the *alpechine* dosages of 30 m^3/Ha/year do not cause substantial changes in the parameters which have been the focus of the study. The dosages ranging between 180 and 360 might trigger both water and soil pollution as shown by the values CE_{25}, DQO and the phenols which are subject to the dosage usage and the number of applications.
Key words: alpechine, water pollution, fertilization of soils and phenols.

126 CYCLIC AND SEQUENTIAL WATER BALANCE: ESTIMATION OF THE AVAILABLE SOIL WATER STORAGE

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Abstract: The objective of the study is to present a mechanistic model to estimate the amount of water on earth, in order to maintain agricultural productivity for crops one year, nonphotosensitive to light. Movement and retention of water in an agricultural system are attributes of interest in this study. Agricultural productivity depends on the basic processes of photosynthesis and respiration. Productivity also depends on the vegetable species, plant food, energy available, the number of plants, damaged and mainly the number of parasites. Evapotranspiration current also depends on the same attributes and processes. Therefore, the basic assumption of the model is whether it is possible to evaluate performance by assessing evapotranspirimin. Recognizing the empirical behavior of water loss on the ground without knowing all attributes and manages complex rrelacionet, cosine model is proposed to estimate the amount of the land uit. Cosine model is compared with other models and has reached the conclusion that this model better estimates the amount of water on earth.
Key words: Water balances, soil water, storage, modeling

127 DRAINAGE SALINITY-ALKALINITY PROBLEMS IN CULTIVATED LANDS OF KONYA PROVINCE (TURKEY) AND SOLUTION SUGGESTIONS

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Abstract: Soil and water are resources for agricultural land and human life. Efficient use of these resources is an important issue for sustainable cultivation. This study was investigated to determine areas

of drainage, salinity and alkalinity by using data obtained from different government organizations from past to present in Konya province (Turkey). The research was based on records obtained in different years (1968, 1978, 1985, 2003). The findings were evaluated with each others by considering record years. However, all problematic areas within arable lands and some improved lands in those problematic lands for Konya were shown in maps.The results showed that especially studies related to the salinity, alkalinity and drainage were conducted in 1978 and 1985 years. The current problematic areas of drainage and salinity-alkalinity, are 120.435 ha, 266.624 ha, respectively. In addition, improvement studies were not conducted after 1985. Consequently, solution of these problems in cultivated land may be possible with conscious irrigation which is suitable for irrigation projects by analyzing water resource, irrigation water quality, and soil properties and evaluating plant properties.
Keywords: Saline-alkaline soils, drainage, irrigation, sustainable cultivation.

128 STONINESS AND EROSION PROBLEMS IN CULTIVATED LANDS OF KONYA PROVINCE (TURKEY) AND SOLUTION SUGGESTIONS

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Abstract
Soil and water are vital resources for agricultural land and human life. Productive utilizing of these sources is an important topic for sustainable cultivation. This study was investigated to determine areas of stoniness and erosion problems by using data obtained from different government organizations from past to present in Konya province (Turkey).The study was based on records obtained in different years (1968, 1978, 1985, 2003). The findings were evaluated with each other by considering record years. However, all problematic areas within arable lands and some improved lands in those problematic lands for Konya were shown in maps.The current problem areas of stoniness, water-wind erosion are 915.584 ha, 2.804.633 ha, respectively. In addition, improvement studies were not conducted after 1985. Consequently, solution of these problems in cultivated land may be possible when we use suitable techniques of soil cultivation by improving soil against stoniness and erosion problems and pay attention to forestation.
Keywords: Stoniness, water erosion, wind erosion, sustainable cultivation.

129 AIR MASS TRANSPORT AND PRECIPITATION CHEMICAL COMPOSITION IN SOUTH-WEST BULGARIA

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Abstract
The purpose of the investigation is to determine the dependency between the precipitations' chemical composition and the origin and trajectory of the precipitating air masses. The local and advective components of precipitation pollution are illustrated through four types of precipitation situations. The contribution of local pollution to the precipitation's composition is assessed through air quality analysis before and after the precipitation. The present work investigates the chemical composition of precipitations in Bulgaria under three types of general atmospheric circulation – WZ, SWA, and NZ according to the classification of Hess and Brezowsky and Mediterranean cyclones. A relationship between the precipitations' chemical composition and the path of the cloud systems was studied. The presence of the main anthropogenic ions in the air leading to precipitation acidity was investigated. The influence of trans-boundary factors is determined analysing the simultaneous precipitations from the same cloud systems in urban arias and the background regions. The pollution sources in South-West Bulgaria have not been investigated vis-à-vis precipitation chemical composition till now. Nor have there been comparisons between precipitations' chemical composition in urban areas and background stations. The contribution of trans-boundary transport on the precipitation composition has not been differentiated.
Key words: precipitation chemistry, trans-boundary transport of pollutants, atmospheric circulation

130 SYSTEM FOR SAMPLING OF PRECIPITATION COMPOSITION – SENSITIVITY CONTROLLER FOR RAIN SENSOR OF TYPE "YES/NO"

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Abstract
Modern studies of precipitations' ecological status include the long chain from obtainment, transport and storage of samples, through their chemical analysis to mathematical data processing and their use in physical models for diagnosis and prognosis of air pollution. The quality of information is rooted mostly in correct sampling - the only stage that cannot be corrected at identifying an error. The creation of a device for collecting precipitation samples for chemical analysis, which opens at the beginning of precipitation and closes at its end, is a serious challenge to science and technology in the second half of the 20th century. Regardless of its complexity, all equipment of this type contains two obligatory components - rain sensor of "yes/no" type and a mechanism for opening and closing the lid. The sensor is the part that needs to recognize the beginning and end of precipitation. The aim is to open the lid as soon as possible after the onset of precipitation in order to collect the first drops, which are expected to be the most contaminated, and close it after the last drops have fallen.
The aim of this work is to create a controller for the input/output signals of a binary precipitation sensor.
Key words: precipitation sensor of type "yes/no", binary controller, diagnostic signal.

131 IMPACT OF ATMOSPHERIC PRECIPITAIONS ON THE SURFACE WATER CHEMISTRY IN MOUNTAIN AREA

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Abstract
The aim of this study is to establish the degree of impact of precipitations' chemical composition on the chemical composition of high-mountain (over 2000 m a.s.l.) rivers with snow-rain feeding. The contribution of the hard and liquid rain to surface water composition is investigated individually. The surface water quality in the environs of Mount Cherni Vruh - Vitosha Mountain, Bulgaria – is determined. A temporary local monitoring network for surface water quality was established in the examined period (2004-2010). Precipitation samples are taken on Mount of Cherni Vruh – one of the stations of the precipitation chemistry network. The findings present the background levels of the studied hydrochemical parameters for surface water. The predominant anions in river water are hydrocarbonates and sulphates while the predominant cations are calcium and sodium. The measured pH values suggest the pure precipitation's influence on river water in terms of acidity. It is perceivable that the majority of the nitrate concentrations in river water originate in the precipitations.
Key words: surface water quality, precipitation chemistry, background surface water

132 THE SOCIO– ECONOMIC ASSESSMENT OF NATURAL RESOURCES DEVELOPMENT PROJECT

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Abstract
This article is a short presentation of the study Socio–Economic Assessment of Natural Resources Development Project. The Natural Resources Development Project (NRDP) is being implemented since 2005 in the mountainous and hilly areas of the country with its primary objective to support the participation of communities in project activities and benefiting from its implementation in order to adopt sustainable governmental practices of natural resources, such practices which would lead to an increase of production and incomes, reduce the rate of degradation, improve water quality and ecosystems conservation considered of major importance. Its primary objective is to assess the socio-economic impacts of project activities, first on the agricultural households and then on communities living in areas where the project operates. Assessment of economic impacts includes an evaluation of communities' income resources and the role of natural resources in their daily lives, by differentiating between the impacts that arise directly from the employment benefits of their members in project activities and impact of implementation governmental and sustainable practices in generating additional income for the community.
The survey area includes the entire geographic coverage of project implementation, where the geographic sampling selection includes 20 communes as surveyed. The assessment aims to accomplish an analysis of the sustainability of adopted practices through a sustainable management of resources in terms of their recognition by communities, active participation in designing of management plans, and opportunities to get incomes by the using of these resources.
Key words: socio-economic assessment, natural resources, incomes, sustainability, community participation, management plans, implementation.

133 Turkish Wetland Problems: A Case Study Egirdir Lake Sample

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Abstract:
Wetlands had been threatened by increase of temperature due to global warming and not proper usage of them these causing health problems both for human and aquatic environment. Therefore new studies have been forced in the rehabilitation and sustainable usage of water sources recently in the world. Turkey lies in a transitional region between the Asia and Europe continents. Turkey is the richest country for wetland area in Europe and Mideast after following the Russia. There are 135 wetlands in criteria of Ramsar. On the other hand, from 1950's many of wetland were lost in Turkey, Basic problems for wetlands of Turkey as follows; habitat destruction and fragmentation, pollution of water quality, making the wetlands dry with the aim of expanding agriculture and forestry, Interference to water regime, introduction of invasive species in natural wetlands, Over-exploitation of plant and animal species, the problems of jurisdictional and wetland legislation. Egirdir Lake is located at the Western Mediterranean Region of Turkey and in the Lakes Region. Lake an Important Bird Area, Drinking Water Protection Area and has a Natural Protected Area conservation status. The lake is on the way of many migratory birds needs to be protected for the endemic species in the world. At the same time there are some basic problems regarding wetlands. These can be quantified as interference to water regime, damage to water quality, habitat destruction, and introduction of unfamiliar species to the natural wetlands and problems of management. The purposes of this study is determination of ecological properties with a view of Egirdir Lake surface water situation as a water resource for the region and try to give some suggestions of solution on the environmental and wetland problems.
Keywords: Wetlands problem, Water, Pollution, Egirdir Lake, Isparta

134 A macroscopic view of the agro-ecosystems` level of sustainability in Albania

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Abstract
Agricultural production is realized through a combination of natural and human factors. During this dynamic process humans interfere in the natural ecosystems to achieve pre-planned yields by cultivated plants and managed livestock. Achieving these objectives requires additional inputs beyond those provided in natural production processes. The type of inputs provided by humans might be both of renewable and non renewable resources. As a consequence of the human interference significant negative changes are becoming evident in natural and agro-ecosystems, which might threaten their long term sustainability. In this context, setting quantitative criteria for monitoring the dynamics of the overall sustainability in the agro-ecosystems remains a permanent challenge for the society. Application of the Sustainability Inequality for Albania`s agro-ecosystems showed us that agricultural production is far from being sustainable. Reorientation of the agricultural production towards sustainability trends remains one of the most important challenges in Albania. Achieving this objective requires a shift towards the use of more renewable resources, and continues monitoring of this shifting process.
Key words: Long term sustainability,Inequity of Sustainability

135 CORRELATION, PATH ANALYSES AND SELECTION CRITERION FOR IMPROVED GRAIN YIELD IN DURUM WHEAT

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Abstract
An experiment was conducted during 2007-2008 period, with the objective of estimating the associations between yield and yield-related traits and to identify direct effects of characters for durum wheat grain yield improvement. The experimental material consisted of 20 durum wheat genotypes, which are randomly taken from the germoplasm collection. Significant genotypic differences ($P<0.01$) were observed for all the traits studied, indicating considerable amount of variation among genotypes for each character. Grain yield had strong positive correlations ($P<0.01$) with plant height, number of kernels spike^{-1}, grain yield plant^{-1}, biological yield and thousand-kernel weight. On the other hand, grain yield had strong negative correlation ($p< 0.01$) with days to heading, suggesting the usefulness of selecting early heading genotypes with long grain filling period in improving grain yield. The remaining traits recorded moderate to low phenotypic and genotypic estimates. The maximum positive direct effect on grain yield was exerted by biological yield (0.99) followed by days to maturity (0.89) and harvest index (0.73). While, maximum negative direct effects were exerted by days to heading (-0.81) and grain filling period (-0.68). Therefore, days to heading, biological yield and harvest index could be used as an indirect selection criterion for better grain yield. Thus, selecting early heading genotypes having high biological yield and harvest index could improve grain yield.
Key Words: Durum wheat, Path coefficient, direct and indirect criteria, genotypic and phenotypic correlation, yield components

136 Study of biomass production of some cultivars of alfalfa (M. sativa) in terms of central Albania

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Abstract
Area planted with alfalfa in the whole country is about 150 000 ha, making them well past the traditional plants like wheat and corn. This leguminous plant is characterized by high content of nutrients, particularly protein, constituting one of the main food for livestock. The study aims to compare the biomass production capacity in some foreign cultivars and cultivar traditional "Tom" in the area of central Albania. Alfalfa varieties, included in the experiment are Prosement, Gigande, Luzerne and crime. By statistical processing of data on the production of biomass for each mowing (mowing five) shows that varieties Gigande, Prosement have a higher yield from traditional cultivar Tom. By comparing these results with those of the study in the experiment in north-eastern area is evidenced that the study of matter production stability introduced cultivars in different climatic and soil of the country.

Keywords: Biomass, M. Sativa, cultivar indigenous, cultivars introduced, stability of production

137 EFFECT OF IRRIGATION COOPERATIVES ON IRRIGATION AND WATER MANAGEMENT PROBLEMS IN TURKEY

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Abstract
The total land potential of Turkey is 78 million hectares and about 28 million hectares of this is cultivated land. Currently irrigated land is 5.1 million hectares. Total annual available water potential of Turkey is 110 billion m^3. Total water consumption of Turkey is about 42 billion m^3 and distribution patterns are 75% in irrigation, 15% in drinking-residential and 10 % in industry. The irrigation lands have increased gradually in Turkey. However, water resources have not used efficiently by considering the current increase in irrigation areas. Water resources are not beneficial in areas where irrigation systems are not present. In addition, it is also not in desired levels in areas which irrigation systems have completed but, development works have not ended. In present, irrigations have performed without any control in irrigated lands of Turkey. One of the main reasons is poor water distribution plans with deficiencies in irrigation water management. In most countries, formation of irrigation organizations and actively attendance of those organizations have supported. Irrigation water has used more effective in irrigation networks contained farmers attendance. Farmer's attendance is sometimes target and this mostly improves the irrigation performance. The water resources development, one of the most important inputs in agriculture, has performed by government. Irrigation cooperatives play very important role in expanding of irrigated agriculture as well as increase the crop yield especially in Turkey. Irrigation cooperatives are effective and have highly distributed even in small towns in Turkey beside, some deficiencies is present in technical and legislation procedures. There are 2386 irrigation cooperatives with 280043 members in Turkey. The area opened to irrigation by irrigation cooperatives is 1307852 hectares and accounts of 26% in areas of opened to irrigation. There are some problems in irrigation cooperatives in Turkey such as technical, management, and financial problems. Those problems are different in different cooperatives. The problems observed in irrigation cooperatives can be evaluated by two groups: problems before and after irrigation cooperatives establishment.
Keywords: Irrigation, irrigation Cooperative, water Management.

138 The determination method of chlorobenzenes (CBs) in the soil

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Abstract
This study presents a developing method for determination of chlorobenzenes in the soil, including extraction techniques, concentration, clean up and injection in GC-ECD system which was equipped with a DB-5 capillary column and an AS 2000 autosampler. The detection limit of the method was calculated

based on the chlorobenzene recoveries of the presented analytical method and on the detection limits in GC of each chlorobenzes.The extraction with ASE technique presented the best results as the recoveries of MCB, 1,2,4-TCB and HCB from soil with were 100,5±2,5, 88,0±3,3 and 88,0±5,0 respectively. The detection limits of chlorobenzens in the GC-ECD varied from 0,38 pg/µl for HCB to 250,00 pg/µl for MCB. Also, the total recovery of chlorobenzenes was high for HCB (84,13 ± 4,30) and very low for MCB (9,80 ± 1,16). The values of method detection limits of chlorobenzenes in soil were from 0,14 µg/kg soil for HCB to 765,31 µg/kg soil for MCB, whereas other clorobenzenes had intermediate values. Therefore, by using this determination method, high chlorinated benzenes as HCB and PCB could be detected in very small amounts in soil samples.
Keywords: Chlorobenzenes, method, extraction, detection limit, soil.

139 Plant Biodiversity and genetic erosion in Albania

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Abstract
Albania represents one of the European countries with very rich flora. That is due to relief variations , favorable climatic conditions, geographical position and different kinds of geological and soil layers.
The fact that about 3250 species are grown in Albania from about 11.000 plant species that are in Europe, with a density of 113 species per 1000 km² surface is very significant. There are a lot of land races and traditional cultivars that are under the cultivation and have a good value in agricultural production.
Genetic erosion is a hard occurrence in Albania. Regarding of loosing plant biodiversity in Albania evidenced by the studies undertaken to evaluate the genetic erosion there is a hard genetic erosion not only to the crops but especially to the aromatic and medicinal plants.
Keywords: flora, genetic erosion, plant biodiversity

140 THE ROLE OF CILIATES COMMUNITIES IN EVALUATING THE DEGREE OF SAPROBITY OF THE PARALITORAL ROMANIAN LAKES SIUTGHIOL AND TABACARIE

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Abstract
Ciliates lives in specific communities and are use foul bioindicators by river, lakes and waste water. Our researches about ciliates of marine and lake ecosystems began in 1997 and continues today. Since 1997, 140 species have been identified in the sediments of paralitoral lakes and Danube Delta 's lakes (DUMITRACHE – KERKMANN , 2004;2006). In the last 20 years the lakes Tabacarie and Siutghiol have been subjected to strong anthropogenic influences. The ciliates were studied in live and protargol impregnated specimens, were photographed and were subjected to biometric measurements.
Key words: ciliates, communities, bioindicators

141 Researche of population dynamic grapevine benefit mites (Phytoseiidae)

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Abstract
Phytoseiidae mites are very important natural enemies of parasitic Tetranychide and Eryophydae mites,

which cause damage in vineyards. In this research we have determined Phytoseidae species and their population dynamics. During the years 2005-2006, the most widespread species in the vineyards was Phytoseius plumifer Can. & Fanz. (syn. Ph. finitimus). From the study of population dynamics of Ph. plumifer, it was found that under environmental conditions of Tirana this species has 3-4 generations per year. In 2005 the population peak was reached in July, whereas in 2006 it was reached in August. From this two-year data it was shown that the number of mites per leaf is in such a level that it can keep under control the vineyard under study, hence eliminating the use of acaricides.

Keyword: phytoseidae species, population dynamics, vineyards

142 Animal waste management and their impact on methane emissions.

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Abstract
The intensification of the livestock sector contributes to climate change, air pollution, soil and water degradation. Animal waste are important sources of methane, nitrous oxide and ammonia emissions. The present study aims to estimate methane emission inventories from manure management for domestic livestock in Shkodra district, using Tier 1 methane emission factors of IPCC (2006) and national population of each species of domestic livestock.The study describes the potential contribution of on-farm biogas production by anaerobic digestion in reducing GHG emissions from livestock operation, either via the production of renewable energy to substitute fossil fuel and via the reduction in chemical fertilizer needs for livestock and cash crop productions.
Key words: livestock, animal waste, potential, biogas, GHG

143 Evaluation of agronomic and environmental effects in the production of compost at the farm level

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Abstract
The present study had as purpose, through experimentation, production of compost at the farm level and evaluation of agronomic and environmental effects resulting from the application of compost in doses of change. Experimentation is mounted near the EDE (Didactic Experimental Economics) Agricultural University . The experiment continued for two years (2004 - 2005 and 2005 - 2006). The experiment, based on methodology developed for realization of the purpose of study, phase consists of preparing compost, in conformity with European norms to conserve biological used in agriculture and in their implementation phase in the open field use in different doses, with the aim to assess the agronomic and environmental effects of it. The present study considers the role of organic matter assessment in biological breeding methods, using for this purpose, various waste and agricultural zootechnical within the farm, in the form of composted, in order for it to function as a closed system with maximum recycling potential, as well as to assess the agronomic effects of composted organic waste. The aims of the study were: compost production at farm level from its organic residues: Evaluation of agronomic and environmental effects arising from the use of compost in different doses on plants at the farm. In conclusion the use of compost in biological breeding methods, is regarded as one of the most effective ways for recycling organic wastes of the farm, in order for it to function as a closed system.
Keywords: composting, agronomic and environmental effects, recycling, biological cultivation

144 Analysis of some indicators of air in the area of Lake Prespa.

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Abstract
Prespa Lake area located in the northeast of Korca (45km). Its shores are high and partly rocky sand. Prespa is a wonderful tourist spot, the water of this lake is known for its purity (20 m depth visible). Prespa has a natural beauty and attraction with two Great Lakes Prespa and Small Prespa, shared between Albania, Greece and Macedonia. Generally the air in the territory of Prespa is clean, but can be taken more effective measures to improve its quality. Occurrence of pollution is found from the remains of cattle, which are not processed. Lack of sewerage system wastewater does present in some cases the smell of ammonia, this is more pronounced in summer. Even what little air pollution, which is in the area is due to combustion of agricultural waste in open. Dust in the air is present mainly due to summer and winter. The analysis of sampling in some checkpoints as Zaroshke, Liqenas, Gollomboç, great Gorica, Gorica e Vogel, Kallamas, Buzeliqeni, Shuec shows that the values of indicators under study are allowed values of the European Union. This shows that the area around Lake Prespa is clean with reference PM10, SO2,NO2 and O3.
Keywords: air pollution, control points, samples,

145 WASTE YEAST AND OPPORTUNITIES TO RECYCLING IN BEER INDUSTRY

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Abstract
The spent brewer's yeast represent a significant amount of valuable product. A survey of some important constituents of brewer's yeast is given in the paper. Several alternatives for the utilization of spent brewer's yeast are given in short, while the process of recycling of the spent brewer's yeast to the mash tun is given in short, while the process of recycling of the spent brewer's yeast to the mash tun is given in more details. Experiences from laboratory and industrial scale trials, concerning the recycling of spent yeast to the production process, are presented.The most profitable procedure is the addition of spent yeast to the mash tun on the lower temperatures, while its enzyme systems are still active. We can draw the leaven of the excess beer, if any action is performed in the thermal.The result of yeast recycling process is production of 1% beer more, and in brewery the profit of 1% is very great, out of the same amount of raw materials without any significant influence on brewing process and final beer characteristics. These acts of exploitation of yeast also have great importance in preserving the environment, by reduction of brewery waste waters in beer industry.
Key-words: Beer, mush tun, yeast, waste, wort.

146 Correlation between Aluminum in Drinking Water and the Risk of Alzheimer's disease

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Abstract
Maintaining good drinking water quality is a critical consideration, since it is an important influence on own health and therefore quality of life. One of the chemical element in our diet that can influence health is aluminum. It is certainly possible that Aluminum may be a key risk factor in Alzheimer's disease. In Albania Aluminum is not yet classified as main cause of that disease. Thereupon is undertake this

investigation in order to know about this phenomena as well as raising the awareness that needed in this direction. In the following study is presented the aluminum quantity in pretreated and treated water in the bovilla water treatment plant, which is the most important public establishment of the water supply in Tirana city. It's noticed an increase of the aluminum quantity in the drinking water, especially in hard rainy periods, so it's performed a four years monitoring of the aluminum presence in water, to have an idea and projects to optimize the treatment process in order to minimize the quantity of aluminum, and improve the quality of the drinking water.

Keywords: aluminum, Alzheimer's disease, neurotoxin, treatment plant.

147 Preparation of Paratuberculosis Vaccine for Anatolian Wild Sheep: Preliminary Report

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Abstract
Four different vaccine (inactivated bacterin + aliminium hydroxide ($Al(OH)_3$), inactivated bacterin+mineral oil, live+mineral oil, gamma irridation+mineral oil) from *Mycobacterium avium subs. paratuberculosis* (MAP) strain isolated from Anatolian Wild Sheep (*Ovis gmelinii anatolica*), Etlik MVKAE from bovine strain (one) and subunit (one) vaccine were prepared. Commercial Gudair™ vaccine were used as positive control. Each vaccine were subcutaneously administared to 15 Akkaraman lambs 2 months age old. Ten lambs were unvaccinated as negative control. Lambs to 5 in each vaccine groups were divided for seropotens. After vaccination at 40 days, lambs in groups of vaccine (lambs to 10, 7 groups, 70 lambs) and control (10 lambs) were orally challenged with MAP isolate into milk at $2x10^9$ cfu/ml. Taking into account seropotens groups, antibody titres were monitored by ELISA. According to the first five post-vaccination serologic measurements; Gudair vaccine provided faster antibody production but developed 4 vaccine formulation (inactivated bacterin+mineral oil, gamma irridation + mineral oil, live+mineral oil, live Etlik) were determined stimulated to humoral immunity as measured in the positive control at 5^{th} measurements. In addition, INF-□, skin test by PPD johnin, lenfosit transformation test and clinical efficiences were observed. It has shown that data in laboratuar efficiency tests of vaccine prepared from Anatolian Wild Sheep isolate in domestic lambs could also be protective against paratuberculosis infection for Anatolian Wild Sheep.
Keywords: vaccine, wild sheep, clinical efficiences, paratuberculosis infection

148 Assessment of climate in the area Gjilan, Kosovo

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Abstract
Eco climatic rsources are considerate decisive on cultivation plants, because they implicate plant development and in consequence its production.These sources have a relation with eco climate of cultivated zone. The climate contents of an eco zone react in an interconnected way and influence by each of other revealing compensation effects. Some from more important eco climatic indicators are: Precipitations, the kinds of temperature, air relative humidity, the wind and the other atmospheric phenomena. The case by case study of bio climate factors on time and space gave sufficient information for fruit agro ecosystem cultivation. Plant species have definite ecologic distinction. These one are related with origin and biology. Based on obtained results from the data processing according to Rivas S. Martine's Method and the discussions about this study are concluded: the index is oscillated in region of Kosovo.
Key words: climatic resourses, area, atmospheric phenomena

149 DETERMINATION OF OPTIMAL SIZE OF BIOGAS PRODUCTION SYSTEM IN ANIMAL FARMS CONDITIONS IN ALBANIA

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Abstract
Agriculture is a important sector in Albania. It provides with 21% in GDP and 58 % of total employment in country. Agriculture in Albania responded for 77% of methane emission and 91% of NOx. Main resource of CH4 is enteric fermentation of animal and animal waste that responded 95% of total emissions in country. Cattle sector is main contributes. One of alternative of decrease CH4 emissions from livestock is anaerobic fermentation of animal waste. Goal of study is determination of optimal size biogas system in Albanian animal farms conditions. We have studied only animal farms with cow. In 2009 in Albania operated 2977 farms with cow, separated: 1722 animal farms or 58 % with 6 - 10 Head and 1255 animal farms or 42 % with over 10 head. The amount of gas produced depends on the number of cattle (or other animals) and how it is going to be used. In these conditions, in farms with 6 – 20 head should install family size biogas system with 6 or 10 m3 biogas digester. In farms with 20 – 50 head should install medium size biogas system composed in 2 – 3 biogas digesters with 10 m3 capacity each of them. In farms with 50 – 100 head and over 100 head should install medium size biogas system composed with some 10 m3 digester of one or a group of 100 m3 biogas plant formed into unit.
Key words: methane, biogas, animal waste, cow, biogas system, size.

150 *Aristolochia lutea* Desf., new plant species of subalpine Albanian ecosystems

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Abstract
In this paper, *A. lutea* Desf., new species from the family of Aristolochiaceae, is presented and described from several subalpine areas of Albania. Morphological characters of *A. lutea* were discussion and compared with it's closely relatives *Aristolochia elongata* (Duchartre) Nardi reported from the same habitats of South Albania. As the other species like *Aristolochia merxmuelleri* Greuter et E. Mayer, *A. lutea* is a member of the *Aristolochia pallida* aggregate. Ecological data in growing habitat and area of distribution overall the country is given and mapped. Companied with *A. lutea*, in its distribution habitat are recorded and several important species for the Albanian flora like: *Campanula hawkinsiana* Hausskn. et Heldr., *Alkanna graeca* Boiss. & Spruner, *Alkanna scardica* Griseb. *Viola acroceraunienses* Erben, *Viola raunsiensis* W.Becker & Košanin, *Fritillaria thessala* subsp. *jonic* (Halacsy) Kamari, *Fritillaria orentalis* Adams, *Orchis pauciflora* x *Orchis quadripunctata* etc.
Keywords: *Aristolochia lutea*, new species, subalpine ecosystems, important species

151 THE EFFECT OF ON-SITE SEPERATE COLLECTION ON THE PRODUCTION OF GAS IN LANDFILL

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Abstract
The requirements of human beings are increased from day to day. Human being came face to face solid wastes which show increase as parallel to this as a big problem, the required laws and regulations are regulated by Turkish Republic just as in the world.First step of productive waste management is separate of wastes formed at source. If the action of wastes formed at source it's successful, the targets pointed out of law and regulations are readily reached. Separate collection of wastes is facilitated to use of organic wastes, and increased efficiency of energy recovery. Also, the formation of methane gas produced in landfill is affected of separated collection at source.In this study, the wastes, separate collection of two

different reactors simulating landfill were used in order to monitor the formation of methane gas.
Keywords: Landfill, methane production, solid waste

152 ROLE OF SOCIAL CAPITAL IN SUCCESS OF INDUSTRIAL CLUSTERS: A PROPOSAL METHOD

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Abstract
The literature on the theory of economic geography and regional planning, including that focused on economic development and regional economic development, have considered social capital a salient factor in success of industrial clusters during last two decades. Although theoretical arguments have focused on side to role of social capital in economic success of regions, there are theoretical arguments that are not sufficiently explain to role of social capital in economic success of regions. Because social capital relate to critical issues such as its lack of definitional clarity and consistency, limited account of studies, happened multidimensional or abstract of social capital concept. This finding is the point of departure for this paper.On the other hand, aim of the study is to investigate role of social capital in economic success of regions in general and industrial clusters in private. Social capital consisted of social networks, trust and spatial embeddedness is multidimensional concept. In context, measuring and definitions of social capital happened multidimensional concept is enormous difficulty in terms of methodological issues. Thus, this study has focused a method in order to measuring and definitions of social capital in industrial clusters and throws fresh light future research about relations between economic geography, industrial geography and social capital.
Keywords: social capital, social Networks, trust, industrial clusters, economic geography.

153 THE INVESTIGATION OF SPECIFIC GRAVITY OF NEVSEHIR PUMICS WITH TWO DIFFERENT WAYS

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Abstract
The vesicular nature and the soft grains of pumice deposits create difficulties in testing them and in interpreting the test results. The difficulty arises from the presence in the particles of a network of internal voids or vesicles, some of which are interconnected and open to the external surface, while others are isolated inside the particle. In this study we investigated the change of the specific gravity of Nevşehir pumice in two ways. Firstly, a calibrated pycnometer was used but without any vacuum extraction. This specific gravity was referred as the direct value (G_D). Secondly measurements were made using the standart procedure with a pycnometer with vacuum extraction. This value obtained in this way was referred to as the standart value (G_S).
Keywords: specific gravity, Nevşehir pumice, vesicular

154 THE APPLICATION OF HEDONIC PRICE MODEL TO DETERMINE THE AGRICULTURAL LANDS VALUE AFFECTING FACTORS

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Abstract
Real estate is seen as an investment tool, has a particularly important role in carrying out the public activities, so it is subject to valuation. Agricultural lands are an important real estate in rural areas, which

also evaluate in carrying out the public activities. Each real estate has positive or negative features according to around the other real estates. This situation shows that each real estate has different value. Agricultural land is a heterogeneous structure, so that the factors of affecting the value should be evaluated separately. Depending on the individual characteristics of each property, the price changes between different properties can be explained with the Hedonic Price Model. In this study, it is taken that the value of agricultural land is dependent variable and the factors of affecting the value are independent variables. The independent variables in analyses are population, proximity to settlements, road proximity, land productivity, land form, transportation facilities, irrigation facilities, health facilities and land market. Hedonic Price Model is applied that the factors of affecting the value of agricultural lands are evaluated for income method and market method. In this model analysis, it was applied with logarithmic and logarithmic-linear functions; both models were significant at 1% significance.
Key Words: Agricultural Land, Valuation, Hedonic Price Model

155 The quantity of Zinc in pig feeding and its effect on environment.

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Abstract
Today, intensive system of pig meat production requires special levels of feeding, in particulary mineral values. This study, aims to stress out relationships between Zinc, production indicators and environment. Zinc is an essential trace element which plays a role in many biological functions. Loss of appetite, diarrhoea, growth retardation or parakeratosis are symptoms of zinc deficiency that occur in pigs fed non zinc supplemented diets. Due to a lack of knowledge of both the actual zinc requirements of pigs and the factors that affect its availability in pigs, this element is often oversupplied in pig feeding. Such a practice has a direct adverse effect on the environment, particularly in areas of intensive pig farming. To overcome this problem and avoid any wastage of dietary zinc, the supply should be better adjusted to the requirements and zinc availability should be improved as much as possible. Relying on a literature review, pig zinc requirements were estimated according to body weight. The addition of phytase improves zinc bioavailability and 1000 units of microbial phytase /kg of diet were estimated to be equivalent to the addition of 24 and 19 mg /kg zinc added as zinc sulphate in the diets of piglets weighing 15 kg and 25 kg, respectively.
Key words: pig nutrition, Zinc, environment

156 The effect of climate change in expansion of Pine processionary moth (*Thaumetopoea pityocampa*) in Albania

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Abstract
The distribution and infestation level of *Thaumetopoea pityocampa* in northern part of Albania was monitored. Pheromone traps were setup in this area. Also, we investigated the correlation between moth catches in pheromone traps and level of infestation at Pukë region during 2009-2010. The response of *Thaumetopoea pityocampa* in hot summer of 2010. We collected all available weather data for studied area. The expansion of Pine processionary moth towards northern direction was observed. During 2010 in comparison of spread PPM in 2009 has a significant change positively. So, the high summer temperatures favored the flight activity of females towards new pine stands of northern Albania and borderline of Kosovo.

Keywords: pine processionary moth, monitoring, temperature, pheromone traps, *Pinus nigra*

157 Adsorption of Heavy Metal Ions by the Special Soils

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Abstract:
Heavy metal pollutions are very important environmental problem in water source and discharge water. Metal ions are involving by dissolving from natural source with acidified precipitation or metal process waste water. Their levels are mostly not higher than other pollution, but they are very dangerous in very low levels. For this reason, removal of the heavy metal from the aqueous phase using low price materials and with easy method. There are many method on removal of heavy metal from water, but some of them are expensive and difficult to use by uneducated people. In this study, the adsorption behaviour of natural soil (clinoptilolite like materials) with respect to lead has been studied in order to consider its application on contaminated waters. The batch method has been employed, using metal concentrations in solution in low levels.
Keywords: Adsorption; Wastewaters; Heavy metals; Natural zeolites; Clinoptilolite Sorption; Soil;

158 Monitoring of Paratuberculosis in sheep, goats and mountain goats in Albania

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Abstract
Paratuberculosis (PTB) is a chronic enteropathy which occurs in ruminants and is caused by infection with *Mycobacterium avium* subsp. *paratuberculosis* (*Map*). Characteristic symptoms include; diarrhea, progressive weight loss and death among adult animals and the disease has been reported in many Western European countries as well as in Balkan countries. The disease increase in many developed countries, including the USA, is classified as a zoonotic disease, because this disease is followed by a clinical frame similar to humans and the disease in humans is called Crohn's Disease. The disease has been present in our country and this is confirmed by a research performed by Dr. Eqerem Basha in the year 1978. This seroepidemiological study is is the first of its kind in Albania after 42 years. This study has began since September 2010 and continues to be performed in the framework of a post doctorature research supported by MASH (Albanian Ministry of Education) and the tests are being performed at Selçuk University, Faculty of Veterinary Medicine, Department of Microbiology. The sera samples are taken from all the districts of the country and what is special, they are taken from the mountain goats as well collected in the region of Sharre Kosovo, in the borders with Albania. For monitoring of Para tuberculosis the sera were tested by Elisa method . Up to the present from all sera semples analysed, none of the samples has resulted positive for PTB. Our study will be focused with the monitoring of this disease in the populations of the imported goats in Albania from some European countries, where this disease is present.
Key word: Paratuberculosis, Albania, mountain goat, sheep, serological

159 Monitoring of wild animals disease as an element of security to public health and protection of wild fauna

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Abstract
Albania is situated in the Western Balkans and has a wealth of different wildlife. This natural wealth is a great resource for the country, and is also a key incentive for the careful surveillance of wildlife diseases. As surveillance did not exist 20 years ago, Albania was classified as a European hot spot for the presence of wildlife diseases. Within this framework, we would like to stress the fact that Albania is aligned to countries that have a wide range of zoonotic diseases originating from wildlife, such as rabies in wild carnivores, tularemia in wild rabbits, avian influenza (H5N1) in wild birds, Hantaviruses in wild rodents, *echinococcosis* in fox and a large number of other non-zoonotic diseases. Taking into consideration the nearness of Albania to the European Union, regular surveillance and monitoring of wildlife diseases is not only a prerequisite for public veterinary health but also an obligation of European institutions for the integration of Albania into the EU. In the context of such an obligation a sector for monitoring and implementing a system for the surveillance of wildlife diseases has been established and operates in Albania since 2004. This modest sector consists of lecturers and scientific researchers from the Faculty of Veterinarian Medicine at the Agricultural University, researchers from the Food Safety and Veterinary Institute, experts from Albania Wildlife Disease Association, and is supported by partners from European Wildlife Diseases Association; our section is also involved as associated partners in the European project for the surveillance of wildlife diseases (Wild Tech FP7 Project).Since the establishment of this sector, and as a result of cooperation with the above-mentioned partners, several monitoring services have been carried out in terms of wildlife diseases and some interesting data were provided, demonstrating the unique importance of implementing a sound and comprehensive surveillance system for wildlife diseases.
Key words: monitoring services, health, protection, wild fauna

160 EFFECTS of DIFFERENT IRRIGATION TECHNIQUES on DRY BEAN YIELD and WATER USE EFFICIENCY

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Abstract:
This study was conducted to determine the effects of different drip lateral spacings, and the full and deficit irrigation on grain yield and irrigation water use efficiency of dry bean under Middle Anatolian climatic conditions in Konya–Gembos irrigation areas, Turkey. Irrigation treatments consist of two different lateral spacing (45 and 90 cm) and two different irrigation water levels (full and %50 deficit irrigation).In the full irrigation treatment, soil water deficit in the 90 cm soil profile depth was replenished to field capacity. For deficit irrigation treatment, 50% less water was applied as compared to full treatment. A 14-day irrigation interval was used in the study. The highest seasonal water use (ET) was determined in the T-1 treatment as 362 mm; and the lowest ET was found in the T-4 treatment. Lateral spacings and irrigation levels resulted in significantly different yields. The highest grain yield was obtained in T-1 treatment with 3797 $kgha^{-1}$, and the lowest yield was found in T-4 treatment with 2877 $kgha^{-1}$. The highest irrigation water use efficiency (IWUE) was found in T-2 and T-4 treatments (1.39-1.41 kg m^{-3}) and the lowest one was found in T-3 treatment(1.03 kg m^{-3}). Thus a lateral spacing of 0.9 m (one drip lateral per two crop rows) was recommended for drip-irrigated dry bean in the Middle Anatolian Region under those specific conditions.
Keywords: Dry bean, Drip Irrigation, Lateral spacing, Deficit irrigation, Grain yield, Water use efficiency

161 COMPARISON OF DIFFERENT METHODOLOGIES FOR THE FAST DIAGNOSIS OF THE INFLUENZA VIRUS DURING THE SEASON 2009-2010

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Abstract: This paper presents the causative agent of the epidemic of the influenza in our country during the season 2009-2010. It also displays the effectiveness of diagnostics of Influenza virus by the means of the real-time pcr method in comparative of classical virological ones. Also in this paper we have presented the antigenic characterization of this virus which caused the pandemic of 2009-2010 season.We have collected and processed with several diagnostic methods like imunoflorescent assay, rapid tests, isolation and molecular method 409 samples. These were collected by the means of a Sentinel Surveillance throughout Albania, (tampon nasal- pharyngeal) from people suspected of influenza in different ages.To isolate the virus of influenza we have used two methods: the method of isolation of influenza in the cell line of MDCK and also the isolation of the viral RNA by the means of the molecular method. The identifications of the isolates were carried out through the reactions of the hem agglutination inhibition and we have used also the method of Immunofluorescence and rapid test for the antigen detection of influenza virus. The results of the virus analyses are given in the relevant figures. The positive isolates were sent to the International Center of Influenza in London to be confirmed and also to have a further genetic analysis through molecular methods.From these tests performed during the season 2009-2010, it came out that our country was affected by one strain of influenza type A, AH1N1 variant A/California/2009/11. This strain circulated in the whole world causing the pandemic of 2009 and was a new variant deriving from the fusion of 4 strains of Influenza a process which occurred in pigs. These variants have affected the majority of the countries in Europe and in the world.
Key word: influenza, isolates, pandemic, virus, analyses, real-time pcr, acute infection, immune fluorescence, cell line etc..

162 MODIFICATION OF THE METHYLTHYMOL BLUE METHOD TO ADAPT IT TO THE MEASUREMENT OF CALCIUM IN WATERS

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Abstract: This method is used to determine the level of calcium in biological fluids, mainly in blood serum and urine. Calcium present in the analytical sample reacts with methylthymol blue in alkaline environment, giving a stained preparation, which has a maximum absorption at 610 nm wave length (red part of the visible spectrum). We adapted this method to determine the concentration of calcium in water samples.Measuring the concentration of calcium in water samples is important because the chemical "hardness" of water depends on its concentration. Modifications made to the method are: Volume of analytical material was increased from 10 µl to 20 µl. Time of incubation was increased from 2 to 5 minutes. The temperature of incubation was increased from 18-25 º C to 37 º C. The analysis factor was issued with standard calcium of concentration 5mg/dl. The concentration of standard in kits for determination of calcium in biological fluids is 10 mg / dl. After modification of the method, measurement of calcium was carried out in several water samples, specifically in market distilled water, distilled water for injections and sink water. The data obtained proved that the modified method has good sensitivity and precision.
Keywords: Calcium, hard water, incubation time and temperature, methylthymol blue method, sample volume.

163 Treatment of Detergent Wastewaters by Using Polyelectrolyte and Bentonite

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Abstract: In this study, coagulation-flocculation process was used to treat detergent wastewater by using alum as a coagulant. The improvement of the process by using polyelectrolytes and bentonite as coagulant aids was also investigated. The results of the wastewater characterization showed that the concentration of organic matter expressed as chemical oxygen demand (COD) was as high as 24.3 g/L while the biochemical oxygen demand was low. Chemical treatment can be considered as a suitable option for

treatment of detergent wastewater due to the low ratio of BOD_5/COD. Coagulation/flocculation and precipitation studies were performed in a conventional jar-test apparatus. The coagulant dosage of alum ranged between 0.5 g/L and 3 g/L, whereas the concentrations of polyelectrolyte and bentonite varied between 5-75 mg/L and 25-750 mg/L, respectively. Process performance was monitored by using effluent COD and turbidity values. The optimal condition was obtained at the dosage 1 g/L alum at pH 5 with the COD removal efficiency of 64.4% and effluent turbidity was measured as 242 NTU. Addition of coagulant aids improves COD and turbidity removal efficiencies. Using bentonite at the dose of 750 mg/L with alum provided 80% of COD removal and the removal efficiency of COD increased with using polyelectrolyte, resulting in an efficiency of 82%. The maximum removal efficiency was obtained with the addition of polyelectrolyte and it was found that the alum combination with coagulant aids, at certain pH and agitation speed, provided higher removal efficiencies compared to coagulation with alum alone.
Key Words: coagulation-flocculation, detergent wastewater, alum, polyelectrolyte, bentonite

164 ANALYTIC EVALUATION OF GROCERY COMPETITION BETWEEN FIVE ICHTIC SPECIES OF FAMILY CYPRINIDAE.

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Abstract
This study is realized in two lakes (Kurjan Lake and Thana Lake) which are distinguished for specific morfometri and for different quality of water.The aim of this study was to compare alimentare intercommunion inside the community of species of family Cyprinidae in a shallow lake (Thana Lake), with e large litoral zone, with trofic intercommunion in e deep lake (Kurjan Lake),which has limited litoral source.The competition between ichtic populations for the food components was large beside Thana Lake.
In Thana lake it is noticed a high competition (S=0.76) for the macrozoobenthos between *Rutilus rutilus* and *Chondrostoma nasus*.
Scardinius erythrocephalus with *Megallobrama amblycephala* and *Scardinius erythrophthalmus* with *Chondrostoma nasus* demonstrate a average level of competition (respectively S=0.50;S=0.49) for the macrofits.
Key words: alimentare intercommunion, family Cyprinidae, trofic.

165 BIOLOGICAL CHARACTERISTIC OF GROWTH OF RUTILUS RUBILIO BONAPARTE,1837 IN THANA LAKE.

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Abstract
The aim of this study is to demonstrate a model for the study of some biological aspects in species with commercial interest with the scope to determined scientific principes of responsabile fishing. Like model in which is worked are the local groupings inside population of Rutilus rubilio in Thana lake. During this study was seen the age structure of Rutilus rubilio population in Thana lake according to experimental fishing and also is done determination of Rutilus rubilio concentration zones in Thana lake and possibility of existence of permanent " local populations". Also is done the evaluation of some indicators of grouth inside population of Rutilus rubilio. In this frame is judged about grouth of individuals based in the study of allometric coefficient "b" in length-weight relation, condicion coefficient (Kf) and relative rate of growth (Sw).
Key words: responsabile fishing, Rutilus rubilio, indicators of grouth.

166 EVALUATION OF TROPHIC AND SAPROBIC DIATOM INDEX IN ALBANIAN RIVERS

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Abstract
This paper aims to evaluate the efficacy of a bio-monitoring approach to monitor the water quality in soma important Albanian Rivers. Monitoring period was from May 2002 to March 2004. Monitoring of water quality was based on calculation of Shannon Diversity Index (H'), Trophy Diatom Index (TI_{DIA}), Saprobe diatom Index (SI), using benthic diatoms. The Shannon Index gave evidence of biodiversity variations over the seasons and some differences between sampling sites. Results show that cleanest stations, upstream part of Mati (Ma1, respectively 1.4, oligo-mesotrophic) and upstream of Tirana river (Is1), which are populated by many species. The poorest stations in species were Lana (Is2) and Ishmi (Is3). The water quality in rivers was classified from meso-eutroph to eutroph, showing a certain pollution level. Trophic index of Mati and Fani water is meanly lower (mesotroph), other stations had low value of trophic index, which oscillated from eutroph (Tirana and Shkumbini in Labinot-Fushë) to polytroph (Lanë and Ishëm). Most of other station (downstream of Shkumbini, Osum, Gjanicë, Seman) are eu-polytroph. After the Saprobic Index (SI), the saprobic state and the water quality of most of the rivers was limited to oligo-beta-mesosaprobic (class I-II) to beta-mesosaprobic (class II). Only in the river sites of Lana, Ishmi and Gjanica, the saprobic values were high, corresponding to the quality class III-IV, characterized by very strong organic pollution (alfa-mesosaprobic to polisaprobic).To provide more information and increase public awareness for the protection of these aquatic ecosystems, monitoring of the water quality is of highest priority.
Key words: Rivers, Biomonitoring, Trophic Diatom Index, Saprobic diatom Index.

167 INVESTIGATION OF WASTEWATER CHARACTERISTICS OF COKE PLANT WASTEWATER

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Abstract
The steel industries generate various wastewaters during the manufacture and processing of iron. Cokes wastewater is considered as the most toxic one to be treated before being discharged into the environment. During the coke production, a large quantity of waste water is discharged, making the coke industry one of the most serious polluting industries. The aim of this study is to investigate wastewater characteristics and treatment process performances. By taking the conditions of current regulations and measures into account, the results were presented and discussed for comparison purposes
Keywords: Cokes wastewater, Chemical oxygen demand (COD), Phenol, wastewater treatment plant

168 THE MEASURES TO CONTROL THE AMMONIA EMISSION FROM AGRICULTURAL SOURCES IN ALBANIA

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Abstract
The control and the reduction of sulfur, nitrogen oxides (NOx), ammonia and volatile organic compounds (VOCs) emissions from the human activity were the main objective of Gothenburg Protocol. These

compounds have adverse effects on natural ecosystems and human health due to the acidification, eutrophication and the increase of ozone concentration in troposphere. This study analyzed the measures to control the ammonia emission from agricultural practices. Albania as participant on this Protocol is required to compile, publish and disseminate a manual or guide to good agricultural practices to control ammonia emissions. The specific conditions within the country will be taken into account when compiling this code; the code will also include provisions on: nitrogen management while taking into account of the whole nitrogen cycle; livestock feeding strategies; low-emission manure spreading techniques; low-emission manure storage systems; low-emission animal housing systems; and possibilities for limiting of ammonia emissions from the use of mineral fertilizers. The implementation of the good agricultural practices regulates the activities in some of the areas referred to the Protocol, including land use, the use of fertilizer, livestock breeding and animals welfare, manure management, plant protection, water management and water pollution, agricultural systems and biological diversity.
Keywords: Ammonia, emission, agricultural practices, nitrogen.

169 Purifying capacity of Patoku Lagoon

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Abstract

The process of natural lagoon consists in purifying the waste water by simple flow of the effluent in not very deep ponds where aerobic and anaerobic processes in water column and in sediments contribute in purifying capacity of natural lagoons in the presence of a solar radiation. For this study, which is spread out over 3 years (2007-2009), we chose the Patoku Lagoon to analyse the purification capacity by a natural lagoon, located in Albania. The parameters considered were: NO2-, NO3-, PO43-, total phosphorus, and dissolved oxygen. Other parameters, such as, temperature, pH, salinity, and conductivity are monitored during the all period of study. Measured values of above mentioned parameters indicate variations of these parameters starting from the entrance of the lagoon till the point where lagoon water joins open sea, demonstrating the role of this lagoon as a filter that retains nutrients from water. The adaptation of constructed models mimicking the features of natural lagoons, might represent the challenge for the next future research in the field.

Keywords: Lagoon, nutrients, variations, purifying capacity, water quality, ecosystem.

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