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STATUS OF AQUATIC AND TERRESTRIAL ECOSYSTEMS INTEGRITY ON THE EMERGENCE OF AGRI-BIOTECH APPLICATIONS

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ABSTRACT

The major application of biotechnology in agriculture is genetic modification, often refers to gene technology. The result of gene technology in agriculture has been the emergence of numerous Genetically Modified Organisms (GMOs). GMOs are products of gene technology in which organisms (except for human beings) have their genetic material altered in a way that does not occur naturally by mating and/or natural recombination. Even though, the application of gene technology to plants and animals has made it possible to achieve various goals more quickly than by traditional selection, its eventual effects on the environment is still a major debate. Indeed, dilemmas still exists concerning the eventual environmental positive verses environmental negative effects of production of genetically modified food. This paper therefore highlights some of the impacts of emerging agri-biotech practices on the integrity of both aquatic and terrestrial ecosystems. The benefits include solutions to ozone layer depletion, reduced soil erosion, reduced pollution and emergence of hardy crops that can survive in extreme environmental conditions. However, some detrimental effects are associated with the GMO technology. These include introduction of toxic substances, uncontrolled pollination, emergence of notorious weeds and reducing biodiversity. Therefore, it is recommended that the integrity of the environment has to be given higher consideration while making choices on the type and level of GMO applications within any area.

Key words: Benefits, Detriments, Environment, Genetically Modified Organisms

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REMOVAL OF HEAVY METAL FROM THE METAL FINISHING INDUSTRY WASTEWATER BY CHEMICAL PRECIPITATION

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ABSTRACT

In recent years with the increase in population, threatening the nature of human life contaminated with the increase in industrial activity it has reached such dimensions.These problems are due to the rapid industrialization and population growth began frequently to appear on the agenda. In particular, heavy metals leaked into the environment from industrial waste pollution are a very important pollutant that is treating wildlife. These pollutants, firstly from the plants through the soil and water, and then reaches through the food chain to animals and humans. Heavy metals pollution is very important, because they are resistant to biodegradation, and also turn into complex structures combine with other molecules such as proteins. Chromium (IV) is located in the most important heavy metals in waste water and chromium quickly transformed into stable structures, which leads to long-term contamination in the environment. There are many methods, including mainly chemical procedures in wastewater treatment plant metal coating industry. In this study, the chromium metal coating plant, aimed nickel and identification of factors affecting the chemical precipitation and precipitation wastewater contains heavy metals. Studies on the costs for all three metal of 99.9% recovery were obtained.

Keywords: Heavy Metal, Wastewater, Metal Finishing Industry, Chemical Precipitation

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ENERGY CONSUMPTION IN DIFFERENT MECHANIZATION METHODS FOR SUSTAINABLE RAPESEED CULTIVATION

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ABSTRACT

In this experimental study, conventional tillage, reduced tillage and direct sowing methods were applied to rapeseed cultivation in the province of Adana, Turkey. The energy that is consumed in the processes of tillage, planting, fertilizing, agricultural spraying, harvesting and transportation stages were calculated during the rapeseed cultivation. Human labor, tractors, tools/machineries, fuel/oil, fertilizers, pesticides, irrigation and seed obtainment processes were taken into consideration as energy inputs to determine the amount of energy that is used in rapeseed cultivation. For the determination of the energy outputs in rapeseed cultivation, the lower heating values of winter oilseed rape was taken into account as 26.5 MJ/kg for grain and 17.1 MJ/kg for straw of the plant. For the determination of the energy efficiency, input and output values that acquired under the field conditions were defined by measuring the data in the calculations. In all three type of applications, the energy input for fertilizer was 7242.50 MJ/ha. Compared this value to the other input values in total energy input rate which was used in cultivation, it was seen that the highest levels were determined by evaluating this comparison as 69.07%, 78.32% and 85.13%, respectively. The energy input for fertilizer was followed by energy inputs for diesel, machinery, seed, human labor and oil, respectively. The energy ratios of these rapeseed cultivations were determined as 7.30, 7.55 and 7.24, respectively for each application. When examining the energy efficiencies, the application of the reduced tillage method has the highest energy efficiency in the rapeseed cultivation that compared to other two applications in Adana, Turkey.

Keywords: Conventional tillage, reduced tillage, direct sowing, energy efficiency, rapeseed, Turkey

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AN EVALUATION OF ENERGY AND EXERGY EFFICIENCIES FOR A BIOGAS COGENERATION PLANT

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ABSTRACT

The objective of this paper is to evaluate energy and exergy efficiencies of a biogas cogeneration plant. The total and net energy efficiencies for this biogas cogeneration plant were calculated as 91% and 85%, while the total and net exergy efficiencies were 55.5% and 51.7%, respectively. Electric and heat efficiencies and equivalent electrical efficiency of the plant were 37%, 48%, and 80%, respectively. The primary energy savings and relative primary energy savings were found as 264 kW and 22%, respectively. The relative CO_2 emissions savings were calculated as 0.62286 $kgCO_2/h$ for the plant.

Keywords: Cogeneration, energy efficiency, exergy efficiency

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A RESEARCH ON WATER PUMPING THROUGH SOLAR ENERGY

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ABSTRACT

Photovoltaic water pumping (PWP) systems are particularly suitable for water supply in remote areas where no electrical energy is available. Due to the high initial costs of the PWP systems, it is necessary to dimension photovoltaic installations as accurately as possible. In this study, some technical properties of a solar water pumping system have been researched and determined in terms of using electrical energy that obtained from solar energy through photovoltaic (PV) principles to assure mechanical energy for the operation of submersible pumps. For this purpose, electrical properties like current, voltage and power and the efficiency of the PV system have been determined. The system was made up of 3 arrays, consisted of 4 modules each, for a total of 12 modules and every module had a total of 12 × 6 = 72 PV cells. The flow rates of the pumped water, the hydraulic power values of submersible pumps and their efficiencies were calculated using three different submersible pumps, which operated electricity that produced through the PV system. Electrical power, transferred to the accumulator by a module was calculated as 656.23 W in the PV system. The average electrical power produced by the PV system was calculated as 2982.72 W. Electrical power generation efficiency of the PV system was calculated as 17.86% in average. The average flow rate, hydraulic power and efficiency values of the submersible pumps that have been used for the studies were calculated as in the range of 21.6-28.8m^3/h, 1270.58-1694.11 W and 42-56.6%, respectively.

Keywords: Solar water pumping, Photovoltaics, Submersible pump

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FINANCIAL VULNERABILITY AND OBSTACLES TO GOOD HEALTH: AN ANALYSIS OF THE HEALTH CARE SECTOR IN ALBANIA

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ABSTRACT

The health care system in Albania has its roots in the Soviet "Semashko" model, and has suffered from many of the same problems that affect health service delivery other Central and Eastern European countries. The Government's priority in health was to provide universal access to primary and secondary care. This policy led to the construction of a relatively large number of local and regional hospitals, which were typically overstaffed and relied mostly on outdated equipment. The reforms to the health sector that followed immediately after the fall of the communist regime focused mostly on reorganizing responsibilities over health care centers. During the 1990s some administrative responsibilities and ownership of many primary health care facilities were shifted to the local level. However, human resource policies and financing for hospitals remains centralized. This level of health spending is comparable to other countries in the region, however, only half of this amount is publicly financed. The share of out-of-pocket expenditures remains high in Albania when compared to similar countries. For households in the lowest quintile the share of out of pocket spending on health is as high as 50 per cent of the total monthly per capita expenditure per one episode. Such high levels of out-of pocket spending for health services can create barriers to access to health care. Using the Albanian Living Standard Measurement Survey (ALSMS) this paper will present a simple methodology to estimate Out-of-Pocket (OOP) health spending and furthermore it will describe the composition of such spending.

Keywords: Healthcare financing, out-of-pocket expenses, LSMS

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SUSTAINABLE ECOSYSTEM VIA ECO-EFFICIENCY ASSESSMENT IN CAR MANUFACTURE COMPANY

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ABSTRACT

In this research we have calculated co-efficiency by dividing the cost of net sales of products to environmental impacts of products. This evaluation has been considered only by automotive industries. For knowing the excellence of economic and environmental state in factory, co-efficiency evaluation, couples these factors together. In this paper co-efficiency of automotive industries have been measured quantitatively and have been shown that these factors have been increased gradually in the period of 4 recent years. By comparing co-efficiency in recent years ,it is evident that co-efficiency has been increased with gradual growth rate . It means that production process done with less resources use and less waste generation. Comparison of four recent years of eco-efficiency shows that, automotive industries in Iran are co-efficient in all aspects. It is recommended that this evaluation being done in other industries.

Key words: Eco-efficiency; automotive industries; Industrial ecology; Waste Generation

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DETERMINATION OF THE OPTIMUM OBSERVATION POINTS FOR BROWN BEAR *(URSUS ARCTOS)* INVENTORY USING GIS IN SAVSAT, TURKEY

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ABSTRACT

Forest inventory programs involve not only inventorying the tree species' traits but also inventorying the number of wildlife species and their habitats. Brown bear is one of the threatened wildlife species and its habitat must be protected during the natural resources planning processes. Thus, knowing absolute abundance and spatial distribution of the brown bear in a given area helps the managers to plan bear population dynamics and allocate suitable habitats to them within their planning units. The aim of this study was to develop a cost effective, yet well-designed direct inventory methodology to count the brown bear population in the Meydancık Forest Enterprise in Artvin, Turkey. In order to achieve the study goal, the visibility, proximity, and many other spatial analyses tools were utilized within ArcGIS software using a series of geological and environmental variables such as elevation, hill tops, slope, aspect, land use types, stand types, and distances to the roads and rivers. The analysis results showed that 29.8% of the study area was visible from 15 dominant observation points within a sight distance of 2 km while other existed methodologies were observing only the one-third of the same area with 38 observer points. A total number of 35 bears were counted with camera traps and field crew during the field survey conducted in late May 2016. Population density was estimated to be 35 bears/100 km^2 for the region. Other studies were estimated similar bear densities in the same area with more observation points. It can be concluded that the final map that showing visible areas for brown bear observation can provide a precious background to natural resource managers for stratification of the planning unit and delineating the hotspots for biodiversity conservation within a multiple-use forest planning approach.

Key words: Geographical Information Systems (GIS), Brown Bear Inventory, Visibility Analysis

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THE ANOMALOUS LA ROSSA GROUNDWATER OF THE VAL D'AGRI OIL FIELD, SOUTHERN ITALY

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ABSTRACT

A massive injection of wastewater associated to the production of the Val d'Agri oil field (southern Italy) started since 2 June 2006 in the Costa Molina 2 well, through pumping in the underground of an area subject to an high seismic hazard. In 2011 two anomalous pools of turbid, warm and saline groundwater suddenly appeared on agricultural soils of Contrada La Rossa (Montemurro), at a distance of ~ 2.3 km from the injection well. Site surveys were conducted in order to investigate properties and source of La Rossa murky groundwater, by combining data of previous water analyses with the new ones, field mapping, hydrogeological observations and recently published data on the seismotectonic framework of the area and wastewater induced microseismicity. The results of this investigation: 1) confirm the similarities of La Rossa groundwater with the general properties of oil wastewater from many basins in the world and from Val d'Agri; 2) document the mixing of La Rossa toxic groundwater with meteoric groundwater; 3) indicate that injected wastewater may have reached the surface in Contrada La Rossa after migration for several kilometers in the underground, according to data of Improta *et al.* (2015), that document the presence of faults with high-permeability fractured zones just below the Costa Molina 2 well and microseismicity induced by wastewater injection; 4) reconstruct the Quaternary tectonic structure of the Costa Molina 2 area, identifying a morphostructure controlled by normal faults oriented NNE-SSW dipping ESE and NNW-SSE dipping WSW, where induced microseismicity appears to be concentrated.

Key words: methods, oil, gas produced water, Val d'Agri, Italy

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GROWTH ANALYSIS AND REGENERATION OF BEARBERRY (*ARCTOSTAPHYLLOS UVA-URSI*) THREATENED BY COLLECTION AS A HIGH–VALUE MEDICINAL PLANT

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ABSTRACT

Harvested quantities of bearberry (*Arctostaphylos uva-ursi*) exported have been gradually reduced due to improper harvesting techniques affecting growth and reproduction. We conducted research to analyse the growth of bearberry in Korabi mountain covers up to 200 hectares. Sampling took place in seven sites. We measured several growth parameters and their variation between sites. We found that, besides variations between sites or populations, the growth was higher than that found by other authors in different countries as for the internodes length, the number of leaves per branch, the fruit size and the weight of leaves/plant. Specifically, the internodes length ranges from 0.53 cm to 1.05 cm; the branch length varies from 10.59 cm to 4.14 cm; the number of branches/plant varies from 8.3 to 20; the number of leaves/ branch varies from 17.2 to 22.

Key words: bearberry, variation morphological, branch, arbutine, population, internodes

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COST ANALYSIS IN EXPROPRIATION AND LAND CONSOLIDATION FOR EXPROPRIATION WORK

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ABSTRACT

In Turkey, necessary lands should be obtained to increase land transportation networks, to modernise existing routes. In Turkey, these lands are obtained by state institutions and organizations by expropriation. A lot of problems and troubles occur when the lands, which are needed by state institutions and organizations, are obtained by expropriation. These problems and troubles gain different dimensions as applications increase. There are varieties such as financial dimension, sociological and psychological, dimension of managing the money come from finance. It is necessary to use existing law and legislations in the country for minimizing hitches emerge while obtaining the lands which are needed for minimizing these problems. In this study, expropriate method, which is one of the land obtaining methods; expropriation amount paid to peasants of Yozgat-Delice Tatlıcak, Yeniyapan villages', which are on the route of Ankara Sivas High Speed Train are studied. Economic results and costs of obtaining same length of high speed train route by land consolidation method are compared.

Key words: Expropriation, Land Consolidation, Expropriation purposed land consolidation

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VERTICAL ZONATION ECOLOGY OF BEARBERRY (*ARCTOSTAPHYLLOS UVA-URSI*) IN ALBANIA

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ABSTRACT

Bearberry (*Arctostaphyllos uva–ursi* (L.) Sprengel) is an important species of the Flora of Albania, not only for its medical values that it poses, but and for its importance as boreal heaths of the subalpine and alpine geographic region. Our study carried out during years 2012-2015 indicate that it is spreader in different phytogeographic regions, Mediterranean and Alpine, from 1300 m a.s.l to 2200 m a.s.l. It was found in south of the country in open places of xerothermophilous formations with *Buxus sempervirens*, Devolli valley, Gjergjevica Village, up to alpine pastures as in Korabi, Gjallica and Koritniku Mountains. Geographically, *A. uva–ursi* was found in three different forested belts, oak belt, beech belt and coniferous belt, as much as in the alpine pastures. Generally, it was found in between heaths of different sub-types as acidocline alpenrose heaths, sub-types of dwarf heaths formed by mats of the woody *Dryas octopetala* and sub-types of *Juniperus communis* subsp. alpina or *Daphne oleoides* heaths. The species in its vertical distribution range were companied by a numerous herbaceous, scrubs and woody species, which create suitable conditions for its natural growth and development. In this paper, vertical distribution of the bearberry (*A. uva–ursi*) in Albania was showed graphically in the map.

Key words: bearberry, Albania, ecology, zonation

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ANAEROBIC DIGESTION OF LOW- AND HIGH-SOLIDS FOOD WASTE UNDER MESOPHILIC CONDITIONS

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ABSTRACT

In developing countries, food waste accounts for a significant fraction of municipal solid waste stream, the proper disposal of which poses a major challenge. This paper examined the biogasification of food waste in an anaerobic process for methane production, which is a proven technology for the treatment of organic waste streams. The food waste stream considered here included low- and high-solids with and without inoculation with sewage sludge. The process was carried out in a lab-scale batch reactor equipped with a control unit under mesophilic conditions. In addition to methane production, kinetics of the process was also analyzed. It was found that the food waste biodegradation followed a first order model as evidenced by an R^2 of 0.96 compared to 0.77 and 0.67 for the zeroth- and second-order models, respectively. The findings also indicated that samples of higher solids content enjoyed a shorter lag time while inoculation with sewage sludge resulted in a much shorter lag time and a significantly higher specific biogas production of up to 10 to 13 times as compared to the experiments without inoculation.

Keywords: Biogas, Food waste, Anaerobic digestion, Inoculation, Biodegradation kinetics

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AMPLIFICATION OF SPECIFIC RIBOSOMAL AND NON-RIBOSOMAL PHYTOPLASMA DNA CAN SERVE TO DIAGNOSE THEIR PRESENCE AT APPLE AND PLUM TREES FROM KORCA PLANTATIONS

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ABSTRACT

Korca is one of the main areas of apple cultivation in Albania, where the early and reliable diagnosis of phytopathologies such as those caused by MLO is important. Until recently, main detection system was based on symptomatology, but considering that sometimes infections are asymptomatic, that there is lack of phytoplasma epidemiology, the lack of full knowledge on phytoplasma etiology of particular diseases, and the fact that their detection depends widely on their titer in floem tissue, importance should be given on DNA based methods of detection. Present study analyses the presence of phytoplasmas at six collections of apple and plums in Korca district, Albania (four apple varieties and two plum varieties). Samples of categories root, stem, trunk and leaves were used to extract phytoplasmal DNA based on the enrichment protocol of Kirkpatrick *et al*., (1987) and Doyle & Doyle, (1990). Four primer pairs, three ribosomal specific and one non-ribosomal specific designed according to Schneider & Seemuller (1993) were used to amplify target DNA. Specific amplifications of phytoplasma gene fragments showed that two of the ribosomal specific primer pairs could amplify 100% of target sequences; the PD specific primer pair failed to detect all samples (40% only), and the non-ribosomal specific pair failed to amplify from any of the samples. In order to identify the possible phytoplasma strains present at samples from Korca region, suspected because of the double products of amplification in some cases, the RFLP methodology could be the method of choice.

Key words: phytoplasma epidemiology, phytoplasma DNA, diagnose, Korca plantations

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MICROBIOLOGICAL INDICATORS IN DRIN RIVER

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ABSTRACT

The basin of Drin River include the Black Drin, White Drin and Buna River, as well as Shkodra, Ohrid and Prespa lakes. Black Drin and White Drin flow together in the territory of Albania until they meet the Buna River and discharge in Adriatic Sea. The Drin River is important to the economy of Albania, because the water used for agriculture, energy, sanitation and mining industry, fisheries, tourism and transport. Research are focused for the evaluation of microbiological parameters such us heterotrophic bacteria and faecal coliforms. The objective of this study was to evaluate the quality of water based on microbiological parameter such us heterotrophic bacteria and faecal coliforms. Sampling was collected during the river stream with two times per year frequency. All the procedure for sampling, storage, and analysis are according to European standards. We have used the MPN method for calculation of bacteria indicators, and the finally results are reported us CFU/100ml. The data obtained by this study showed that water is within the limits permitted by international standards, for surface waters used by people and agriculture.

Keywords: faecal coliform, Drini water, heterotrophic bacteria, cfu/100ml

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LIVABILITY DIMENSIONS OF RESIDENTIAL UNITS IN TIRANA, IN THE PERIOD 1950 - 1990

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ABSTRACT

Tirana, the capital of Albania, has gone through a series of radical transformations, from its foundation in 1664, to present days. Political and economic changes have emerged in the national context since 1944, thus affecting the general urban development. Respectively, livability in residential areas has undergone significant transformations. This research is based on a comparative analysis of existing housing units in Tirana, focusing specifically on the "50 Vjetori" residential complex. This complex started being built and shaped in 1943 and constitutes one of the most central and important neighborhoods in the city, not only because of its proximity to the city center, but also because of the various functions and activities it hosts, like recreational, business centers, shopping activities, sports, etc. The aim of this research was to analyze the existing problems of housing blocks inherited from the 40's in terms of livability. This was achieved through a thorough study of the spaces between residential buildings, their typology, quality and use by residents. This study was comprised of the following steps: Analysis of the existing conditions of the "50 Vjetori" residential complex from 1953 to 1990; Analysis of the livability of spaces between buildings in this complex; Identification and analysis of the compounding elements of the space between buildings: green areas, inner roads, pavements, squares, pedestrian ways, etc.; Comparison of the aforementioned components in the timeframe 1953-1990; This comparison shows that livability has deeply deteriorated with time in the spaces between buildings, thus not complying with the rising demands of inhabitants. This research tries to give an answer to the possible correlation between the livability conditions and the socio-economic status of the inhabitants and users of those areas.

Keywords: building distance, life between buildings, space between buildings, livability of common spaces

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MONITORING ORGANOCHLORINE PESTICIDES IN BUNA RIVER USING LIQUID – LIQUID EXTRACTION

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ABSTRACT

Political and demographic changes after 90`s have been associated with problems of anthropogenic as well as erosion, flooding and the input of potentially toxic hydrophobic organic pollutants (HOPs) in the area. The Buna River is 44 km long and its depth varies between 2 and 4 m. It drains the Skadar/Shkoder Lake; the Drin River flows into the Buna/Bojana about 1.5 km from the out flow of the latter from the Lake. The present study consists in identification of persistent organic pollutants in surface waters of Buna river. Environmental pollution caused by a variety of chemicals. Surface water samples at 4 different sites through the river length were collected during two years (2013 and 2014). The aim of this study is determination of organochlorine pesticides with liquid – liquid extraction (LLE) method in Buna river followed by gas chromatography (with electron capture detector, ECD).The quantified pesticides were α-HCH, β-HCH, HCB, Lindane, Heptachlor, 2,4-DDE, 4,4-DDE, DDT, DDD and methoxychlor. Measurements resulted in concentrations of the OCP's ranging from 1.43 to 1344 ng/L. High level concentrations of HCB pesticides in the surface water were observed in four sites.

Keywords: LLE, Buna, GC-ECD

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IMPACT OF HEAVY METAL POLLUTION IN LIVER FUNCTION AND MORPHOLOGY OF FERAL PIGEON (*COLUMBA LIVIA*), LIVING IN THE COURTYARD OF FERRONICKEL SMELTER IN DRENAS - KOSOVO

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ABSTRACT

Effect of heavy metals (Ni, Pb, Cd, Cu and Zn), that are present in the environment around of the ferronickel smelter in Drenas-Kosovo, can be the cause of many negative effects in the organisms. These effects, may affect the function of many tissues and organs, including the liver tissue. This study was undertaken to evaluate the effects of environmental pollution from the ferronickel smelter in the liver function and liver morphology. For this purpose, we have measured the activity of plasma alanin aminotransferase (ALT), aspartat aminotransferase (AST), alkaline phosphatase (ALP) and plasma total proteins of feral pigeon (Columba livia). Specimens of feral pigeon (20 birds, 9 males and 11 females), were collected in ferronickel smelter courtyard, and 20 birds (11 male and 9 female) in Lubizhdë village (control group). We found out that the plasma ALP in Drenas group was lower, but not statistically significant ($P>0.01$), compared to pigeons of control group. Also, the activity of the enzymes alanine aminotransaminases (ALT, $P>0.001$), and aspartate aminotransaminases (AST, $P>0.01$), were lower compared to the control group. The total plasma proteins was significantly higher ($P>0.01$). We found out that liver weight was lower ($P>0.001$) compared to the control group. Suggestion: Feral pigeons as worth biomonitoring organisms for evaluation of environmental pollution based on Ferronickel industry. Increased of heavy metal concentration in avian blood may affect the morphometry of soft and solid tissues.

Keywords: Heavy metals; pigeon; enzymes; total protein, morphometry

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URBAN INDICATION IN THE AIR AND THE RIVER'S STATEMENT OF BERAT DISTRICT

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ABSTRACT

Osumi River crossing the city of Berat, is originated from the mountains of Vithkuq at an altitude of 1,050 meters (3,440 ft) draining the region of south and partly in western lowland of Albanian Republic. Devolli River's source is in the southwestern corner of the Devoll municipality. It joins the Osum near Kuçovë, to form the Seman. The aim of this study is to assess the microbiological quality of the air around the urban area of Berat district which contributes to the river's statement and the quality of citizen's life. Sampling period was settled between 10:00 am–12:00 pm from June to August 2016 and each sample was performed on the sunny days with similar climatic conditions to reduce the measurement uncertainty resulted from weather variations. Technique applied to assess the air quality was the sedimentation technique as culture settling plates using plate count agar. Microorganisms were captured on Petri dishes with appropriate cultivation agars. After sampling, the agar plates were immediately transported to the laboratory for incubation. It was observed that meteorological factors influence on the variation of the concentrations of air borne bacteria, also air pollution contributes in the water quality of rivers of Berat district.

Keywords: rivers, pollution, air, sediment method, microorganisms

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THE TURIN-LYON HIGH-SPEED RAIL: A TECHNICAL ASSESSMENT

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ABSTRACT

One of the best known cases of struggle for the commons in Italy, characterized by bitter controversies over the last 20 years, is the popular opposition to the construction of the High Speed Railway line between Turin and Lyon, designed to cross the Susa Valley (at the Italian-French border) and the Alps. This HSR project still carries, in spite of twenty years of continuous updating and reworking, a great deal of unsolved environmental and economic issues. The Susa Valley, situated between Maurienne, France and Turin, Italy, has been urbanized by the economic development of the region. The construction of infrastructures like the Frejus highway, the international railway, and a large number of dams, tunnels and industries, has generated significant environmental and social impacts. The proposed high-speed railway (HSR) line (Treno Alta Velocità in Italian, or TAV) between Turin and Lyon would pass cross the Susa Valley, via 2 main tunnels and several shorter ones across the Alps. Main pollution problems dealing with the railway construction have been put into evidence by several studies and official reports. Moreover, the insufficient cost-benefit balance, especially in view of the significant passenger and freight traffic decrease along the Turin-Lyon direction is a fact: the huge amount of public money invested or planned in support of such development does not appear to be justified by sufficient economic benefits associated to the investment. In other words, not only a sequestration and degradation of the environment is going to take place, but also there is no advantage at all in economic terms. The usual appeal to the Precautionary Principle in the case of HSR project is not even necessary. Economic data, energetic considerations, legal questions, environmental impact, the health impact potential, the negative experience of other projects suggest that the High-Speed Train Turin-Lyon is not an actual priority for Italy and Europe, and its construction should be immediately stopped. The most important aspects dealing with economic costs and claimed benefits, energetic considerations, legal constraints, environmental impact, health impact potential, and the negative experience of other projects, are discussed.

Key words: High-Speed Train, legal constraints, environmental impact, health impact potential, Italy, France.

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PREVALENCE OF INFECTION WITH TOXOPLASMA GONDII AMONG PREGNANT WOMEN IN TIRANA

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ABSTRACT

Toxoplasmosis is caused by infection with the protozoan *Toxoplasma gondii,* an obligate intracellular parasite. The infection produces a wide range of clinical syndromes in humans, land and sea mammals, and various bird species. The aim of this study was to determine the prevalence toxoplasmosis among pregnant women of Tirana district. This is a retrospective study including pregnant women who presented at laboratory of the directorate of public health in Tirana district for routine examinations of pregnancy during the period 2011-2013. Serum samples were tested for both IgG and IgMT. gondii antibodies by using enzyme-linked flourescence assay (ELFA). A questionnaire containing socio-demographic and behavioral habits was de-signed and completed for individuals. A total of 247 pregnant women were studied. The average age of these women was 27.3 years and the average gestational age was 24.5 weeks. Among these women, 72 were seropositive for IgG antibodies 29.1%, 95% CI: 23.5–35.2%) (fig.1). Six women were positive for IgM antibodies (2.4%, 95% CI 0.9–5.2%). Preventing toxoplasmosis is particularly important in seronegative immunocompromised patients and in pregnant women.

Key words: Toxoplasmosis, seroprevalence, IgG, pregnancy

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ANTIBIOTIC USE IN A GENERAL SURGICAL WARD IN A TERTIARY HOSPITAL IN ALBANIA

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ABSTRACT

Inappropriate antibiotic prescriptions appears to be quite frequent worldwide and is contributing to the selection of antibiotic-resistant organisms. The aim of the study was to investigate antibiotic prescribing patterns and the rates of their irrational use in patients at a general surgical ward. The study was conducted at a general surgical ward of the University Hospital Centre "Mother Teresa" in Tirana, Albania with a capacity of 125 beds. In order to evaluate the antibiotic use, a point-prevalence study was performed in May 2015 referring the to Global PPS methodology. A patient form was completed only for those patients on antibiotic treatment at 8 o'clock on the day of the survey. On the day of the survey, 54 patients (43.2%) out of 125 in-patients were on antibiotic therapy. Their mean age was 52.7 ±14.5 years (range 17-86 years old); 56.4% were males and 43.6% females. 38 patients (70.4%) were hospitalized for elective surgery, and 16 (29.6%) for urgent surgical procedures. Availability and use of guidelines for antibiotic prescription were missing in 100% of cases. The treatment or prophylaxis was appropriate in 34 patients (63%) while it was not-appropriate in 20 patients (37%) ($p<0.05$). Cephalosporins were found to be the most frequently used antibiotics among all, with a rate of 90.7%. The mean duration of surgical prophylaxis was 2.1 days (range 1 to 7 days). The emergence of antibiotic resistance is linked to the inappropriate use of drugs. This study suggests that antibiotic prescriptions in the hospital need to be reviewed in terms of rational antibiotic use. A close surveillance of the antibiotic use in surgery clinics and the structuring of policies regarding surgical prophylaxis with the help of approaches such as the development of guidelines for local surgical prophylaxis and continuous education could contribute in improving the appropriate use of antibiotic therapy.

Key words: antibiotic, prevalence, prescription, guideline

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INCIDENCE OF PERI-MUCOSITIS AND PERI-IMPLANTITIS, IN OSSEOINTEGRATED IMPLANTS

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ABSTRACT

Peri-implant mucositis is clinically described as the inflammation of the peri-implant mucosa without bone loss; being the most important clinical diagnosis the presence of bleeding on probing (BOP). The aim of this prospective study was to assess the incidence of peri-implantmucositis and periimplantitis in patients with osseointegrated implants. This is a prospective study conducted at University "ALDENT" in Tirana, Albania over the period 2012-2015. The study was conducted on a cohort of 96 patients aged 23 to 65 years having undergone implant treatment, with a total number of 321. The incidence of peri-mucositis was 39.6% while the incidence of peri-implantitis was 20.8%. In peri-mucositis implants were recorded 50% free of plaque surfaces and 33% sites with bleeding on probing around natural teeth, wheres in peri-implantitis sites the bleeding on probing indicated 37% of the sites. Periimplant bone resorption did not exceed in any case one third of the implant height. Peri-implant probing did not show probing depth values higher than 5 mm. Special attention should be given to the standardization of the different criteria applied, as: follow-up time intervals and the criteria used to differentiate health from diseased sites.

Key words: dental implants, peri-implantitis, peri-mucositis, incidence

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CHEMICAL COMPOSITION OF *SALVIA OFFICINALIS* ESSENTIAL OIL FROM VLORA DISTRICT OF ALBANIA

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ABSTRACT

The chemical composition of the volatile oil of *Salvia officinalis* growing wild from Vlora District has been investigated. The essential oil was obtained by hydrodistillation and its analyses were performed by GC–MS. The chemical composition showed that the monoterpene hydrocarbons fraction 50.6% was the most abundant in the volatile oil from sage represented by camphor 45.9% as the dominant component. In addition, the oxygenated monoterpene was present by 41.0%; the principal costituents of this fraction were α-thujone 13.7%, followed by eucalyptol 6.0%. Camphene 3.9% and borneol 5.7% were also identified in significant quantity and β-caryophyllene 2.4%. α-humulene being the dominant components of the sesquiterpene hydrocarbon fraction 6.5%. Furthermore, the oxygenated sesquiterpene fraction was present in minor quantity 1.0% whereas bornyl acetate was found in significant amount 5.6%. Moreover, the essential oil was tested for their free radical scavenging activity using the following *in vitro* assays: i) interaction with the free stable radical of DPPH (1,1-diphenyl-2-picrylhydrazyl), ii) inhibition of linoleic acid peroxidation with the dihydrochlroic acid of 2,2'-azobis-2-methyl-propanimidamide, dihydrochloride (AAPH). Finally, their inhibitory activity toward soybean lipoxygenase was evaluated, using linoleic acid as substrate. The essential oil of *S. officinalis* (SO-VL) has presented the 39.64% interaction with the stable radical DPPH it also showed high anti-lipid peroxidation activity, 69.12%. The tested sample does not inhibit soybean lipoxygenase.

Keywords: Essential oils, Antioxidant activity, Aromatic and Medicinal Plants, Albania.

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PLANNING AND MANAGEMENT OF ECOTOURISM IN THE PROTECTED AREAS: CASE ON ILGAZ MOUNTAIN NATIONAL PARK IN TURKEY

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ABSTRACT

One of the most pressing concerns arising from growth of ecotourism in the protected areas is how to plan the ecotourism to support effective conservation of the values in the sensitive areas and optimize equitable benefits to local people and reduce adverse impacts of tourism. Beside the concerns, there is a high level of expectation among protected area managers about ecotourism and its opportunities, but there is also a great deal of concern about the challenges it creates. It is clear that ecotourism will not succeed without planning and management. Although, planning for ecotourism is a very important progress for conservation and development in the protected areas, there is a very limited number of ecotourism planning studies for protected areas in Turkey. One of these studies is the 'Sustainable Tourism Planning for Ilgaz Mountain National Park'. The plan has four phases and issues to be addressed in implementing each of these phases are discussed in detail by planners, site managers and other key stakeholders. The process described is intended as a reference for implementation of ecotourism products and services, governance for ecotourism, sustainability of the activities, and training and awareness for visitors, site managers and implementers. The plan initiates many opportunities for managers and decision makers. It also corroborates importance and necessity of the planning for sustainable ecotourism implementation and stakeholder engagement in order to increase effectiveness. Despite the fact that the plan is a concrete result, the process indicates that ecotourism is initiated only when it is the most effective strategy to achieve tangible, lasting results and strong cooperation and collaboration between local people and tourism business. The conservation management, local participation and business development must be fully understood by ecotourism planners and protected area managers before moving ahead with plans to implement ecotourism activities. This paper sets out to identify a number of elements of good practice in incorporating the fundamental issues of management and development of the ecotourism in Ilgaz Mountain National Park. The process intends to be a reference for the other protected area ecotourism planning studies.

Keywords: ecotourism, sustainable tourism, protected areas, ecotourism planning, Ilgaz Mountain National Park.

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CORRELATION OF SERIC BIOMARKERS AND CELLULAR ELEMENTS IN SPUTUM AND BLOOD, IN RELATION TO THE GRAVITY OF COPD

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ABSTRACT

Background: Research in relation to the biomarkers to define exacerbation, gravity and it's progress in COPD has been made and continued to be made. By present literature, it result that biomarkers correlate with clinical gravity, with the time of the recovery period, persistence of symptoms and clinical resolution, with exacerbation frequency. Aim: The study has as an aim, the evaluation of the correlation of seric biomarkers and cellular elements in sputum, and blood in relation to the gravity of COPD. Method: The abstract is an observing prospective study conducted on the Regional Hospital "Fier". In the study, patients presented with exacerbated COPD of stages III and IV were considered. Based on a protocol, in patients with COPD exacerbations, anamnestic data as well as data from clinical and laboratoric examinations was collected. It has been defined in the time of introduction for the reason of COPD exacerbations and after 21 days, CRP, IL6, PARC/CCL18, cellular content of sputum and blood. The statistical analysis was conducted through SPSS (Statistical Package for Social Sciences) 20.0 and Medstat. Values of $p \leq 0.05$ were considered significant. Results: In the patient with COPD exacerbations of stages III and IV, significant changes of cellular elements in blood and sputum were observed. In relation to the values of the original CRP in normal boundaries there is no case in the D4 category and value higher than the level from 40 to 200 mg/l are in relation to categories D3 and D4. In the examination of IL6 in exacerbation, it can be observed that cases with a level >7 pg/ml are grouped in categories D3 and D4; PARC in values >30ng/ml are 91.1% of cases, whereas in values >60 ng/ml are in 66.1% of cases. The greatest number of cases PARC in the values >30ng/ml, as well as for values >ng/ml, are in categories D3 and D4. According to the data of the correlations analysis, it results that original CRP correlated in a significant manner with COPD stage (p=0.005); IL6 (p=0.038). PARC (p=0.054). Conclusions: It results that there are significant changes in stages III and IV in relation to the stage of inflammation based on cellular structure in sputum, number and cellular elements of blood and the levels of CRP, IL6 and PARC/CCL18 in blood.

Key words: Biomarkers, inflammation, cellular structure, sputum, blood, levels.

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EARLY CHILDHOOD CARIES PREVALENCE AND PATTERN IN 0-6 YEAR OLD CHILDREN

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ABSTRACT

Dental caries, as a result of a disturbance of the ecological balance on the dental hard tissues caused by plaque microorganisms (1) is one of the most prevalent diseases in children. The aim of this study was to examine the prevalence of early childhood caries (EEC) in 0-6 year old preschool children. This crossectional study was conducted for a period of six months, among the preschool children in Tirana district. Prior permission was obtained from the parents. Clinical examinations were performed by two examiners trained and calibrated for the dmft index, according to the diagnostic criteria described by the World Health Organization (WHO). The present study was carried out on a total of 217 children in age group of 0-6 years. 102(47%) were males and 115(53%) females. Prevalence of early childhood caries was 49.3%, (107/217). The presence of caries in the primary dentition is the strongest predictor of caries in permanent dentition. Therefore, results of the present study have a number of preventive and management implications. A high caries prevalence and dmft scores call for a concentrated effort to decrease caries prevalence and severity in preschool children.

Key words: caries, prevalence, preschool children, dmft index

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STUDY ON BALANCE SAWN TIMBER IN PRIMARY WOOD PROCESSING IN KOSOVA: CASE STUDY BEECH WOOD

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ABSTRACT

Wood processing industry in Kosovo is one of the most developed industries. It numbers about 1550 subjects which produce wood products. Wood industry is the third most important industry in the number of employees in Kosovo. Overall timber used by the industry is local wood. There is a relatively large number of enterprises in sawing of the logs. Mainly of them used beech wood. This sort of tree covers the largest area of forests in the Republic of Kosovo, (about 33.33%) of the total volume of forests. To obtain reliable results are consulted 30 subjects, 18 of them are sawing logs of beech, while others saw logs from different types of trees. The data for the study were obtained by 18 subjects distributed geographically throughout the regions of the Republic of Kosovo. The study has shown the balance of the sawn log in primary wood processing in Republic of Kosovo, expressed in percentage: Boards 78.86%, Outer part with bark 11.27%, Sawdust 9.4%, others 0.39%.

Keywords: beech, balance, boards, bark, sawdust.