Vol. 6 (3): 243-250 (2016)

IMPORTANCE OF *LILIUM CANDIDUM* (WHITE LILY) GROWTH IN ECOLOGICAL CONDITIONS OF TURKEY AS A POTENTIAL FOR LANDSCAPE AND FOOD SECTOR IN TOKAT

Kübra Yazici[1], Bahriye Gülgün[2]

[1]Gaziosmanpaşa University Faculty of Agriculture, Department of Horticulture, 60100, Taşlıçiftlik, Tokat, Turkey;
[2]Ege University Faculty of Agriculture, Department of Horticulture, 35100 Bornova, Izmir, Turkey;

Email: k-yazici-karaman@hotmail.com; bahriye.gulgun@hotmail.com;

Received March, 2016; Accepted April, 2016;

ABSTRACT

Because of their flowers, leaves, scent, texture ornamental garden plants are very popular among people who live in urban and rural areas. Most commonly, they are grown for the display of their aesthetic features. Bulbous plants (*i.e.* Geophytes) are the best example for this purpose. Even in history there is a certain era in Ottoman Empire can be said to have begun to orient itself towards Western Civilization is called "Tulip Period" or "Tulip Era". Bulbous plants have a significant place in history. *Lilium candidum* is a perennial, ostentatious and approximately one meter high, pleasant-smelling bulbous ornamental garden plant. It is an important mark in the culture of Tokat city. This bulbous plant has a very strong place both in cuisine and in home gardens of Tokat. This precious plant began to disappear because of increase of industrialization causing pollution and loss of planting areas due to the demand for new residential areas caused by increasing population. In this study, cultural and landscape values of *Lilium candidum* is analysed by SWOT analysis methodology. The aim of study is to emphasize the importance of *Lilium candidum* in many fields such as agriculture, chemistry, nutrient (food), landscape and increase the usage of this plant in these sectors.

Key words: Tokat, White Lily, bulbous plants, cultural landscape.

Vol. 6 (3): 251-258 (2016)

AQUATIC ENVIRONMENT OIL POLLUTION - DATA AND FACTS

Gina Raluca Kerkmann

Faculty of Sciences and Letters, 'Ibrahim Cecen' University, Turkey;

Email: grkerkmann@agri.edu.tr

Received March, 2016; Accepted April, 2016;

ABSTRACT

Certainly oil pollution is a threat for the natural balance of ecosystems. The pollution sources are very different as well as their determinants. Depollution methods in case of oil pollution caused by tanker collisions are physical and chemical. This process induced by bacteria has a big disadvantage: biodegradation time is too long. The accidental oil spills affect biodiversity of aquatic and terrestrial ecosystems. The immediate consequences of oil pollution could be directly monitored using inventory of invertebrates. The test of the role played by ciliates in oil biodegradation process was made based on an interesting experiment performed on a small beach located in Constanta, Romania; The taxonomical aspects were completed by ecological aspects; the study is based on a complex geological analysis about the granulometry of beach sediments; the sands from Cazino Constanta beach are mainly represented by coarse and very coarse sand while gravels range from fine and very fine. During the experiment when performing the 48 hour control after adding the oil pollutant 13 ciliate forms were identified alive in the sand sample from Navodari station, their evolution being different.

Key words: oil pollution, biodegradation, ciliates

Vol. 6 (3): 259-266 (2016)

SURVEY OF THREATINING FACTORS IN SARVELOT-JAVAHERDASHT 10% PROTECTED AREA USING SWOT ANALYTICAL MODEL

Reyhaneh Abdolkarimpour Chinijani[1], Abdolkarim Keshavarz Shokri[2]*, Jalal Behzadi[3]

[1,2] Department of Environment, College of Natural Sciences, Lahijan Branch, Islamic Azad University, Lahijan, Guilan, Iran;
[3] Department of Agronomy, College of Agricultural Sciences, Lahijan Branch, Islamic Azad University, Lahijan, Guilan, Iran;

Email: karimkeshavarz@yahoo.com;

Received March, 2016; Accepted April, 2016;

ABSTRACT

Northern forests of Guilan province are considerd as critical ecological resources thus protection and conservation of its flora and fauna seems very necessary. Ten percent protected forest area of Sarvelot - Javaherdasht with an area of about 21,254 hectares and average perimeter of about 74 km is located in east Guilan. Factors such as livelihood dependence of a large group of the population to this area, human activity and indiscriminate development has led to continuous reduction of its biodiversity and this has created more limitation for the survival of wildlife. The aim of this study is to investigate the threatening factors of the mentioned forest area and based on field studies and analysis of data through the SWOT technique which is a tetragonal model, first internal factors (strengths and weaknesses) and then external factors (opportunities and threats) were examined during which 2 questionnaires were completed and analyzed by local authorities and individuals. Based on the SWOT technique the obtained results suggest that the existence of attractions and ecotourism potential of the region with a weighted score of 0.82 are the most important strengths, while the lack of environmental monitoring stations in the region with a weighted score of 0.692 is the most important weaknesses. Existence of favorable weather conditions, especially in spring and summer for tourists and local people with a weighted score of 0.844 is the most important opportunity. However, the most important threatening factors of the mentioned region with a weighted score of 0.848 are: the lack of environmental monitoring stations, constructional invasion of forest marginal population, overgrazing, roads, mines, illegal hunting and waste. Survey results show that because of the negative impacts of these factors, the biological quality of the region is under serious threat thus, protective strategies based on the SWOT technique are presented.

Keywords: Threatening factors, Tourists, Biological Quality, Protection, Ecotourism,Ten percent forest protected area, Sarvelot - Javaherdasht, SWOT Analytical Model

Vol. 6 (3): 267-272 (2016)

STUDY ON THE RELATIONSHIP BETWEEN VEGETATION COVER AND SOIL EROSION BY USING REMOTE SENSING

Amir Hossein Firozan[1*], Mahsa Hakimi Abed[2]

[1]Department of Forestry, Lahijan Branch, Islamic Azad University,Lahijan, Iran
[2]Department of Environment, Lahijan Branch, Islamic Azad University, Lahijan, Iran

Email: Firouzanamir@yahoo.com

Received March, 2016; Accepted April, 2016;

ABSTRACT

Stable management of natural resources as a national capital requires comprehensive knowledge of existing relations in nature such as the relationship between vegetation cover and soil. The acquisition of knowledge and information on the relationship between vegetation cover and its health is highly important for soil management. The examination of vegetation cover, whether locally or globally depends on field data while its usually hard to access such data. Besides, conventional method of vegetation cover estimate, which includes general estimate of vegetation cover, is not only time-consuming but also isn`t informative. Results confirmed by field observation and land facts show that the general precision of images from landset 8 was acceptable (the general precisions for the years 2000 and 2013 were 0.89 and 0.88 respectively). Thus, remote sensing is a very useful technology which is a preferred method because of its special features such as providing a wide and unified view of an area, recursion, accessible data, high precision of resulting information and time saving. In the present article, vegetation cover map is drawn using remote sensing technology and NDVI index. After comparing this map with basin erosibility map, it was found out that in areas with decreased vegetation, there is increased erosion. This further indicates that there`s a positive and direct relationship between vegetation cover and local erosion.

Keywords: Erosion, NDVI, Remote sensing, vegetation cover

Vol. 6 (3): 273-276 (2016)

HISTOPATHOLOGICAL FINDINGS IN POSTMENOPAUSAL BLEEDING

Albert Cakoni[1], Nikita Manoku[1]

Obstetric Gynecologic Hospital "Queen Geraldine" Tirana, Albania;

E-mail: albertcakoni@yahoo.com;

Received March, 2016; Accepted April, 2016;

ABSTRACT

Postmenopausal bleeding (PMB) requires complete assessment in order to ensure the absence of malignancy and to identify and treat high risk patients such as those with endometrial hyperplasia. This is a prospective cohort study of 207 patients admitted over the period 2013 and May 2014 to the Obstetric Gynecologic University Hospital "Queen Geraldine", in Tirana, Albania. The aim of this study was to describe aetiological factors of postmenopausal bleeding. Of the 207 cases who presented with this symptom 131 (64%) found to have genital tract pathology. Of these pathologies 87% were benign while 13% were malignant. Patients at 55-64 years of age were the mostly affected women by postmenopausal bleeding whether due to benign or malignant pathology (50.4%). Endometrial atrophy was the most frequent benign pathology found (43%). Others include endometrial hyperplasia (10.5%), endometrial polyp (12.3%), cervical ectropion (9.6%), vaginal ulcer (7.9%), cervical polyp (7%), cervicitis (6.1%), and cervical dysplasia (3.5%). After a thorough evaluation for PMB and arrival at a diagnosis, the question arises as to what to do next. For women with cervical or endometrial cancer, prompt referral to the gynaecological oncology service is imperative for definitive management.

Key words: postmenopausal bleeding, benign, malignant, pathologies

Vol. 6 (3): 277-284 (2016)

COMBINING SATELLITE, IN-SITU AND CLIMATOLOGY DATA FOR SNOW DEPTH ESTIMATION OVER HIGH-MOUNTAIN REGIONS

Cezar Kongoli[12], Sean Helfrich[2]

[1]Earth Science System Interdisciplinary Center (ESSIC), University of Maryland College Park, MD, USA; [2]National Oceanic and Atmospheric Administration (NOAA), National Environmental Satellite Data and Information Service (NESDIS), NOAA Center for Climate and Weather Prediction (NCCWP), College Park, MD, USA;

Email: Cezar.Kongoli@noaa.gov; Sean.Helfrich@noaa.gov;

Received March, 2016; Accepted May, 2016;

ABSTRACT

The objective of this paper is to present a blended snow depth analysis method applied to high-mountain regions. The blended analysis is running operationally at NOAA within a system called Interactive Multi-Sensor Snow and Ice Mapping System (IMS), generating daily snow depth output over Northern Hemisphere at 4-km resolution. Snow depth obtained from satellite passive microwave measurements are blended with snow depth measured at ground stations using a 2-Dimensional Optimal Interpolation (2D-OI) method. Unique to the production is that the analyst-derived data (snow depth and associated confidence values) are also blended into the analysis consistent with the 2D-OI method. Pseudo-observations of snow depth are also blended to improve analysis over high-elevation terrain where in-situ stations are sparse and satellite-derived estimates are less reliable. These are computed from temporally smoothed snow depth-elevation analytical expressions fitted to historical in-situ snow depth reports. Example applications of the analysis over high-mountain regions in US and elsewhere are also presented.

Key words: Satellite Remote Sensing, Snow Depth, High-Mountain Regions, Optimal Interpolation, Climatology

Vol. 6 (3): 285-290 (2016)

EFFECTS OF NICKEL, CHROMIUM AND COBALT ON *ALYSSUM MURALE* PLANT IN ALBANIAN SERPENTINE AREAS

Eridana Çuni[1], Seit Shallari[1], Erta Dodona[1], Petrit Harasani[2], Fatbardh Sallaku[1]

[1]Agricultural University of Tirana, Faculty of Agriculture and Environmental Science, Tirana, Albania;
[2]Polis University, Tirana, Albania;

Email: eridana.cuni@gmail.com; seitshallari@gmail.com

Received June, 2016; Accepted June, 2016;

ABSTRACT

Serpentines lands are very specific areas to develop the natural flora and also for the plant's cultivation. They are distinguished by e very high content of Ni, Cr and Co and by a very low content of N, P and K. Also they are characterized by a high Mg level and by a low Ca level. Usually these lands are steep and eroded. Flora and fauna developed in the Serpentine areas is unique and an endemic one. Based on this, serpentine plant species have developed some specific mechanisms to tolerate the presence of heavy metals in soil or their accumulation in plants. The purpose of this study is to identify the extended area of *Alyssum murale*, as an hypperaccumulator plant, the presence of Nickel, Chromium and Cobalt in soil and plants and also the vegetation of serpentine soils in Albania. There are some few other species in spontaneous associations with hyper accumulator plants. Serpentine soils are poor in Ca content and rich in Mg. The report Ca/Mg is reversed in compare with a normal soil and varies from 0.1 to 0:26. The pH in serpentine soils is also different; it varies from 6.12 to 7.64 or from slightly acid to basic trend. The Co content in soil ranges from 143.14 to 354.32 mg/kg DM; The content of Cr is higher; from 275.65 to 764.32 mg/kg DM and the content of Ni is reaching 1987.32 mg/kg DM. The ratio between Ca and Mg in plants is normal and varies from 1.51 to 4.94. The Co content reaches 689.12 and is lower than the Cr content that reaches more than 2000 mg/kg DM. In the soils with a pH lower than 7, Ni content reaches about 1.9% DM.

Key words: heavy metals, *Alyssum murale*, Ni, Cr, Co, soil, plant, serpentine

Vol. 6 (3): 291-296 (2016)

THE ROLE OF FOREIGN DIRECT INVESTMENT IN THE ALBANIAN ECONOMY – SPECIAL FOCUS ON AGRICULTURE SECTOR

Eralda Shore[1], Alvina Coku[2], Edmond Kadiu[3], Flora Merko[4]

[1]Ideatel sh.p.k. Coordinator, Tirana, Albania;
[2]Protik Tirana, Albania;
[3]Agricultural University of Tirana, Albania;
"Aleksander Moisiu" University, Durres, Albania;

E-mail: eralda.shore@gmail.com

Received May, 2016; Accepted June, 2016;

ABSTRACT

Knowing the efects of Foreign Direct Investment (FDI) as a means of encouraging investment, it underscores the need for accurate measurements and detailed statistics of FDI for assessing their relationship with economic growth and its impact on various economic sectors, mainly in the agricultural sector. The main goal is to identify the role and barriers factors, in terms of increasing the flow of FDI in Albania. An important aspect of the aim of this research is to identify and evaluate the role and impact of FDI in Albanian agriculture, trends and issues, major obstacles to FDI in this sector, focusing in Korça and in municipalities. Over the past decade, the flow of foreign direct investment, performed in Albanian agricultural economy played an important role in increasing the productivity and efficiency of production, employment and domestic exports. The objectives of this study dealing with the analysis of FDI as an important factor for developing countries in terms of globalization of the world economy as well as direct or indirect impact they have on the Albanian economy with the main focus on agriculture. The importance of this first study is to give a better understanding of the role of FDI in the country's economy in general and agriculture in particular. The significance of developments in recent years in Albania, which have had a positive impact on the business climate in the country. For years, the business climate in Albania has been improving and growing interest of foreign investors comes and becomes greater, due to macroeconomic stability and implementation of reforms in the country.

Key words: FDI, Agricultural products, Work force, Municipalities Korca area, Business climate, Willingess to invest.

Vol. 6 (3): 297-304 (2016)

HISTOLOGICAL STUDY OF LIVER, KIDNEY AND TESTES OF FERAL PIGEON (COLUMBA LIVIA) LIVING IN CORTYARD OF FERRONICKEL SMELTER IN DRENAS TOWN-KOSOVO

Albana Plakiqi Milaimi[1*], Qerim Selimi[1], Artan Trebicka[2], Astrit Milaimi[3]

[1]Department of Biology, Faculty of Mathematical and Natural sciences, University of Prishtina, Prishtina, Kosovo;
[2]Department of Biology, Faculty of Natural Sciences, University of Tirana, Tirana, Albania;
[3]Primary and lower secondary school "Haziz Tola", Prizren, Kosovo;

*Email: aplakiqi@ymail.com;

Received May, 2016; Accepted June, 2016;

ABSTRACT

This study was aimed to asses and monitors the environmental pollution with heavy metals (Ni, Pb, Cd, Cu and Zn) of area around ferronickel smelter in Drenas town - Kosovo. For this purpose twenty specimens of feral pigeon (*Columba livia;* 20 birds; 11 males and 9 females), were collected in Ferronickel smelter courtyard, also the same (20 birds, 9 males and 11 females) in Lubizhdë village (non-contaminated area - control group) to assess the effects the environmental pollution from ferronickel smelter on histology of liver, kidney and testes. In the liver, we found out the histological alterations, ranging from leukocyte infiltration, tissue vacuolization, extended of interstitial spaces and necrosis; in the kidney we found out the desquamation of epithelia, renal tissue degeneration, tissue vacuolization, leukocyte infiltration, extended of subcapsular of glomerular spaces, glumerular adhesion and necrosis. Also, in the testes we found out the desquamation of epithelia, atrophy and necrosis. The control groups of birds have had very small number of these aforementioned lesions. The histological changes could be the result of the high concentration of heavy metals (Ni, Pb, Cd, Cu and Zn) in the liver, kidney and testes of these birds from ferronickel area previously analyzed.

Keywords: Heavy metals, pigeon, histological changes, liver, kidney, testes

Vol. 6 (3): 305-310 (2016)

GENETIC VARIATION FOR SPIKE PRODUCTION CAPACITY OF F3-GENERATION IN BREAD WHEAT

Shukri Fetahu[1], Sali Aliu[1], Imer Rusinovci[1], Dukagjin Zeka[1], Qëndrim Shabani[1], Avni Behluli[1], Besnik Sadriu[1], Burim Ahmeti[1], Fetah Elezi[2]

[1]University of Prishtina "Hasan Prishtina", Faculty of Agriculture And Veterinary, Kosova;
[2]Agrucultural University of Tirana- Faculty of Agriculture and Environment, Tirana Albania;

E-mail: shfetahu@hotmail.com; shukri.fetahu@uni-pr.edu

Received April, 2016; Accepted May, 2016;

ABSTRACT

The aim of the research was to determine the genetic variation for the spike production capacity in F3 generation, and the identification of genotypes with higher genetic production potential, which is one of the ways of development and selection of new wheat cultivars. Experimental formula was: (10G x 3R x 10 plants) = 300 spikes x 4 parameters = 1200 results. The range of genetic variation for the spike components was determined for: the number of grains per spike (NGS), the spike weight (SW) g spike^{-1}, the grains weight per spike (GWS) g spike^{-1} and spikes harvest index (HI%), for the 10 genotypes in F3 - generation. The variation values for the spike components compared with the average effects of genes or (μF3) were NGSμ (±57.78%), SWμ (±59.80%), GWSμ (±63.27%) and spike HIμ (±19.79%). The genotype G-8/F3 is the most promising for the spike production capacity. The results of the research, identified the highly significant differences for spike components in the genotypes of F3 generation for the level of LSDp0.05 and LSDp = 0.01.

Key words: Spike, component, generation, grain, harvest index.

Vol. 6 (3): 311-318 (2016)

THE DISTRIBUTION AND ANALYSIS OF GREEN SPACES IN AMASYA CITY, TURKEY

Mustafa ERGEN[1]

[1]*Amasya University, Faculty of Architecture, Department of Urban design and Landscape Architecture, Turkey;*

E-mail: mustafaergen2002@yahoo.com

Received May, 2016; Accepted June, 2016;

ABSTRACT

The arrangement of green spaces in urban development plays an important role in the rebuilding of lost ecosystems connected with urban development dynamics. It is important that these green spaces serve the people living in the city and that planning be undertaken to protect green spaces. ArcGIS will be used for the analysis on green areas in Amasya. It will make an understandable approach of green areas distribution and help to analyze of urban green areas. This study will present the distribution of active and passive green spaces in Amasya by neighbourhood, and green areas will be calculated according to the square meters per person at the neighbourhoods. It will also determine whether the green space is planned or not and the relationship between active-passive green space and population using Pearson's product-moment correlation.

Key words: green space, population, Amasya City

Vol. 6 (3): 319-322 (2016)

RISK OF CADMIUM POLLUTION IN GREEN SPACE OF RASHT CITY AND ENVIRONMENTAL HEALTH

Sahar Tabibian

Department of Agriculture and Natural Resources, Payame Noor University , P.O. Box, 19395-3697,Tehran,IRAN;

Email: tsahart@yahoo.com;

Received May, 2016; Accepted June, 2016;

ABSTRACT

The urban green space and environment should be considered to be among the most fundamental elements of the sustainability of natural and human life in the new citizenship. The present research is intended to evaluate the impact of irrigation using urban waste water of Cadmium (Cd) in the soil and leaves of the pine trees of Rasht in the forest territories of Rasht. For this purpose, following the exact specification of the geographical and topographical attributes of under treatment area, 100 sample trees were implemented randomly –systematically in each compound studied. Approaching the end of growth season, five trees were selected randomly in each of the plats and samples of leaves were collected from the parts near to the end of the crown and the part which was adjacent to the light. At the foot of each of the trees selected, a soil profile was dug and samples of soil were extracted from three depths of 0-20, centimeters. The measurements done in the laboratory showed that the density of nutritious elements of the samples of leaf and soil in the compound irrigated with waste water .The results of the present research suggest that urban can be used as a source of irrigation whereas muck can be employed in forestation and irrigation with precise and particular supervision and control.

Keywords: Irrigation, forestation, urban waste water, pine, waste water.

Vol. 6 (3): 323-328 (2016)

ORGANOCHLORINE PESTICIDES IN HUMAN MILK SAMPLES

Senar Aydin, Mehmet Emin Aydin, Fatma Beduk*

Necmettin Erbakan University, Department of Environmental Engineering, Konya, TURKEY. *Email:*

Email: * fabeduk@konya.edu.tr; sozcan@konya.edu.tr; meaydin@konya.edu.tr;

Received May, 2016; Accepted June, 2016;

ABSTRACT

This study aims to determine levels of Organochlorine Pesticides (OCPs) contamination in human milk. Human milk samples were taken from 45 healthy mothers living in the Konya area for at least 5 years. General demographic characteristics of mothers were determined in the means of age, diet, smoking habit, occupational exposure etc. Sample extraction was performed by vortex and cleaned up by column chromatography. OCPs (α-, β-, γ- and δhexachlorocyclohexane (HCH), heptachlor, heptachlor epoxide, dieldrin, aldrin, endrin, endrin aldehyde, endrin ketone, endosulfan I, endosulfan II, endosulfan sulfate, p,p'-DDE, p,p'-DDD, p,p'-DDT, methoxychlor, chlordane I, chlordane II) analyses of the extracts were carried out using gas chromatography micro electron capture detector (GC/μ-ECD, Agilent 6890N, Agilent Technologies, CA, USA). Recovery ratios were between 70±5 % and 109±5%. The mean age of mothers was 28.2. The lipid content of the milk samples was ranged from 0.43 to 6.47% (average 2.20%). Mean total OCPs concentration was determined as 371.2±34.57 ng/g lipid. Dieldrin was determined in highest concentration (155.35±406 ng/g lipid). Total mean HCH (α, β, γ, δ), DDT (p,p-DDE, p,p-DDD, p,p-DDT), heptachlor (heptachlor, heptachlor epoxide), endosulfan (endosulfan I, endosulfan II, endosulfan sulfate), endrin (endrin, endrin aldehyde, endrin ketone) were determined 42.45, 37.13, 14.54, 37.13 and 62.49 ng/g lipid, respectively. OCPs concentrations determined in this work were below the values reported in similar works carried out in Turkey and in the World.

Keywords: Organochlorine pesticides (OCPs), human milk, contamination, risk.

Vol. 6 (3): 329-340 (2016)

ESTIMATING AIR POLLUTION QUALITY IN ISTANBUL CITY CENTRE BY GEOGRAPHIC INFORMATION SYSTEM

Sukru Dursun[1,*], Nahida Hameed Hamza Alqaysi[1,2]

[1]Environmental Engineering Department, Engineering Faculty, Selcuk University, Konya, Turkey;
[2]Civil Engineering Department, Engineering Faculty, Diyala University, Diyala, Iraq;

E-Mail: sdursun@selcuk.edu.tr; nahida_mml@yahoo.com;

Received May, 2016; Accepted June, 2016;

ABSTRACT

Air pollution in urban areas comes from a wide variety of sources, including industries, motor vehicles, and in winter due to use of poor quality coal for heating. Istanbul, which is the largest and most populated urban area, and the centre of industry, economics, finance and culture in Turkey, these causing increasing the atmospheric pollution in Istanbul, coal dominated energy structure is also one of the major causes of air pollution in this city. A study involving 28 stations in Istanbul city, monthly average of PM_{10}, SO_2, NO_2, NO, NO_x, CO and O_3 for 2015 was collected from the Government air quality measurement network, the data were interpolated using a geographic information system by IDW technique for each pollutant according to capability of GIS among air pollution modelling, where built model for average of pollutants for winter and summer seasons. The spatial and temporal results showed that PM10, NO and NO_x concentrations increased in the winter because of heating coal, and in an industrial, and non-green areas such as Esenyurt, Yenibosna, Selimiye, Aksaray, Umraniye, Çatladikapı and Kağithane, and not within the Air Quality Index (AQI) of Turkey, while NO_2 increased in summer (These gases form when fuel is burned at high temperatures, and come principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers). While concentrations of ozone, CO and SO2 did not reveal any significant change throughout the whole studied period.

Keywords: Air, Pollution, Geographic Information system, Inverse Distance Weighted (IDW) Modelling. Istanbul, sulphur dioxide

Vol. 6 (3): 341-346 (2016)

THE IMPORTANCE OF FORAGE CROPS FOR SUSTAINABLE AGRICULTURE

Metin Deveci[1], Özlem Önal Aşçı[1], Gürkan Demirkol[1], Yavuz Selim Karakuş[2]

[1]Ordu University Faculty of Agriculture Department of Field Crops, 52200, Ordu, Turkey;
[2]Agriculture and Rural Development Support Institution, 28000, Giresun, Turkey;

Email: devecimetin@gmail.com

Received May, 2016; Accepted June, 2016;

ABSTRACT

In traditional agriculture, there are many harmful effects for environment in obtaining adequate and quality food production which is need for rapidly growing world population. Chemical fertilizers and pesticides that are used for resolving the lack of nutrients and improving the fertility in soil, bring important hazards with the time. This creates unfavorable condition for the concept of sustainable agriculture that on the basis of conserve the natural resources without damaging cycle of ecological agriculture. Forage crops which have an important role in conserving soil fertility, have the possibility of being a solution against the harmful effects caused by traditional agriculture. Forage crops that need to be emphasized more in the concept of sustainable agriculture, are cultivated in high rates in developed countries, despite it is not being sufficiently in Turkey. Furthermore rangelands decrease their fertility and quality because of excessive and untimely grazing for supplying quality roughage that is needed by animals. Erosion problem is increasing as a result of weak vegetation in rangelands and therefore the plant diversity is damaged in Turkey where has 12 000 plant species 3 600 endemic species. So the loss of plant diversity is not only problem for Turkey, it is very important for the world. One of the way to prevent this problem are sustainable agriculture activities.

Key words: Forage crops, soil fertility, sustainable agriculture.

Vol. 6 (3): 347-364 (2016)

SUITABILITY OF WELL GROUND DRINKING WATER IN KONYA CENTRE BY GEOGRAPHIC INFORMATION SYSTEM

Sukru Dursun, Mushtaq Abdulameer Alwan Almuslehi

Environmental Engineering Department, Engineering Faculty, Selcuk University, Konya, Turkey;

E-Mail: sdursun@selcuk.edu.tr; mushtaq.abdulameer@yahoo.com;

Received May, 2016; Accepted June, 2016;

ABSTRACT

Groundwater systems globally provide 25 to 40 percent of the world's drinking water. The groundwater pollution which is of some concern in the area is mainly by industrial waste-Disposals and agricultural activities. Konya is one of the most significant industrial cities in Turkey. Groundwater is essential for drinking water source in the Konya city centre. The purpose of this study is Suitability of groundwater for drinking water in Konya centre by calculating the WQI and using Geographical Information System (GIS) techniques. To evaluate spatial and temporal of the groundwater quality by using geostatistical analysis based on data from 80 groundwater wells, groundwater samples were analysed for electrical conductivity (EC), hardness (°F), Ca^{2+}, Mg^{2+}, Total Hardness (TH) as $CaCO_3$, Cl^- and SO_4^{2-} and Water Quality was compared for the World Health Organization WHO drinking water standards. ArcGIS package programme was used for the application of a kriging method, semivariogram model selection, and development of a distribution pattern of groundwater quality parameters and best model has been chosen for each parameter. It was specified in many places that (EC), hardness, Ca^{2+}, Mg^{2+}, TH and SO_4^{2-} in most samples specially in Selcuklu region exceeded the allowable levels according to WHO and EC standards, and the resulting undesirable effect on human system, which indicated that the groundwater might be polluted and unsafe for drinking. For this reason, in this investigation water quality and level in WQI were analysed using computer modelling programme.

Key words: GIS, Groundwater quality, WHO, Geostatistical analysis, Kriging.

Vol. 6 (3): 365-374 (2016)

USAGE OF FORAGE PLANTS TO PREVENT EROSION

Metin Deveci[1], Yavuz Selim Karakuş[2], Sevda Ocak[3]

[1]Department of Field Crops, Agriculture Faculty Ordu University, 52200, Ordu/Turkey.;
[2]Agriculture and Rural Development Support Institution, 28000, Giresun/Turkey;
[3]Department of Environmental Engineering, Engineering Faculty Giresun University 28000, Giresun/Turkey;

E-mail: yavuz.karakus@tkdk.gov.tr; yavuzselimkarakus@mynet.com; sevdaocaktr@gmail.com;

Received May, 2016; Accepted June, 2016;

ABSTRACT

Today, soil erosion is considered as a natural disaster that affects direct or indirect many countries. It isn't thought merely soil loss. Along with soil loss, nutrients, organic matter of soil and wildlife disappear, at the same time it is observed that increasing the global warming and flooding. Besides these events don't only influence negatively the ecosystem but also it affects human life. Because 99.7% of food stuffs is provided from soil. In the face of disaster many techniques are used in all around the world and unfortunately these techniques are inadequate. This review reveals that what is the size of erosion in world and importance of using as a method of the forage plants on erosion control comparison of other method. It is known as true that there is inverse proportion between rates of plant cover and erosion intensity. The advantages of forage plants are cheaper and easy implementing, results of applications can be seen in short time as per other methods. Thanks to forage plants can grow in conditions of extreme soil and climate, they are unique plants for erosion control. Therefore, these plants can be easily used uncultivated erosion areas, fallow lands and as second crops to be summer and winter output in agriculture lands. Additionally, they develop structure of chemical and physical of soil and capacity of water hold is increased. On the other hands forage plants constitute basis of livestock sector. If we develop using the forage plants for erosion control also feeds of animal and vegetal will be increased.

Key Words: Soil Loss, Erosion, Forage Plants.

+

Vol. 6 (3): 375-380 (2016)

DETERMINATION OF OPTIMUM CONDITIONS FOR CO-DIGESTION OF CATTLE MANURE WITH CHICKEN WASTES AND CHEESE WHEY

Rahman Çalhan[1], Durmuş Kaya[2], Volkan Çoban[2]

[1]Karabük University, Faculty Of Engineering, Environmental Engineering Department, 78050, Karabük, Turkey;
[2]Kocaeli University, Technology Faculty, Energy Systems Engineering Department,41380, Kocaeli, Turkey;

Email: rahmancalhan@karabuk.edu.tr

Received May, 2016; Accepted June, 2016;

ABSTRACT

Aim of this study determine the optimum conditions for producing biogas by co-digestion of cattle manure, chicken waste and cheese whey. The amount of cattle manure was kept constant and chicken waste and cheese whey was fed at different organic loading rates. The system was operated on batch mode under mesofilic (38 ^{o}C) conditions. Effect of stirring speed on the biogas yield was evaluated at the same time. Results show that maximum biogas yield was obtained from R6 which contains of %50 cattle manure, %25 chicken waste and %25 cheese whey. Maximum biogas yield was obtained 0,142 liter/liter.day and was observed continuously stirring of the wastes didn't have a positive impact.

Keywords: Cattle manure, chicken waste, cheese whey, biogas, anaerobic co-digestion

Vol. 6 (3): 381-388 (2016)

PREVALENCE AND FACTORS ASSOCIATED WITH HEARING IMPAIRMENT IN PRESCHOOL CHILDREN IN ALBANIA

Suela Sallavaci[1*], Ervin Toci[2], Ylli Sallavaci[1], Gentian Stroni[3]

[1]Service of Otolaryngology, University Hospital Centre "Mother Teresa", Tirana, Albania;*
[2]Department of Epidemiology and Health Systems, Institute of Public Health, Tirana, Albania;
[3]Service of Infectious Diseases, University Hospital Centre "Mother Teresa", Tirana, Albania;

E-mail: sallavacis@hotmail.com;

Received May, 2016; Accepted June, 2016;

ABSTRACT

Hearing impairment (HI), a condition that affects disproportionally children in developing countries, could negatively impact the development of communications skills of involved children when not timely detected and treated. We aimed to assess the prevalence of HI and the factors and health conditions associated with it, among preschool children in Albania. This is a cross-sectional survey. During November 2009-May 2011 a simple random sample of 400 preschool children aged 4-6 years old and attending public kindergartens in urban and rural areas of Tirana, the capital of Albania were examined about hearing ability via tonal audiometry and tympanometry. HI was defined by a threshold of ≥20 dB in the better ear. In addition, objective examination of ear, nose and pharynx was carried out in order to detect potential structures and/or diseases contributing to HI. Binary logistic regression was used to assess the factors associated with HI in this sample of preschool children. In this sample of children (51% females, 73.5% urban residence) the total prevalence of HI was 16%. Otitis Media with Effusion, Suppurative Otitis Media and past Otitis Media was present in 14.6%, 1% and 13.1% of cases, respectively. Upon adjustment for several confounding effects, the only factors significantly associated with HI were current Otitis Media in objective examination (OR=5.62; 95%CI: 2.18-14.4) and recurrent Otitis Media in anamnesis (OR=1.82; 95%CI: 1.33-2.51). HI is a common and serious condition that might negatively affects the future development of preschool children. Routine screening of newborn and/or preschool children is an effective way to address this problem in Albania.

Key words: otitis media hearing impairment, preschool children, screening.

Vol. 6 (3): 389-394 (2016)

APPLICATION OF PISTACHIO SHELL (PSS) AS LOW-COST ADSORBENT FOR THE REMOVAL OF Pb(II) FROM AQUEOUS SOLUTION

Oğuzhan Gök[1], Özgül Çimen Mesutoğlu[2]

[1,2]Aksaray University, Department of Environmental Engineering, Aksaray, Turkey;

Email: oguzgok@gmail.com; ozgulcimen@gmail.com;

Received May, 2016; Accepted June, 2016;

ABSTRACT

In recent years, the removal of heavy metals from water by using low-cost agricultural waste activities were accelerated. In the present study, pistachio shell (PSS) was used to remove Pb(II) from aqueous solution using batch experiments. Some parameters such as dose of the adsorbent and pH of solution were investigated in order to know the room temperature, 100 mg/L initial Pb(II) concentration and, particle size of between 0.5 and 2.0 mm and adsorption ability of the adsorbents. The removal efficiency of Pb(II) ions was found to 9.71 mg/g of PSS. The results of isotherm and kinetic studies show that the Langmuir isotherm and pseudo-second-order kinetic showed better correlations with the experimental data. The SEM images of adsorbent (PSS) before and after Pb(II) adsorption were analysed to understand the adsorption process of Pb(II) onto PSS. These results suggest the PSS turned out to be effective natural low-cost adsorbent for capturing of Pb(II) ions from aqueous environment.

Keywords: Adsorption, isotherm, kinetic, low-cost adsorbent, Pb(II)

Vol. 6 (3): 395-400 (2016)

GEOCHEMICAL BACKGROUND HEAVY METALS AND SPATIAL DISTRIBUTION OF STREAM SEDIMENTS IN DUKAGJINI BASIN

Naser Peci[1], Behxhet Shala[1], Flurije Sheremeti[1]

[1]University of Mitrovica "Isa Boletini", Faculty of Geosciences, Mitrovicë, Kosovo;

Email: naser.peci@umib.net

Received May, 2016; Accepted June, 2016;

ABSTRACT

Heavy metal concentrations of stream sediments from Dukagjini Basin were investigated to evaluate the geochemical distribution of selected elements. Dukagjini basin together with the Kosovo Basin represents the largest sedimentary basins in Kosovo. Tertiary basin of Dukagjin, with an area of 1700 km^2 is located in the western part of Kosovo. The soils in this basin are used mainly for agriculture. The aim of this paper is to determine threshold values using statistical methods that can explain their spatial distribution. Stream sediment geochemistry can be used to quantify natural geochemical baselines and anthropogenic effects. A total of 574 stream sediment samples were analyzed for arsenic (As), chromium (Cr), copper (Cu), manganese (Mn), nickel (Ni), lead (Pb) and zinc (Zn). The mean concentrations of heavy metals are in decreasing order as follows: Mn > Cr > Ni > Zn > Cu > Pb > As. Analysis of samples has shown no evidence of Hg content. The results show that the elements Cr and Ni exceed the threshold values according to the method Median and Median Absolute Deviation (Median+2MAD) for 155 respectively 153 samples. Spatial distribution for Cr and Ni reflect the elevated geochemical background of the wider area due to the presence of ophiolites therefore it may be considered their geogenic origin. This work is important to register the current levels of metals so that any change in concentration can be monitored and managed.

Key words: Dukagjini basin, stream sediment, heavy metals, statistical analysis, spatial distribution

Vol. 6 (3): 401-410 (2016)

GREENHOUSE GAS REDUCTION THROUGH USE OF WASTE AS AN ALTERNATIVE FUEL

Fatma Didem Tunçez

KTO Karatay University, Akabe Alaaddin Kap Str. No: 130 42020 Karatay/Konya Turkey;

Email: didem.tuncez@karatay.edu.tr

Received May, 2016; Accepted June, 2016;

ABSTRACT

The problem caused by the usage of storage and incineration methods for disposal of waste is one of the most important environmental problems today. The usage of waste as alternative fuels or raw materials in the cement industry reduces the consumption of nonrenewable energy resources and prevents the rapid depletion of natural resources. The co-processing of waste with raw materials in the cement industry is an opportunity to reduce carbon dioxide emissions. In the cement industry, a cement clinker kiln with a long retention time and an oxidation atmosphere at high temperature provides combustion of waste completely. On the other hand, the usage of alternative energy resources has a positive impact on reducing the dependency on fossil fuels and in reducing CO_2 emissions. The co-processing of waste reduces carbon dioxide emissions resulting from the use of fossil fuels during the production of cement and prevents carbon dioxide emissions caused by incineration plants. Non-renewable energy resources in the world can be evaluated economically. Waste disposal can be carried out and carbon dioxide emissions caused by waste incinerators can be prevented by using waste instead of fossil fuels in the cement industry. The aim of this paper is thus to show the effect of using waste as an alternative fuel to reduce greenhouse gas emissions.

Keywords: Cement Industry, Waste, Carbon Dioxide Emissions, Energy Recovery

Vol. 6 (3): 411-414 (2016)

PROBABILITY SAMPLING METHODS IN FISHERIES STUDIES

Şennan Yücel[1], Birol Baki[2]

[1]Sinop University, Faculty of Fisheries, Department of Fisheries Basic Science, Sinop,Turkey;
[2]Sinop University, Faculty of Fisheries, Department of Aquaculture, Sinop. Turkey;

Email: syucel@sinop.edu.tr;

Received May, 2016; Accepted June, 2016;

ABSTRACT

In this study, the probability sampling methods and the questions that have to be taken into consideration in the investigations of the aquaculture are manifested. In the researches the data is produced by the information gathered by the population units. The data could be seen objectionable in the evaluations as they are not able to represent the population enough in respect of qualitative and quantitative perspective. The avaliable sampling methods that are developed depending on the quality of the research, are specified according to the aim and conditions. The most credible result of the population are the results that are taken from the whole population. To get at the whole population is difficult because of the features of the population, and the restrictors such as skilled staff, time and high cost. Thus in scientific studies instead of reaching out the whole population, the representative sampling are made. The aquaculture, though seems a scientific branch that focuses on hunting and cultivation; in fact it is a multidiciplinary branch of science. The researches that are held on aquaculture are conducted more difficultly than other diciplines due to the features of the study area. Consequently, sampling methods are to be selected according to the study. The sampling methods are basically divided into two groups of probable and improbable sampling. In this study, probability sampling methods which are commonly used in aquaculture studies, the crucial points that have to be taken into consideration in the practice of the existed method as well as how the sampling that is going to be achived in the path of accessing the credible data are expressed.

Key words: Sampling, probability sampling methods, sample, fisheries

Vol. 6 (3): 415-424 (2016)

EVALUATION OF SOLAR ENERGY, ITS PRESENT STATUS, POTENTIALS, POLICIES AND THE LATEST DEVELOPMENTS IN TURKEY

Fatma Canka Kilic*

Kocaeli University, Kocaeli Vocational School, Department of Electrical and Energy Technologies, Kullar, Basiskele, Kocaeli, Turkey;

*Corresponding Author Address: Department of Electrical and Energy Technologies, Kocaeli Vocational School, Kocaeli University. Mahmutpasa Cad. Mahmutpasa Mah. No:151, 41140 Kullar, Basiskele, Kocaeli, Turkey
Tel: +902623494351 Fax: +902623493997

E-mail: fatmacanka@hotmail.com

Received May, 2016; Accepted June, 2016;

ABSTRACT

Thanks to its perfect geographical position, Turkey has a huge solar energy potential. According to Turkey's Solar Energy Potential Atlas (SEPA), total sunshine duration is 2738 hours, annually and the quantity of average total incoming solar energy is 1527 kWh/m² year. Today there is great a tendency towards clean, dependable and sustainable renewable energy productions to cover the increasing energy demands in all over the world. Renewable energy productions are subsidized by the governments and besides, these energy productions assure the new employment opportunities. Renewables are accepted as an alternative solution to fossil fuels not only for the generation of clean energy, but also for the protection of the environment and the entire life on earth. In this study, present status of solar energy, its potentials, productions, government incentives and solar energy usage in Turkey have been examined according to the latest developments. In this way, it has been aimed to contribute to the improvements in renewable energies and bring forth people's awareness to the subject.

Keywords: Renewable energy, solar energy, incentives, Turkey

Vol. 6 (3): 425-430 (2016)

LAND DEGRADATION IN KOSOVO

Behxhet Shala[1]*, Naser Peci[1], Fidan Ferati[2]

[1]University of Mitrovica "Isa Boletini", Faculty of Geoscience, MIP, 40000 Mitrovica – Kosovo;
[2]Polytechnic University of Tirana, Faculty of Geology and Mining, Sheshi Nënë Tereza, Tiranë 1000, Albania;

Email: behxhet.shala@umib.net

Received May, 2016; Accepted June, 2016;

ABSTRACT

Besides other environmental problems, a particular concern in Kosovo has been created by the fast and uncontrolled degradation of land, first of all agricultural land. The purpose of this paper is to analyze this phenomenon and present the driving factors and different environmental and social problems it has caused, by using maps and documents of different periods of time. The construction sector, first of all housing, is one of the most problematic sectors in this aspect. One of the most intensive construction sides with residential houses in an area of expansion of the Mitrovica city has been taken as a case study. During a period of 11 years (2001-2012) 252 individual houses or other annexes were built within an area of 68.2 ha of agricultural land. Besides the use of an effective surface of 22.5 ha of land for construction, the remaining area is fragmented and has lost its value to use for agricultural purposes. The results show that such a development of settlements with individual residential buildings and no urban planning has caused significant loss of the most valuable areas of land and that this trend is continuing. Unfortunately, this case can be taken as representative sample for the whole Kosovo, especially in the nonurban areas.

Key words: Land use, degradation, construction, environment, planning

Vol. 6 (3): 431-436 (2016)

PRODUCTION VOLUME, PRICE AND VALUE ANALYSES OF TURKISH AQUACULTURE PRODUCTS

Birol Baki[1], Şennan Yücel[2]

[1]Sinop University, Faculty of Fisheries, Department of Aquaculture, Sinop, Turkey;
[2]Sinop University, Faculty of Fisheries, Department of Fisheries Basic Science, Sinop, Turkey;

Email: bbaki@sinop.edu.tr; sennanyucel@hotmail.com

Received May, 2016; Accepted June, 2016;

ABSTRACT

In this study, production volume, price and value analyses of rainbow trout (*Oncorhynchus mykiss*), sea bass (*Dicentrarchus labrax*) and sea bream (*Sparus aurata*) produced in Turkey for the years 2005-2014 were conducted. Turkey is the second largest aquaculture country after Norway and the annual Turkish aquaculture production has reached 235133 tons in 2014. 48.31% (113.593 tons) of this production comprises rainbow trout, 31.75% comprises (74.653 tons) sea bass and 17.81% comprises (41.873 tons) sea bream. Examining the prices for the years 2005-2014, it was determined that the price for rainbow trout varied between 3.88 USD and 2.20 USD (freshwater) and between 4.83 USD and 3.27 USD (sea) while the price for sea bass changed between 6.29 USD and 4.68 USD, and the price for sea bass changed between 6.12 USD and 3.60 USD. It was found that the annual production values of the species increased based on the amount of production, and the highest value was determined in 2012 with 402.22 million USD in sea bass. It was found that the selling price and the total value of production of the species were affected by the production volume of the species, domestic and foreign export demand and the exchange rates.

Keywords: Turkey, aquaculture, production volume, average price, total value

Vol. 6 (3): 437-442 (2016)

USING A GEOSPATIAL INTERFACE (GeoWEPP) TO PREDICT SOIL LOSS, RUNOFF AND SEDIMENT YIELD OF KOKOLET CREEK WATERSHED

Esin Erdoğan Yüksel*, Mehmet Özalp, Saim Yıldırımer

Artvin Coruh University, Faculty of Forestry, Artvin, Turkey;

*Email: eeyuksel@artvin.edu.tr

Received May, 2016; Accepted June, 2016;

ABSTRACT

Soil loss and sedimentation processes currently stand as one of the most serious environmental issues in Turkey. Improper use and conversion of lands along with recent shifts in precipitation and runoff frequencies caused by the global climate change are thought to be the main reasons for these issues. However, in order to take necessary precautions against these problems, firstly, both the amount and the degree of soil erosion must be determined. Recently, the efforts on obtaining data on soil erosion have shifted towards using prediction models including GeoWEPP, a geospatial interface software integrating the WEPP (Water Erosion Prediction Project) with GIS. In this research, soil loss, runoff and sediment yield from the Kokolet Creek Watershed (4057.02 ha) were predicted using GeoWEPP. Required soil, climate, management and slope files were established and the watershed was subdivided into 15 smaller hydrological units (SHUs) for an easier run. The results showed that the annual total soil loss amount was 23559 tons for the watershed. While the total sediment reaching to the channels was around 10225 ton/yr, the sediment yield was 2.52 ton/ha/yr, over the trash hold value of 1 ton/ha/yr. Moreover, the GeoWEPP predicted about 735 mm of total annual precipitation for the watershed and almost no runoff generated in the SHUs containing more than 70% forest and/or grassland areas. On the other hand, 209.73 mm of runoff was produced within SHUs where the majority of the land was converted to agriculture. The sediment delivery ratio (SDR) was around 0.782 for the watershed.

Keywords: Sediment yield, Watershed, GeoWEPP, Artvin

Vol. 6 (3): 443-448 (2016)

ENERGY EFFICIENCY INVESTIGATION OF A FURNACE BURNER REPLACEMENT AT REFINERY DISTILLATION UNIT

Volkan COBAN

Department of Mechanical Engineering, Karabuk University, Balılarkayası Mevkii, 78050 Karabuk, Turkey;

Email: coban.volkan@yahoo.com.tr

Received May, 2016; Accepted June, 2016;

ABSTRACT

The reduction, of energy cost related to the oil final product, related to energy efficiency is gaining importance day by day. Oil refineries are high energy consuming systems. Furnaces used in various parts of refineries are the main cause of this consumption. The flue gas oxygen level can be reduced by replacing old type burner with ensuring better combustion in furnaces. In this study, the effect of energy efficiency was investigated for replacing burner in a furnace that supplies heat to reboiler side. The flue gas oxygen values were measured during operating conditions and after application in the furnace burners. According to the results, while the flue gas oxygen value before application of the burner replacement is 5%, it can be reduced to 2,1%. Thus, the efficiency of the furnace has increased from the 88.7% to 90.08%.

Keywords: Energy efficiency, Burner replacement, Oil Refinery Furnace, Crude Oil Distillation Unit

Vol. 6 (3): 449-454 (2016)

SAFETY PRECAUTIONS and REGULATION ON INDUSTRIAL BIOGAS PLANT: TURKISH MARKET

Selman Çağman

Department of Mechanical Engineering, Karabuk University, Balılarkayası Mevkii, 78050 Karabuk, Turkey;

Email: selmancagman@gmail.com

Received May, 2016; Accepted June, 2016;

ABSTRACT

Biogas, as one of the renewable energy sources, has become increasingly an important alternative energy source. Plants, which treat waste to produce energy, have moved to industrialized size with intensive studies in recent years. Efficiency and safe operation of these plants are very important for plants sustainability. For this purpose, safety measures must be standardized and applied to whole process from manufacturing to energy production within a biogas plant. In this study, all potential risks and necessary precautions taken against these identified risks are listed in a continuously running biogas plant. Moreover, it is also emphasized the necessity of drafting a regulation and the content of this regulation on this issue within Turkey.

Keywords: Biogas, plant safety, precautions, regulation

Vol. 6 (3): 455-460 (2016)

ASSESMENT OF MICROBIOLOGICAL AND PHYSICO-CHEMICAL PARAMETERS IN GJAKOVA WATERSHED

Arianeta Deva Nura[1], Etleva Hamzaraj[2]

[1]Department of Biotechnology, Faculty of Natural Sciences, University of Tirana, Tirana, Albania;
[2]Department of Biology, Faculty of Natural Sciences, University of Tirana, Tirana, Albania;

Email: arianetad@yahoo.com; etleva.hamzaraj@fshn.edu.al

Received May, 2016; Accepted June, 2016;

ABSTRACT

Gjakova watershed - Lake "Radoniqi" is situated 14 km from the city of Gjakova and was build in year 1978. Water catchment area to fill the "Radoniqi" Lake is 120 Km2 and it lies at an altitude of 600-2500 m, which is a clear indicator that the catchment area is far from settlements and sources of pollution. The main water supplier is river Lumbardh of Deqani with an average flow 5m^3/s. This study was conducted over a period of one year from February 2015-February 2016. Water samples were taken twice a month in three locations: River Lumbardh, Derivative channel and in the Lake. Samples were analysed for microbiological parameters: total coliform bacteria, fecal coliform bacteria, aerobic mesophilic bacteria and streptococcus faecalis as indicator of water pollution and physico-chemical parameters such as: temperature, turbidity, ph, dissolved oxygen, chloride, ammonium, nitrites, nitrates etc. Enumeration of bacteria is made by membrane filtration method and by counting colonies on plates with RBA, M-Endo Agar less, PCA and BEA agar. According to preliminary results as it was expected, there is a high load of coliform bacteria in the river Lumbardh comparing with two other locations (Derivative channel and Lake "Radoniqi) due to increased rainfall and summer season.

Key words: Lake "Radoniqi", Coliform bacteria, physico-chemical parameters