

Vol. 2 (3): 155-162 (2012)

INVESTIGATION OF TOXIC LEVEL OF SOIL LEAD POLLUTION BY PHYTOTOXICITY METHOD

Sukru Dursun^{1*}, Fatma Kunt¹, Esra Tezcan¹, E. Şule Yanıkaya¹, Hysen Mankolli²

¹Selcuk University, Engineering and Architecture Faculty, Environmental Engineering Department, 42003; Konya-TURKEY; ²Tirana Agriculture University, Environmental Ecology Department, Tirana- ALBANIA;

*Email: sdursun@selcuk.edu.tr

Received April, 2012; Accepted August, 2012

ABSTRACT

Heavy metal pollution in soils is one of the most important environmental problems. Heavy metal accumulation in soils has an important influence. It is not only on the fertility of soils and functions of ecosystem but also on the health of animals and human beings via food chains. Heavy metals have important causes in plant structure decreases the crop quality and yield due to inhibition of plant physiological activity, decreasing fertility and killing plants. Tolerance of plant to heavy metal toxicity depends on plant variety, element type, time of stress, plant tissue and organ. Therefore, knowing like a lead heavy metal quantity, and as well as damage formation process is important for plant growth and development. In present investigation *Ailanthus altissima* and *Lepidium sativum* L. plans were tested to measure toxicity of lead concentration in soil and aqueous solution. Seedling of the plant seeds was completely inhibited. There were increasing tolerances to lead concentration by *Ailanthus altissima*.

Keywords: Heavy metal, toxicity, plant metabolism, tolerance, leads

Vol. 2 (3): 163-166 (2012)

STRAWBERRIES CULTIVATION IN PVC SILVER FOIL

Sylë Sylani, Vahid Avdiu, Rexhep Shoshi

University of Prishtina Faculty of Agriculture & Veterinary, Department of Fruits & Grapes, Bul. „Bill Clinton“ 10000 Prishtinë, KOSOVA.

E-mail: ssylanaj@hotmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

In this research are presented the investigations results of the impact of the silver foil in pomological traits of three strawberry's cultivars (*Fragaria ananassa* Duch) Alba, Elsanta, Sonata and Dora planted in the open field. Researches were conducted during 2010-2011 in the testing field of the Faculty of Agriculture and included: the time of flowering, fruit maturity and pomological parameters (fruit mass, size and shape index). The designed experiment was approached with random method on four repetitions, for each repetition were investigated 25 plants x 4 repetitions = 100 plants for each parameter. Planting distances of cultivars were 40 x 30 cm in 2 rows per bed with drip irrigation system. Based on the obtained results, the strawberries cultivars differ among themselves according to its pomological traits. The average of the fruits beginning maturity was earliest for cultivar Alba (13.05), while the latest maturity average was for cultivar Sonata (16.06). Duration of fruits maturity was 35 days. The lowest yield for shrub is registered to cultivar Dora (0.434 g/plant), while higher yield had Sonata cultivar (0.841 kg/ plant). Differences between cultivars for investigated parameters were significant for both levels of 0,05 and 0,01.

Key words: strawberry, PVC silver foil, fruit traits

Vol. 2 (3): 167-172 (2012)

EVALUATION OF NON-PRODUCTIVE FUNCTIONS OF FOREST ECOSYSTEMS, DETERMINATION OF ALTERNATIVE MANAGEMENT MEASUREMENTS FOR BIODIVERSITY CONSERVATION

Merita Stafasani¹, Ylli Kortoci², Leka Gedeshi¹, Mirvjena Kellezi¹

¹*Agricultural University of Tirana, Forestry Sciences Faculty, Tirana, Albania*

²*Environment and Forest Agency, Tirana, Albania.*

E-mail: meritastafasani@yahoo.com

Received June, 2012; Accepted August, 2012

ABSTRACT

This study has been performed in the “Kerrabe-Gurre” area situated in central Albania. Some of the main goal of this study is to notice the between species diversity and ecologic biologic diversity and to evaluate the non-productive function of this forest. This study has been organized in three phases and there are two main methods used to evaluate the between species diversity and ecologic biodiversity. Syntax and Shanon index has been used to evaluate the ecologic biodiversity. Number of species for each association and in general has also been taken in consideration. Through this study anyone can have a proper idea about the importance of evaluating the biodiversity and how to manage the forest not only in productive way.

Key words: biodiversity, evaluation, conservation, quality, quantity, flora.

Vol. 2 (3): 173-176 (2012)

IMPORTANCE AND AGRICULTURAL USAGE OF *ATRIPLEX NITENS* SCHKUHR

Ramazan Acar¹, Sukru Dursun²

¹Selcuk University, Agriculture Faculty, Department of Agronomy, Konya-Turkey

²Selcuk University, Engineering Faculty, Environmental Engineering Dept., Konya-Turkey,

Email: racar@selcuk.edu.tr; sdursun@selcuk.edu.tr

Received April, 2012; Accepted August, 2012

ABSTRACT

Atriplex nitens Schkuhr. is located in natural areas of Central and Eastern parts of Anatolia in Turkey, that naturally grown at Central Europe, South-West Asia and Central Asia. *Atriplex nitens* Schkuhr is used as human food both in Europe and Anatolia as fresh and cooked in the early days of plant growth (10-20 cm). It can be used for animal feed as bait during flowering time and then. It has high of adaptation capacity and can growth in adverse soil conditions such as drought and salinity in the tolerant and easy training plant. It is annual crops growth with seeds. Since it has some problems with seed multiplication, emphasis has been given to propagation using different methods. Agricultural research is needed to establish the exact characteristics. Although it is used worldwide for soil rehabilitation, erosion control and forage production in problem areas, it is now well known in our country. Its taxonomic order is Kingdom *Plantae*, Subkingdom *Tracheobionta*, Division *Magnoliophyta*, Class *Magnoliopsida*, Subclass *Caryophyllidae*, Order *Caryophyllales*, Family *Chenopodiaceae*, Genus *Atriplex*, Species *Atriplex nitens* SCHKUHR.

Keywords: *Atriplex nitens* Schkuhr., Human food, animal feed plant, plant properties

Vol. 2 (3): 177-180 (2012)

FOREST BURNING AND ITS ROLE IN THE CONTAMINATION OF THE COMPONENTS OF THE ENVIRONMENT IN KOSOVO

Isa Tahiri^{1*}, Hysen Mankolli², Faton Kaqini¹, Edona Tahiri¹, Isa Ajeti¹, Nexhat Balaj¹, Sylejma Hyseni¹, Mentor Bejta¹

¹*Faculty of Geosciences and Technology, University of Prishtin, Republic of Kosovo;
Ministry of Education Science and Technology of the Republic of Kosovo;*

²*Tirana Agriculture University, Environmental Ecology Department, Tirana- Albania;*

Email : isatahiri1@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

In this paper we have presented the basic data regarding forest burning, pastures and different green areas from almost all of the areas in the Republic of Kosovo. As a result of forest burn, destructions are manifold taking into account their direct negative impact on the contamination of the components of the environment (air, water, land and biodiversity) such as: the direct impacts of the gas discharge on the environment from the timber burn and green goods burn, the negative impacts on watercourses which undergo manifold changes if forest areas around them are burned, the degradation of land by deserting it and the potential growth of flood and erosion phenomenon during the rainfall season, and negative impact on biodiversity of the area around which fires are caused. Recently, during the summertime when we have increased temperatures, we have exceeding problems caused from burning and that these problems are not rarely proven to be caused by the human factor, and other natural causes. We have also presented the data pertaining to the possible management of these situations and the responsible body capacities for preventing and managing emergency situations.

Key words: burn, forests, impact, environment components, environment degradation.

Vol. 2 (3): 181-186 (2012)

MAGNOLIATAE (DICOTYLEDONES) WITHOUT ASTERACEAE ON THE STUDENICA PEAK-KOSOVO

Shkëlzim Ukaj, Fadil Millaku, Elez Krasniqi, Ferat Rexhepi, Albona Shala

University of Pristina, Faculty of Natural Sciences and Mathematics, Department of Biology, Kosovo

E-mail: shkelzimukaj@hotmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Studenica Peak (600-1723 m) became part of the Sharri Mountains. In research conducted in the period 2008-2009 and 2011 within *Magnoliatae* (without *Asteracea*) 238 species are found in 168 genres listed within 50 families of vascular flora. From elements of flora, Euroasiatic floristic element dominates, while the dominant life forms are hemicriptophytes.

Key words: Studenica Peak, Vascular flora, Kosovo.

Vol. 2 (3): 187-190 (2012)

REMOVAL OF CADMIUM (II) ION FROM AQUEOUS SYSTEM BY DRY BIOMASS, LIVE AND HEAT-INACTIVATED *OOCYSTIS SOLITARIA* ISOLATED FROM FRESH WATER (BEYKAVAGI POND)

Baran Aşikkutlu¹, Betül Yılmaz Öztürk¹, Cengiz Akköz¹

¹ Department of Biology, Faculty of Science, Selcuk University 42100, Konya, Turkey

Email: baranasikkutlu@hotmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Today various organisms are increasingly used to remove toxic heavy metals from waters. In particular, studies in which various species of hydrophilic organisms are used for metal removal report various results. In this study, *Oocystis solitaria* which has wide distribution in natural waters was used. The alga sample used in the study was isolated from Beykavagı Pond (Konya/Turkey) and was reproduced in culture. After the pure culture obtained, the removal of Cadmium in water was examined in three different conditions of the organism. In the stages of study, direct living organism, inactivated biomass and dead biomass were used, respectively. The rate of Cd ion in the water was diluted down to 0,02-0,30mg/l so that the amount of Cd ion measured can match with the measuring range of the spectrophotometer used. At stable temperatures, the pH was kept between 6 and 8. The measurements were conducted periodically: every six hours for four days. As a result, the highest biosorption was in inactive biomass, which is followed by dead biomass and living organisms. It was also found out that this species is very effective in the removal of heavy metal. Moreover, using the same system, *Oocystis solitaria* and *Scenedesmus quadricauda* were compared in terms of their capacities for heavy metal adsorption.

Keywords: Cadmium (II) removal; Biosorption; Bioremediation; Heavy metals

Vol. 2 (3): 191-194 (2012)

THE EXTRACTION OF BIOPOLYMERS FROM THE ENDOSPERMS OF SOME *LEGUMINOSAE* PLANTS, IN ORDER TO BE USED AS CORROSION INHIBITORS.

Efrosini (Teli) Kokalari*, Alketa Lame, Adelaida Andoni, Albana Jano

*Department of Chemistry, Faculty of Natural Sciences Tirana, Albania*Email: efrosiniteli@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT:

The loss from corrosion in the world economy is always a serious issue. Some organic compounds have shown inhibitor properties to protect the metals against the corrosion. It is important to find compound that are not expensive and have no hazardous properties to living creatures and environments. The recent research tried to find naturally organic substances or biodegradable organic materials to be used as inhibitors, which are friendly with the environment. Such compounds are some biopolymers, extracted from *leguminosae* plants, called galactomannans. Galactomannans are polysaccharides with high molecular weight, that make up near 50% of weight of extracted polysaccharides. Galactomannans from the endosperms of *leguminosae* plants were obtained by aqueous extraction in temperature 25°C followed by a precipitation with ethanol (C₂H₅OH), in ratio extract: ethanol 1:2 (v/v). In order to profit pure galactomannan, without lipids and proteins the endosperms of these plants were treated first, with toluene: ethanol (C₆H₅CH₃:C₂H₅OH) in ratio 2:1(v/v). The product of extraction was analyzed with infrared (IR) and nuclear magnetic resonance (NMR) spectroscopy, in order to define its chemical structure. Also we defined the density, pH and molecular weight of the product. The product of extraction was galactomannan and we propose to use it as corrosion inhibitor.

Keywords: extraction, leguminosae plants, galactomannan, corrosion inhibitor.

Vol. 2 (3): 195-200 (2012)

COMPARISON OF CORROSION PROTECTION EFFICIENCY OF TWO KIND OF POLYSACCHARIDES EXTRACTED BY DIFFRENT LEGUMINOSAE PLANT

Alketa Lame^{1*}, Efrosini Teli¹, Albana Jano¹

¹ Department of Chemistry, Natural Science Faculty, Tirana University.

*Email: alketalame@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

The green inhibitors are friendly with the environment. For this reason they are a good choice for corrosion protection. As green inhibitors, were used some kind of polysaccharides (galactomannan), extracted by *leguminosae* plant as green coffee beans, chickpeas and endosperms of carob tree (*Ceratonia siliqua*). Galactomannans are polysaccharides consisting of a mannose backbone with galactose side groups (more specifically, a (1-4)-linked beta-D-mannopyranose backbone with branchpoints from their 6-positions linked to alpha-D-galactose, i.e. 1-6-linked alpha-D-galactopyranose.). They have shown good inhibitor properties in protection of low alloy carbon steel against the corrosion in acidic media (especially H₂SO₄)^(1, 2). The aim of this study is to compare corrosion protection efficiency of these extracts, based on their solubility that depends by their mannose/galactose ratio. Material under investigation is low alloy carbon steel marked as: Steel 39, Steel 44, and iron B-500 (usually applied to concrete as reinforcing bars). The corrosion media is: 1M H₂SO₄ + 10⁻³ mol/L Cl⁻ (in form of NaCl). A Tafel polarization technique was used for investigation of corrosion inhibitor efficiency, accompanying with microscopic surface investigation of working electrode. Extract taken by green coffee beans is more soluble than that, taken by endosperms of carob tree. Use of them in the same concentration 0.5 g/L (better solubility for extract taken by endosperms of carob tree), referring the corrosion protection of steel 39 (the best case in the respect of corrosion sustainability), presents protection efficiency respectively 83.41% and 80.89%.

Key words: Galactomannan, protection efficiency, carbon steel, Tafel polarization.

Vol. 2 (3): 201-206 (2012)

ACCUMULATION OF CHROMIUM IN HYBRO CHICKENS LIVER TREATED WITH Cr(VI) AND VITAMIN C

Kemajl Bislimi, Avni Behluli, Hazbije Bojniku, Jeton Halili, Ilir Mazreku, Fetah Halili

University of Prishtina, Faculty of Mathematical and Natural Sciences, Department of Biology, Prishtina – Kosovo

E-mail: kemajlbsilimi@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

In this study the role of vitamin C in the accumulation of chromium in the liver and liver lesions of *Hybro* chicken treated with Cr(VI) were investigated. The chickens were divided into 5 groups (I-V), with 10 individuals which and were treated orally with different concentrations of chromium (Gr. I - 0 $\mu\text{g CrO}_3/\text{kg b.w}$; Gr. II - 25 $\mu\text{g CrO}_3/\text{kg b.w}$; Gr. III - 50 $\mu\text{g CrO}_3/\text{kg b.w}$; Gr. IV - 25 $\mu\text{g CrO}_3 + 10 \text{ mg vit. C/kg b.w}$; Gr. V - 50 $\mu\text{g CrO}_3 + 10 \text{ mg vit. C/kg b.w}$). The Cr concentration in the liver was determined by atomic absorption spectroscopy (AAS) via *Perkin Elmer 600AA* type spectrometer. Vitamin C combined with Cr(VI) doses amplifies the bioaccumulation of Cr in the liver to a considerable degree, compared not only with control group of chickens but as well as with the chickens treated only with Cr(VI). The results of this investigation show that the bioaccumulation of chromium in the liver depend on the dose, time of action and the combination of Cr with Vitamin C.

Key words: chickens, bioaccumulation, chromium, liver, heavy metals

Vol. 2 (3): 207-210 (2012)

EFFICACY EVALUATION OF SOME INSECTICIDES AGAINST APHIDS IN PEPPER CROP CULTIVATED IN GREENHOUSE

Gyrner Murati¹, Natasha Duraj¹, Skender Ramadani¹, Fadil Musa²¹ Agriculture University of Tirana² Faculty of Agriculture and Veterinary, University of PrishtinaEmail: gmurati@hotmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Several aphid species attack the pepper crop cultivated both in open fields and in greenhouses as well. The aphids damage the plants directly by sucking plant sap from the plants and indirectly as a vector of different plant viruses. The aim of this paper was to identify the most abundant aphid species causing damages to pepper cultivated in greenhouse and the evaluation of the efficacy of different insecticides to control these aphids. The experiment was set up in greenhouse located in village Godanci, municipality of Shtimje, while the experiment design was according to randomized Fisher blocks in three replications. Insecticides were from three groups of chemicals: Actara 25 WG (*Thiametoksan*), Dimetogal (*Dimetoat*) and Deltarin 2,5 (*Deltametrin*) and control as well. The insecticides were used in minimal and maximal doses recommended by the producer, shown in the chemical labels. From the total number of aphids recorded the following percentage belongs to the different aphids: *Aphis nasturtii* (71%), *Myzus persicae* (14%), *Macrosiphum euphorbiae* (4%), *Aphis gossypii* (3%) and other non identified aphids (8%). As for the insecticide efficacy the highest value was recorded with Deltarin used in maximal doses (92.88%), while the lowest one with insecticide Dimetogal used in maximal doses (11.48%). According to the ANOVA there were shown to exist statistical significant differences with regard to the number of aphids species compared to control and different insecticide efficacy to control aphids in pepper crop cultivated in greenhouse.

Keywords: pepper, greenhouse, aphid species, insecticide efficacy, chemical doses

Vol. 2 (3): 211-216 (2012)

DATA ON THE AREAL OF POMEGRANATE (*PUNICA GRANATUM L.*) IN ALBANIA

Arselida Koçi, Mersin Mersinllari

Department of Biology, Faculty of Natural Sciences, University of Tirana, Albania

Email: arselidam@yahoo.com; mmersinllari@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Punica granatum L. is a fruit-bearing delicious shrub or small tree, which grows from 0-700 meters height in Mediterranean climate. It is associated often with other shrubs, spreading in wide areas. This study consists in locating the areas where *Punica granatum* is spread in the territory of Albania. For this purpose GPS coordinates are used to show the exact areas we observed during the expeditions. In Albania, *Punica granatum* is spread from Hani i Hotit, in the north, to Milot in the center of the state. Pomegranate is easily found in all over the county, but not naturally, in the wild form. During the expeditions several damaged areas of *Punica granatum* are observed, mainly near the villages. The implementation of traditional and new management practices will be suitable for decreasing the damaged areas.

Key words: *Punica granatum*, areal, Mediterranean shrub

Vol. 2 (3): 217-222 (2012)

**ENVIRONMENTAL IMPACT OF SHARRA LANDFILL IN TIRANA,
ALBANIA, REGARDING WATER SYSTEM****Ogerta Manastirliu, Pranvera Lazo***University of Tirana, Faculty of Natural Sciences, Dept. of Chemistry, Tirana, Albania*Email: omanastirliu@gmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Sharra landfill is designed and constructed in accordance with a quality system acceptable to Albanian legislation and operate on the basis of environment protection regulation which function in two stages - planning and operation. Some specific standards regarding landfill's operation are applied regarding some important chemical-physical parameters in ground water and surface water control. Some periodical controls are applied from the beginning of the landfill (before the year 2008) till now. It is clearly demonstrated the parameters under investigation are decreased several times and actually fulfills the approved standards. Most important parameters under investigation are: pH, NH_4^+ , NO_3^- , NO_2^- , conductivity and water hardness. Very high levels of nutrients like NH_4^+ , NO_3^- and NO_2^- are found on the beginning of the operation of the landfill. After intervention the improvements on the leaching parameters are evident followed by the drastically decreasing of the nutrients content in ground water and surface water systems. Ammonium content (NH_4^+) was the most critical parameter. It was found to be in very high level (fluctuated on the range between 0.15 to 100.0) before the intervention and decreased highly reaching the normal level of 0.02 .

Keywords: water quality, Sharra landfill, leachate, nutrients and conductivity

Vol. 2 (3): 222-226 (2012)

DETERMINATION OF PHYSICOCHEMICAL PARAMETERS IN WELL WATER USED AS DRINKING WATER IN MILITARY ZONE

Milidin Bakalli¹, Margarita Hysko²

¹ *Laboratory of Microbiology Analysis, Tirana-Albania*

² *Department of Biology, Faculty of Natural Sciences, University of Tirana-Albania*

E-mail: bakallim@gmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

The objective of this study is to determine the physicochemical quality of well water in the region of south-west of Tirana that is used as drinking water by effective. In this region it hasn't a public supply for drinking water. Water samples are taken monthly from May to December 2011 under the aseptic rules. We have analyzed the physicochemical characteristics of the well water samples by various parameters like temperature, pH, total dissolved solids, electrical conductivity, nitrate, ammonium, calcium, magnesium, total hardness and chloride. By observing the results it concludes that the level of some parameters like nitrates, ammonium, calcium, magnesium and total hardness are near the maximum of allowable limit of Albanian standards of drinking water.

Key words: wells water, physicochemical quality, effective, chemical parameters

Vol. 2 (3): 227-230 (2012)

ORGANOLEPTIC EVALUATION TO OLIVE OIL, TO “FRANTOIO” CULTIVATOR IN ECOLOGICAL CONDITIONS OF THE AREA ELBASAN

Alda Biçoku*Universiteti “Aleksander Xhuvani” Elbasan*E-mail: alda_bicoku@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

The area of Elbasan is placed in the central part of Albania in the valley high of the river Shkumbin. There are fertile areas cultured around the city especially with vegetables, there are also hills cultivated with trees and olives. The valley of the river Shkumbin makes possible that the olive cultivation to reach even this far away the seacost as its position is protective from the cold winds of west. The ground in which olive is planted is a hilly steep land, dry and relatively poor in nutrient elements, where the other cultures do not provide production at all. Mainly the land in which the “Frantoio” variety is cultivated in Elbasan are the hills of the area of Shirgjani hills, Dumrea’s and Sulova’s. The study of this is done in the year 2009 in order to observe the quality and the organoleptic properties of the olive oil of the ‘Frantoio’ variety as well as the advantages that this variety has in comparison with other varieties. The establishment of physico-chemical parameters is done in the analysis lab near DRBUMK in Elbasan. The ‘Frantoio’ variety is one of the varieties with manufacture and constant production and has a high value of fitness. It provides manufacture every year and it is a cultivator that produces a special oil for the fruit fragrance and stable in time. It is resistant toward: tuberculosis, the olive fly and of cold. It has a powerful vegetative growth especially in its first years of life. It has an oval fruit 2.5-3.2gram. The oil has a golden in light green color, with a kind smell and is nutrient.

Keywords: suitability, quality, ‘Frantoio’ variety, area

Vol. 2 (3): 231-236 (2012)

SOME ENDEMIC SPECIES ON THE FLORA AND VEGETATION OF MİRUSHA REGION AND THEIR CONDITION BY IUCN

Elez Krasniqi, Fadil Millaku, Ferat Rexhepi

University of Pristina, Faculty of Natural Sciences and Mathematics, Department of Biology, Str. Prishtinë, Kosovo

E-mail: elez_krasniqi@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Mirusha region with its rich phytodiversity occupies a prominent place in the context of Kosovo's biodiversity. Within the flora and vegetation of the Mirusha region of significant value reflect endemic species of vascular flora. With few exceptions, most of these species developed in serpentine substrate. During the research of flora and vegetation of the Mirusha region (2000-2011), in particular during 2011 we found the situation according to IUCN for these endemic species: *Aristolochia merxmuelleri*, *Aster albanicus*, *Centaurea albertii*, *C. kosaninii*, *Chamaecytisus purpureus*, *Forsythia europaea*, *Fumana bonapartei*, *Genista hassertiana*, *Halacsya sendtneri*, *Knautia macedonica*, *Paramoltkia doerfleri*, *Polygala doerfleri*, *Potentilla visianii*, *Scabiosa fumaroides*, *Scutellaria orientalis*, *Sedum serpentini*, *Stipa mayer* and *Veronica andrasovszkyi*. The presence of these species in plant communities forming specific habitats provides significant value to flora and vegetation of Kosovo in general. Under field conditions, the species of the above should be protected by Law and listed on the Red List of Kosovo's flora.

Key words: Endemic species, Flora, Vegetation, Kosovo, Mirusha, Red List, IUCN.

Vol. 2 (3): 237-242 (2012)

MOSS BIOMONITORING TECHNIQUE OF AIR IN SOME URBAN AREA OF ALBANIA

L. Bekteshi¹, P. Lazo², M. Vasjari²

¹Ph student University of Tirana, Albania

²University of Tirana, Albania

Email: lirimbekteshi@gmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Atmospheric particulates with trace metals have an important impact on human health. Moss biomonitoring is a technique used in many parts of the world to determine the concentrations of HM in the atmosphere and their potential sources. In the present study we determined the concentrations of HM (Cu, Fe, Mn, Zn, Cr, Co, Cd, Hg) in air using mosses collected in rural sites (23 sampling stations). The terrestrial moss used was *Hypnum cupressiforme*. The locations of the sampling sites were determined by GPS and represented by maps. The target elements like The intensity of metal mean values in moss samples follows the trend: Cu, Pb, Zn, Ni, Co, Cr, Mn, Fe, As and Cd, as most toxic elements, were determined by ICP/AES method. The metal concentrations of were reporter as mg/lg in dry weight material. The results are expressed as pollution gradients. The intensity of metal mean values in moss samples follows the trend: As<Cd<Pb<Cu<Cr<Zn<Ni<Mn<Fe. The analytical results were compared statistically by linear correlation and cluster analysis. The goal of this study was to survey and asses the air pollutin in some part of Albanian. Elbasan area heavy metal in mosses survey.

Key words: mosses, heavy metal pollution, moss biomonitoring technique, ICP/AES,

Vol. 2 (3): 243-246 (2012)

DETERMINE THE QUANTITY OF CO₂ DURING THE PRODUCTION OF BEER, AND POSSIBILITY TO RE-USE IT

Arsim Elshani¹, Kastriot Pehlivani²¹J.S.C. "Birra Peja", Production Engineering Department, Pejë – Kosovë²J.S.C. "Birra Peja", Production & Technical Manager, Pejë – KosovëEmail: earsim@hotmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Carbon dioxide, CO₂, causes the greenhouse effect in the earth's atmosphere, and is a product of combustion of organic compounds, for example the methane gas. Carbon dioxide itself does not support burning, and being denser than air it is widely used in fire extinguishers. CO₂ reacts with water producing a weak acid according to the equation: $\text{CO}_2 + \text{H}_2\text{O} = \text{H}_2\text{CO}_3$. Alcoholic fermentation is the process of sugar converting into alcohol and carbon dioxide. The actual process, as any beer brewers can attest, occurs over time and involves many chemical reactions. However, the ultimate result is the breakdown of sugar (C₂H₁₂O₆), into alcohol (2C₂H₅OH) and carbon dioxide (CO₂). If you know the initial quantity of sugar, you can calculate the volume of carbon dioxide that its complete breakdown will produce. Carbonic gas formed during fermentation of beer. Carbon dioxide can be compressed and as such be used in production again, which at the same time we also protect the environment and cost savings in the process of beer production. Given that carbon dioxide gas is heavier than air, he sits at the bottom of workspaces, Which presents a danger to life.

Keywords: Carbon dioxide, fermentation, beer, recovery.

Vol. 2 (3): 247-252 (2012)

DATA ON MACROZOOBENTHOS OF THE ROCKY COAST OF ORIKUM

Denada Kasemi

Technical Faculty of science, University of Vlora "Ismail Qemali", Albania

Email: kasemid@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Macrozoobenthos of shallow rocky coast of Orikum area (south-eastern part of Vlora Bay) has been studied, focusing on the supralittoral, mediolittoral and upper part of the infralittoral, during 2006 – 2008. This study gives data on species composition of macrozoobenthos and a general assessment of quantitative characteristics, seasonal variations and stability of zoobenthic populations in the studied area. A total of 62 species has been recorded, with a high dominance of mollusks, among other species of crustaceans, annelids, cnidarians and plathelminthes. The crustacean *Maera inaequipes* has been reported for the first time for Vlora Bay. Seasonal variations were high, with a bigger number of species and higher abundance in autumn season. Algal coverage seems to play an important role for the species composition and abundance of zoobenthos in Orikum coast. Stability of zoobenthic community was low and this situation may be related to the high human impact in the recent years, vegetation cover and the substrate typology.

Key words: macrozoobenthos, rocky coast, Orikum, Vlora Bay

Vol. 2 (3): 253-257 (2012)

BIOECOLOGICAL AND TAXONOMIC DATA ON MILIPEDA GROUP IN SOUTH REGION OF ALBANIA

Hajdar Kïçaj

Faculty of Technical Sciences, Department of Biology, University of Vlora "Ismail Qemali"

E-mail: hajdarkicaj@yahoo.it

Received April, 2012; Accepted August, 2012

ABSTRACT

This article presents some bioecological and taxonomic data about the Class of *Diplopoda (Myriapoda)*, on the South Region of Albania. This article reports species of three orders found in South Region of Albania. The sample sites represent different habitats of the region. According to the published literature for the Albanian Diplopoda, a comparable research is made for their distribution within the country and Balkan region. This study gives an assessment of the biodiversity of the area for this group. The study consists of collecting the samples and in taxonomic determination of the species. This article describes biotic and abiotic factors, which are related to the distribution of this group in the study area. This is the first study conducted on the Southern Region of Albania. It is of high importance, because it gives a full picture of the Diplopoda group in our country. The research focused in this field gives an important contribution in further recognition of this group.

Key words: Biodiversity, diplopoda, julida, species, geographical distribution, collecting sites.

Vol. 2 (3): 257-266 (2012)

ASSESSMENT OF ATMOSPHERIC DEPOSITION OF HEAVY METAL IN THE SOUTH OF ALBANIA BY USING MOSS MONITORING

F. Qarri¹, P. Lazo², M. Vasjari², M. Terpo³, I. Gjika⁴

¹ University "I. Qemali", Vlora, ² University of Tirana, ³ University "E. Cabelj", Gjirokastra, ⁴ Polytechnic University, Tirana

Email: flora.qarri@gmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

The aim of this survey is the comparison of air pollution in the different sites of Southern area of Albania. The use of mosses as biomonitors of heavy metal deposition has been extensively applied in numerous studies in the last years. This work presents the results obtained for the South region of Albania. Samples of *Hypnum cupressiforme* and/or *Scleropodium purum* (whenever the first one was unavailable) were collected in 26 sites in this area, and the concentration of Cd, Cr, Cu, Fe, Mn, Ni, Pb, Hg, K, Na and Zn was determined for each sample. Heavy metals (Cu, Pb, Zn, Mn, Fe and Cd) were determined by atomic absorption spectrometry by using flame/and or electrothermal system. CVAAS was used for mercury determination and atomic emission spectrometry for K and Na determination. The map for deposition was drawn after estimation of the metal concentration in the mosses. The spatial variations in the distribution of metal concentration are discussed. We have been tried to categorize different places in the South of Albania on the basis of metal concentrations in the mosses and data statistical treatment.

Key words: biomonitoring, heavy metals, air pollution, moss survey, AAS method, statistical analysis

Vol. 2 (3): 267-272 (2012)

**THE INCIDENCE OF SHIGELOSIS AND SALMONELLOSIS IN SHKODRA
REGIONAL HOSPITAL DURING THE PERIOD 2008 –2010****Zamira Shabani¹, Aurora Dibra², Nevila Bushati³, Gentiana Qirjako⁴**¹ *University of Shkodra, Department of Nursing, Shkoder - Albania*^{2,3} *University of Shkodra, Department of Biochemistry, Shkoder - Albania*⁴ *University of Tirana, Department of Public Health, Tirana - Albania*¹E-mail: shabanizamira@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Infections of the gastrointestinal tract are caused by a wide variety of enteropathogens, including bacteria, viruses, and parasites. Clinical manifestations depend on the organism and host response to infection and include asymptomatic infection, watery diarrhea, bloody diarrhea, chronic diarrhea, and extra intestinal manifestations of infection. Generally, inflammatory diarrhea is associated with *Aeromonas*, *Campylobacter jejune*, *Clostridium difficile*, enteroinvasive *E. coli*, Shiga toxin-producing *E. coli*, *Plesiomonas Shigelloides*, *Salmonella*, *Shigella*, *Vibrio parahaemolyticus*, and *Yersinia enterocolitica*. Shigellosis and salmonellosis are increased in most developing regions and this fact is related to rapid population growth, increased urbanization, inadequate human waste treatment, limited water supply, and overburdened health care systems. In this article we have considered all hospitalized cases in Regional Hospital of Shkodra, with acute diarrhea. All cases diagnosed as shigellosis, salmonellosis typhoid's and portables are diagnosed with culture proven because we don't effort the serology method cause of expensive kits and provisions) in our hospitals. It is impossible to have this information because the hospital has not the high technology laboratory. It has very old equipments in the current laboratories and we use only the culture proven instead. The elaboration of datas is made by a simple method, descriptive and cumulative. Some dates analyzed with Microsoft Office Excel method are presented through graphics. In this article we consider the cases of salmonellosis and shigellosis infection diseases in District of Shkoder, during 2008-2010. The morbidity of these diseases is studied according selected age - groups, gender and socio - demographic characteristics (place of residence: rural vs. urban areas). The data are taken from the Statistic Office of Hospital and Statistic Office of Public Health.

Keywords: diarrhea, infection, morbidity, mortality, salmonella, sewage, water.

Vol. 2 (3): 273-278 (2012)

DATA ON BIOLOGICAL ASSESSMENT OF WATER QUALITY IN ERZENI RIVER USING AS BIO – INDICATORS DEFFERENT GROUPS OF BENTHIC INVERTEBRATES

Erjola Keçi, Anila Paparisto, Bledar Pepa

Tirana University, Faculty of Natural Sciences, Tirana, Albania

Email: erjolakeci@yahoo.it

Received April, 2012; Accepted August, 2012

ABSTRACT

Ecological water quality is closely related to the biological communities' conditions. Benthic macroinvertebrates are determinate as crucial elements and have a great importance in biological assessment of water quality (Water Framework Directive - WFD). . Ecosystem biological elements often are influenced by human activity, which acts by modifying or adapting their composition and structure (Simboura, 2008). Erzeni River flows in central Albania in an area with sandy – clay deposits (Saraçi R., 1996). So the geographical position and geologic composition of river basin have a specific study importance. Our study aims to give data on biological assessment of Erzeni River water quality based on insect and invertebrate fauna. From the data analyses is important to mention the presence of benthic sensitive organisms (Environmental Protection Agency- USA) in two stations. Also were present two other groups, benthic invertebrates with a medium tolerance toward pollution and tolerant taxons. The values of EPT (*Ephemeroptera*, *Plecoptera* and *Trichoptera*) and Biotic Index have classified Erzeni River water as good - medium quality. Also based on this biological assessment during three successive seasons we can conclude that the water quality of Erzeni River shows differences between the study stations.

Key words: ETP, TV, BI, water quality.

Vol. 2 (3): 279-284 (2012)

ENVIRONMENTAL EDUCATION ON WASTE MANAGEMENT IN LOWER SECONDARY EDUCATION (GRADES VI-IX), IN KOSOVO

Florije Tahiri^{1*}, Ardian Maçi²¹Ministry of Environment and Spatial Planning "Luan Haradinaj" street, Prishtina, Kosovo²Faculty of Agriculture and Environment, Agricultural University of Tirana, AlbaniaEmail: floravk@hotmail.com

Received April, 2012; Accepted August, 2012

ABSTRACT

In our country, environmental education institutions are still under development. The curricula and the number of lessons that are related to environment are unsatisfactory. The protection of environment is not a priority. Due to large quantities of waste scattered all over the place, it's understandable that working towards the improvement of environmental education, is more than necessary. This survey was carried out at school level so as to find out what knowledge do students have about the waste management. The research population consisted of grade VI-IX students of "Bedri Gjina", lower secondary school in Mitrovica and "7 Marsi" lower secondary school in Pristina. The survey covered questions regarding their knowledge about waste management. The results of this survey were processed through descriptive statistical methods with SPSS software. Survey shows that students have very scarce knowledge about waste management, and that it is more than necessary to increase the number of teaching hours, as well as to include a distinct subject about environmental education, particularly regarding the benefits of waste treatment and recycling.

Key words: environmental education, curriculum, research, questionnaire, management.

Vol. 2 (3): 285-290 (2012)

SUSTAINABLE TOURISM DEVELOPMENT AS THE BEST PRACTICE FOR THE ENVIRONMENTAL PROTECTION

Parashqevi Proda (Draci)^{1*}, Edmond Kadiu¹, Henrieta Themelko¹

^{1*}*Faculty of Economics and Agribusiness, Agricultural University of Tirana*

E mail: paro_1961@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Quality of people's lives is reliant upon the health of their natural environment and they have a direct hand in identifying and creating ways to protect and sustainably use their natural resources. The preservation of biological diversity, ecosystems, and natural places is critically important to the survival of us all - people, plants, and animals alike. The people who live near or in a threatened ecosystem are those who are best positioned to repair and protect that system for the long term. Tourist industry has direct impact on nature and the more the growth of global mass coastal tourism and the negative impact of many modern tourist activities on nature and the environment as well the lack of alternatives for sustainable development are a major reason for the degradation of natural resources. For this reason, ecologic acts strategically, building on common interests and goals, to create alliances that will lead to cumulative, positive impacts ongoing are important more and more. Today there is wide acceptance that sustainability is one of the most important issues faced by the tourism industry and researchers are seeking to reorientate tourism along more sustainable lines. In this line, policies for sustainable tourism development tends to achieve environmental objectives by niche tourism marketing and the attempted 'greening' of many aspects of the tourism industry.

Key words: Natural resources protection , sustainable tourism, threatened ecosystem.

Vol. 2 (3): 291-296 (2012)

NEW BIOPESTICIDES FOR *Bactrocera oleae* Gmelin MANAGEMENT IN ORGANIC PRODUCTION TO OPTIMIZING THE EFFICIENCY IN OLIVE OIL PRODUCTION AND ITS QUALITY

Fatmira Allmuca¹, Stefan Dano², Dhimiter Panajoti³¹Ministry of Agriculture, Food and Consumer Protection²Institute of Quality for Integration³Agricultural Center for Technology Transfer in VloraEmail: miraallmuca@yahoo.com

Received April, 2012; Accepted August, 2012

ABSTRACT

Olive fly (*Bactrocera oleae* Gmelin) is a key pest for olive in Mediterranean basin, where Albania locates. In particular areas, years and for susceptible late cultivars, damage can be calculated up to 99%. Furthermore, in organic agriculture, while allowed inputs are limited, such damage is more difficult to be managed. In this content, a study of using biopesticides and traps for olive fly management was undertaken by Crop Production Department in the Ministry of Agriculture, Food and Consumer Protection in collaboration with the Institute of Quality for Integration. Field tests were conducted in 2010 – 2011 in the experimental olive groves of the Agricultural Center for Technology Transfer of Vlora. These tests showed a satisfactory efficacy of OLIVE traps used and biopreparates on the olive fly control. The most effective traps were those with juniper extract attractive and ammonium bicarbonate, which are recommended for broad application. However, in years where the population of pests is expected to be high or in susceptible cultivars, in irrigated conditions and for those producers of extra-virgin oil quality, the application of both methods (biopreparates + traps) would be the best strategy that will ensure maximum results. The BIO treatment unaffected the nutritional and sensory quality parameters of the corresponding virgin olive oils, obtained by a laboratory scale olive mill, thus satisfying the present quality requirements.

Keywords: *Bactrocera oleae*, OLIVE traps, biopesticides, olive oil quality, Albania.

Vol. 2 (3): 297-302 (2012)

PERELIMINARY DATA ON ABUNDANCE OF OITHONA NANA (CRUSTACEA, COPEPODA) IN BUTRINTI LAGOON, ALBANIAN COAST

Fundime Miri (Osmani)¹, Nikolla Peja²¹ Research Centre of Flora and Fauna, Faculty of Natural sciences, University of Tirana² Department of Biology, Faculty of Natural sciences, University of Tirana*Email: fundime_osmani@yahoo.it

Received April, 2012; Accepted August, 2012

ABSTRACT

Abundance of the *Oithona nana*, the prominent copepod in the zooplankton of Butrinti lagoon is presented here. The study was carried on between February and June, 2010, arranged in two temporal samplings: spring (monthly from February to April, 2010) and summer (June, 2010). *O. nana* was dominant during all the investigated period; other copepods were really scarce, occurred only accidentally. Development stages of *O. nana* were divided in three groups, the nauplii, the copepodid and adult stages. Variations on the abundance were noted, higher abundance recorded in June. Results of the development stages were discussed in relation with some physico-chemical parameters (temperature, salinity and dissolved oxygen). The quantity increased with increasing of the temperature. The food availability is an important factor controlling the abundance of zooplankton; generally, maximum copepod population density is coupled to the maximum biomass of phytoplankton. Our study continues following a PhD program, aiming a more complete study on species composition, abundance and seasonal variations of zooplankton community in Butrinti. It is also an additional and complementary approach of the long-term monitoring carried on by the Institute of Food Veterinary Security, Tirana, aimed in the assessment of phytoplankton and toxic algae.

Keywords: *Oithona nana*, copepoda, Butrinti lagoon, development stages, abiotic factors