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EFFECT OF DIFFERENT LEAD (PB (NO₃)₂) DOSE APPLIED ON *ATRIPLEX NITENS* SCHKUHR. SEEDLING GROWTH

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ABSTRACT

Lead phytotoxicity investigation was carried out at Selcuk University, Environmental Engineering laboratory in during 2012 education period. *Atriplex nitens* Schkuhr. plant seeds were used in this study that obtained in the same year from around Konya city. In this study, different doses applications (0.016 g, 0.16 g, 1.6 g, 3.2 g and 6.4 g) of lead (Pb (NO₃)₂) were used and the effect on seedling germination and growth of *Atriplex nitens* were investigated. For this purpose, number of leaves, stem and root length, stem, leaves, plant fresh and dry weight were investigated. Lowest handle length was 6.91 cm (0.16 g), and Root length 3.44 cm (6.4 g) and Total number of leaves/plant 5.60 (6.4 g) were identified.

Keywords: *Atriplex nitens*, Lead (Pb), Plant seedling, growth, toxicity

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PUBLIC AWARENES AND HAUSHOLD SEPARATE WASTE COLLECTION: A CASE STUDY IN MACEDONIA

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ABSTRACT

Separate waste collection is an important element of sustainable waste management. Separate waste collection provides the preconditions for environmentally friendly performing of waste operations. This collection can significantly contribute to increase recycling and other types of waste recovery. It could enhance faster meeting of the national targets for recycling and handling with the problems caused by waste generation in Macedonia. Besides the numerous of attempts and pilot projects still there is not placed a developed system of household separate collection of different categories of waste. At the first place this involves the collection of plastics, glass, metal, wood, paper, cardboard, biodegradable waste and other waste categories. This situation contributes to the low level of waste recycling. There are many factors which could improve the household separate waste collection. One of the most important factors is strengthening of the public awareness and personal responsibility of the citizens. Increasing of public awareness will produce a base for the improvement of household separate waste collection. The measures and activities for establishing separate waste collection from the households should be more effective. The main goal of this paper is to research the relations between public awareness and household separate waste collection. Also papers aims to find the most effective communication channels for increasing awareness about the need of separate collection. Within the activities of the preparation of this paper a research was conducted with appropriate survey among 600 respondents. The paper also makes efforts to initiate further researching and to give some recommendations.

Key words: Separate collection, waste, public awareness, households, citizens.

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USING DIATOMITE AS PADDING MATERIAL IN WATER PROOFING MEMBRANES

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ABSTRACT

Water entering into insulating membranes causes a threat to their structure in terms of their strength. Water entering the building structure disturbs the system. Corrosion of the carrier portion is considered as important and it causes a decrease of the load carrying capacity. Water in the structure of building integrity of concrete, freezes in winter, and it evaporates in summer and leads to formation of cracks in the concrete. Water enters the concrete skeleton leads to the formation of some organic materials, mold and fungi which are dangerous for the human health. In this research, two types of water resistance membranes were compared according to their performance. The membranes can be produced with diatomite and calcite. Diatomite is a building material which has a higher chemical stability and is lighter than calcite. It will be more advantages over conventional calcite because it has a high strength and melting temperature as 1430 °C. Artificial aging and waterproofing resistance against chemicals were tried in the experimental tests. Diatomite provided a lighter weight to the membrane module. The 3 mm thickness of the membrane has lower mass (35 kg) compared to calcite membrane (40 kg). After the chemical resistance against water resistance test, the diatomite-filled prototype sample yielded a higher water resistance to the pressure of 60 kPa. However, the calcite-filled prototype yielded until 20 kPa water resistance and lost its waterproofing properties in low pressures values. This is because the calcite can expose to hydrochloric acid, sulfuric acid, acetic acid, and nitric acids which used in the production of membrane and they enter the micro pores of calcite and changes its properties. This is why membrane made by diatomite instead of calcite. The pressure-strength has increased by adding diatomite to the structure. Water resistance test after artificial extensibility resulted in significant differences in two prototype membrane modules.

Key words: Diatomite, filler material, waterproofing membrane

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AN EVALUATION OF THE WIND ENERGY POTENTIAL IN AREAS OF INTEREST IN ALBANIA USING WIND-ATLAS-BALKAN DATA

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ABSTRACT

Wind energy technology implementation has reached new levels of a remarkable growth. There is also an increased interest for wind energy even in countries that lack long term wind speed measurement data. Such, it becomes a necessity to assess the wind energy potential in areas where is no measured wind speed data. In this study wind energy potential for 7 sites in Albania preliminary proposed and licensed for developing wind farms, but lacking measured wind speed data, was assessed based on Balkan Wind Atlas data. Site power prediction was developed with WAsP program. The reliability of the Wind Atlas data was evaluated by comparing with the on-site data measurements for the area of Mamaj, Tepelenë. All the sites were characterized as class 2,3 and 4 wind category, with power density up to 464W/m².

Keywords: Wind energy, Wind Atlas Balkan, Albania, Wind power class, Capacity factor.

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AN OUTBREAK BY *SHIGELLA SONNEI* IN VLORA REGION, SEPTEMBER 2014, ALBANIA

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ABSTRACT

In the last days of September 2014 in three villages on the outskirts of the city of Vlora, Albania, was observed an increase in the number of cases of acute gastroenteritis seeking medical care. The epidemiological investigation confirmed a waterborne outbreak caused by *Shigella sonnei*. A longitudinal prospective study was conducted to identify the source and routes of transmission to implement the measures of control and prevention. Epidemiological data were collected through a standardized individual questionnaire. A case definition was created and stool samples were collected for laboratory examination from patients and their relatives and also tap-water. 127 cases were interviewed. 89% (113/127) were less than 18 years. 64.6% (82/127) belonged to groups 5-14 years. The outbreak occurred as a result of contamination of drinking tap-water due to works for repairing of the defects in the drinking water network that supplies these areas.

Key words: *Shigella sonnei*, outbreaks, epidemiologic investigation

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HYDROLOGY AND WATER CHEMISTRY OF LAKE BURDUR, SOUTH-WEST ANATOLIA, TURKEY

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ABSTRACT

Lake Burdur is a closed-basin, alkaline, saline lake, at 847 m above sea level in south-west Anatolia, Turkey, divided between the provinces of Burdur to the south and Isparta to the north. Lake Burdur lies in an isolated closed basin entirely surrounded by the Burdur Lake basin, which exerts a very strong influence on the hydrology and sedimentology of the lake. The 1671.025 km² surface-water drainage basin containing Lake Burdur, as defined by topographic maps, is long and narrow. The lake is situated along the west-central boundary of the basin, and is about 30 km long by 7 km wide. When the lake surface is at an elevation of 843.40 m above sea level, it covers an area of nearly 155.666 km², with an average depth of 53.83 m and a maximum depth of 60.92 m. The main resources that feed the lake are rainfalls, rivers and underground water resources. Among the important water resources that feed the lake are Bozçay, Suludere, Keçiborlu River and Asar River. The main reason for the decrease in the water level of Burdur Lake is the dams and ponds constructed on the rivers that feed the lake since 1970. The pH values for Lake Burdur ranged from a minimum of 9.1 to a maximum of 9.13 with the mean of 9.116 respectively. The electrical conductivity (EC) values in Lake Burdur ranged from 32160 to 33770 µS/cm, with an average 32863.3 µS/cm, in the groundwater ranged from 607 to 6200 µS/cm, with an average of 2786.3 µS/cm. The values of Ca²⁺ and Mg²⁺ varied from 10.7 to 62 mg/l and 646 to 5880 mg/l with an average value of 32.53 and 2737.67 mg/l in lake water samples collected from various sites. The values of Na⁺ and K⁺ varied from 3630 to 7530 mg/l and 95.3 to 636 mg/l with an average value of 6301.7 and 285.1 mg/l in lake water samples. The values of HCO₃⁻ and Cl⁻ and ranged from 952 to 1330 mg/l and 904 to 6960 mg/l with an average value of 1177.5 and 5647.3 mg/l. The values of SO₄²⁻ reported for lake water samples varied between 1800-14300 mg/l with an average value of 11450 mg/l. Similarly, the value of CO₃⁻ varied from 390 to 636 mg/l with an average value of 561 mg/l.

Key words: Burdur Lake, water chemistry, hydrology, water level

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**THE EFFECT OF THERMAL STRESS EXPOSURE ON THE
HEMOLYMPH GLUCOSE LEVEL IN CRABS (*CARCINUS ESTUARIS*)**Marsilda Qyli¹, Valbona Aliko²¹Department of Biology, Faculty of Natural Sciences, Tirana University, Bld. "Zogu I", Tirana, Albania;E-mail: qylimarsilda@yahoo.com; valbona.aliko@yahoo.com

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ABSTRACT

Organisms in natural habitats must frequently respond to changes in their environments through various physiological mechanisms. One of them is hyperglycemia which is a typical response of many aquatic animals to different aquatic factors. The mechanism of hormone release in crab *Carcinus estuaries* is the central objective of this study. Two groups divided into normal and eyestalk-ablated animals, composed of 6 animals were exposed to different value of temperature for 2 hour and it was observed that the glucose level changes in normal animals according to the temperature. From the experimental results is shown that the normal temperature for animals is near to 22.6°C. That's why exposure of both: intact and eyestalk-ablated animals to this temperature doesn't cause any significant effect. It causes a slightly increase of glucose level into intact crabs ($F=0.375$, $df=1$, 10 , $p=0.573$ so $p>0.05$) while into the eyestalk-ablated animals a slightly decrease, ($F=1.143$, $df=1$, 10 , $p=0.345$ so $p>0.05$). While the exposure of animals to the temperature 32°C, causes a drastically increase of the glucose level in normal animals ($F=52.46$, $df=1$, 10 , $p=0.000$ so $p<0.05$) and a non significant decrease to eyestalk-ablated animals ($F=4.17$, $df=1$, 10 , $p=0.055$ so $p>0.05$). When animals were exposed to the temperature 4°C, the glucose level of intact animals is drastically increased, ($F=18.06$, $df=1$, 10 , $p=0.002$ so $p<0.05$) while into the eyestalk-ablated animals, the glucose level undergoes to a non significant slightly decrease. ($F=3.35$, $df=1$, 10 , $p=0.97$ so $p>0.05$).

Key words: *Carcinus estuaries*, temperature, eyestalk, crustacean hyperglycemic, hormone(CHH), glucose.

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HOSPITAL MEDICAL WASTE MANAGEMENT

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ABSTRACT

Any unwanted residual material which cannot be discharged directly, or after suitable treatment can be discharged in the atmosphere or to a receiving water source, or used for landfill is waste. In recent century, the generation and processing of solid waste material has become an increasing environmental problem in most of the countries. Solid waste treatment prior to landfilling reduces or even avoids environmental damage and recycling prior to waste treatment very important issue. Policy makers have recognized the benefits of recycling and are increasingly willing to foster it through new waste legislation and directives. Some of the waste types must be separated before contaminated with hazardous materials. Medical wastes are also good organised to reduce the amount of contaminated waste and save the recyclable waste. A modern hospitals are complex multidisciplinary system which consumes thousands of items for delivery of medical care and is part of physical environment. All products consumed in hospitals have some unusable left over. This wastes are great threat to ecological balance by polluting environment. Infectious waste are all those substances which cannot be re-sterilized or reused within or brought into patient care The dynamic environment has made solid waste planning more difficult and has highlighted the fact that the state solid waste management plan must also be a dynamic document. It is anticipated that the plan will need to be updated prior to the minimum mandate of every five years. The type and composition of the solid waste generated by individual states can vary greatly. This variation is a function of several factors including climatic conditions, population characteristics, type of industries and businesses located within the state, landownership, culture, and others. This research will describe the types and quantities of solid waste generated within hospital. Reliable estimates of the this waste being generated is a crucial component of any solid waste plan. These projections determine the expected life of facilities, future operation costs and revenues, and ultimately the selection of the integrated solid waste management system to be used.

Keywords: Hospital, Medical Waste, Waste Management, Lanfill, Environment

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**IN-VITRO FERTILIZATION AND MATURATION OF BALKAN WATER
FROG (*Pelophylax kurtmuelleri*, Gayda, 1940) – A CASE STUDY IN
REPRODUCTIVE AMPHIBIAN BIOTECHNOLOGY**

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ABSTRACT

The process of in-vitro fertilization enables the formation of new organisms under laboratory conditions. In this way becomes possible the insurance of livelihood continuity of vulnerable organisms, recently considered as such are also amphibians. Frogs have been the most favorite organisms for the study of reproduction and development biology due to their manipulation in the lab. This study aimed the application for the first time in our country of in-vitro fertilization technique (IVF) in one of the threatened frog species (Balkan water frog, *Pelophylax kurtmuelleri*, Gayda, 1940). The objective of this study is the stabilization of the fertilization technique and in-vitro maturation in ranidian frogs. The average productivity of in-vitro fertilization technique performed in the laboratory was 27%. This performance is higher compared with the performance of similar techniques applied by other labs. The fertilization of eggs through the technique of direct spray with the extract of macerated testicles increases significantly the productivity of the technique. This technique provides the opportunity for in-situ conservation of amphibians.

Keywords: In-vitro fertilization, in-vitro maturation, Balkan water frog, eggs, average yield.

TAXONOMIC STUDY OF THE ORDER ODONATA IN KORÇA REGION**Shkëmbi Enilda^{1*}, Paparisto Anila¹, Mulla Noila¹, Halimi Eltjon¹, Qirinxhi Xhuliana²**¹University of Tirana, Faculty of Natural Science, Department of Biology, Albania;²University Fan S Noli, Faculty of Natural and Human Sciences, Department of Nursing, Albania;*Email: enilda07@gmail.com

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ABSTRACT

The purpose of this paper is to provide a contribution to the recognition and identification of the biodiversity of the order Odonata, the class Insecta, in Korça region. This is done in order to complement the data on entomofauna in Albania. This study was conducted in 2013. The collection of the material was performed within 22 days of expeditions in 11 stations. Each station has been visited 2 times. Expeditions were conducted near areas with rivers, reservoirs, lakes, during 9⁰⁰-13⁰⁰. According to the analysis of the collected data, 16 species, 11 genera and 7 families of the order Odonata are determined. The most represented is suborder Zygoptera with 9 species, and suborder Anisoptera represented by 7 species. Family Coenagrionidae and Libellulidae are represented, both with 3 genera and five species. Of the 11 stations in the study, Boboshtica is the station with the largest number of species, that is 9. In this paper were reported 8 new species of Odonata order for the region of Korça. New species are: *Lestes barbarus* Fabricius, 1798; *Enallagma cyathigerum* Charpentier, 1840; *Ischnura pumilio* Charpentier, 1825; *Orthetrum albistylum* Selys, 1848; *Orthetrum brunneum* Fonscolombe, 1837; *Crocothemis erythroea* Brulle, 1832; *Sympetrum depressiusculum* Selys, 1841 and *Anax imperator* Leach, 1815. This number is added to the 17 species referred to in the literature, bringing the number of known species of the order Odonata in Korça to 25.

Key words: Odonata, Korça, variety, new records

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BAD DEBTS OF THE BANKING SYSTEM IN ALBANIA

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ABSTRACT

The aim of the article is to give an overview of the bad loans situation in recent years in Albania. This is a systematic review of reports and articles published in literature and web regarding the trend of the bad loans in Albania and interaction with economic situation. Referring to the official data of the last 14 years in Albanian economy, we could demonstrate that there is a negative correlation between the real economy and the nonperforming loans rate in the banking sector. Until the end of 2007, before the crisis, Albania was a model in terms of loan payments. According to official source, the level was only 3.3%. At the beginning of 2008 until January 2009 this level increased up to 6.8%. On May 2010 the level increased up to 12% of bad loans related to total loan portfolio and on 2011 reached the level of 18.8% and on December 2012 was 22.76% or converted in 1 milliard and 260 million of USD of all portfolio referred always to official sources. On 2013 the level reached 24.4% and in the recent data published for 2014 is supposed that this level is nearly 23%. Continuous monitoring of the evolution of the economy is important for the periodic assessment of overall asset quality and credit risk avoidance. A reform in the banking system is needed to manage the structures responsible for the permission of loans.

Keywords: no-performing loans, banking system, economy

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RHINITIS IN ASTHMATIC SUBJECTS

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ABSTRACT

Allergic rhinitis (AR) is an allergen-induced, upper-airway inflammatory disease, highly coexistent in allergic asthma patients, characterized by hyperactive airway mucosa and episodes of chronic symptoms with periods of acute exacerbation, during exposure to highly allergen-concentrated environments. In our prospective study, we report results on allergic rhinitis in 116 asthmatic patients sensitized by house dust mites. Multidisciplinary Tirana polyclinics 1 and 3 have provided the study data on patients with asthma history of 2 years up to 20 years, all sensitized by house dust mites. We found persistent symptoms of allergic rhinitis in 67 patients; intermittent symptoms in 31, and 18 did not manifest any symptoms at all. Within the subgroup of patients with persistent rhinitis symptoms, almost 40% of the patients referred to have a minimal persistent nasal obstruction only when asked by the specialist. Within the group of 98 patients with persistent and intermittent rhinitis symptoms, we found that 73 patients or 74% reported rhinitis, cough and dyspnea symptoms when exposed to highly concentrated environments with house dust mites such as closed living and working places or air conditioned and not properly ventilated closed spaces. The purpose of this study is to show the high incidence of allergic intermittent or persistent rhinitis, in asthmatic subjects sensitized by house dust mites, and the importance of the environmental factors contributing to the severity and frequency of symptoms onset.

Keywords: allergic rhinitis, asthma, house dust mites

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VASCULAR FLORA OF BADOVC WITH THE SURROUNDINGS- REPUBLIC OF KOSOVO

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ABSTRACT

Hilly to mountainous area of the Republic of Kosovo represents the area of interest for the flora and vegetation research. Within this area found that as the Badovci locality once was inhabited, while is located in the southeastern part of Prishtina. Vascular flora of Badovc with the surroundings is researched during 2013, and was supplemented until 2015. The pedology of researched area is made up of: Loamy deluvium, Typical rendzina on serpentine, Typical ranker on sandstone, Reddish-brown leached soil on reddish sediments and Shallow brown soil on flysch. Researched area is located in the hilly-mountain area with pronounced inclination and extends at an altitude of 610 m to about 900 m. The climate is continental, the annual average of air temperature is about 10 °C, while the annual average of rainfall is more than 600 mm. Researched space as a whole, in phytocenological terms is represented by forests, shrubs and also dry pastures and rocky places, that belong to classes: *Quercus-Fagetum* and *Festuco-Brometum*. Although we have continuous anthropogenic action (mining operations), we have concluded also a rich diversity of vascular flora dominated by the *Magnoliophyta*, respectively *Hemicriptophyta*. Considerable number of these species are nutritious, medical and aromatic as well as honey plant species. During this research are also found Balkan endemic plant species as natural heritage values of Kosovo as: *Centaurea kosaninii*, *Halacsya sendtneri*, *Potentilla visianii* and *Stachys scardica*.

Key words: Badovc, Vascular flora, Endemic plants, Anthropogenic factor, Kosovo.

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VASCULAR FLORA OF THE CARRALLUKA MEADOWS-REPUBLIC OF KOSOVO

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ABSTRACT

Meadow ecosystems as natural terrestrial ecosystems are important in the context of phytodiversity of the Republic of Kosovo. Vascular flora of the Carralluka meadows is researched during 2013 (supplemented 2014). These meadows in Kosovo have extension mostly along the lowland river valleys and their branches hanging averages about 500-600 m above sea level. Up to date research in these ecosystems have proved the presence of significant numbers of species of the vascular flora. Floristic value of these meadows it raises the presence of forage, medical and aromatic plants and also honey plant species. Researched area-meadows in Carrallukë (515-560 m) is located on the western Kosovo respectively on the Llapusha region, Malisheva Municipality. These meadows are situated along the valley which runs from near the Tërpeza village and continues around the Carralluka village until near the Mirusha village. In the pedological aspect these meadows have extension on the Aluvial-deluvial loamy soil. The climate is continental with average annual temperature of about 10 °C. Researched zone is in the area with average rainfall of 600 to 800 mm. In the phytocenological aspect these meadows belong to order *Trifolio-Hordetalia* respectively to the alliance *Trifolion resupinati* and to order *Brometalia erecti* respectively to the alliance *Bromion erecti*. Although the anthropogenic action is evident in continuity, because this area is preserved as a whole, are identified more than 100 plant species of vascular flora. Results expressed in areal and floristic spectrum present the dominance of species from Eurasian floral element respectively by dominance of Hemicriptophyta.

Key words: Flora, Meadow ecosystems, Anthropogenic factor, Carrallukë, Kosovo.

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GREEN LABORATORIES APPLICATION

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ABSTRACT

Green chemistry is the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. Green chemistry applies across the life cycle of a chemical product, including its design, manufacture, use, and ultimate disposal. Green chemistry is also known as sustainable chemistry. Universities and environmental protection agencies have begun to use the concept of “Green Laboratory” by using the concept of green chemistry in recent years. In this research, green laboratories application in the world will be introduced and an evaluation form will be created to allow laboratories in Turkey to achieve Green Laboratory Certification. The limits will also be determined to enable the relevant laboratories to reach the Green Laboratory Standard. Thus, it was aimed that serious steps would be taken towards protecting the environment through green laboratories application in order to prevent environmental pollutions generated by the laboratories.

Keywords: Green chemistry, Green laboratory certification, Standard, Evaluation form.

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SOME ANATOMICAL CHARACTERS OF STEM IN DIFFERENT POPULATION OF BROMUS INERMIS

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ABSTRACT

Resistance of plants has a great importance in cultivation and more dependent on the anatomic construction stem and leaf. *Bromus inermis*(smooth brome) is a perennial plant. Seeds remain viable for 2-10 years. *B. inermis* can spread by rhizomes and seed dispersed by wind. Seeds can be dispersed by ants and birds. *Bromus inermis* occurs on roadsides, riverbanks, edges of fields, prairies, woods and pastures. It prefers sandy soils to salty ones (Sather, 1987). *B. inermis* needs well aerated soils with a pH from 5.5-8. *B. inermis* is not tolerant of anaerobic, calcareous, or salty conditions, but can tolerate temperatures as low as negative 38 degrees Celsius (ANHP, 2004). It is also very drought tolerant which can be attributed to its deeply penetrating root system (Sather, 1987) *B. inermis* is not shade tolerant, and seed production, number of shoots and rhizomes, and dry weight of plant decreases when *B. inermis* does not receive sufficient sunlight. *B. inermis* is planted to increase forage or to reduce erosion after fire (Grace *et al*, 2002). Smooth brome is used as hay, pasture, or silage for livestock, as it is high in protein. It works well in a cropping system with alfalfa or other legumes. *B. inermis*' massive root system makes it a very effective erosion control. There are investigated some anatomic characters of stem and leaf, those organs are playing very important role on the yield production. On the cross section of stem and leaf 10 individuals to three locations are analyzed : number of stomas, number vascular bundles, number of sclerenchymal cell rows, thickness of mechanic tissue. Achieved results shows that those parameters have varied subject to the populations and internodes position on the stem and leaf.

Key words: stem, leaf, vascular bundles, sclerenchymal cell rows, number of stomas, internodes

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EARLY INTERVENTION PROGRAM FOR CHILDREN WITH AUTISM SPECTRUM DISORDER

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ABSTRACT

Autism Spectrum Disorder (ASD) is a life-long neurodevelopmental disorder characterised by impairments in social interaction, verbal and non-verbal communication, and a restricted repertoire of activities and interests. Participants were parents of 25 children two-to-six years with a DSM-V- diagnosis of Autistic Disorder, made by a psychiatrist, who were attending an Autism Specific Early Learning and Care Centre in Tirana, Albania. Exclusion criteria applied were known neurodevelopmental (e.g., Fragile X Syndrome) or neurological (e.g., epilepsy) disorders, and significant vision, hearing, motor or physical problems. The mean age of children at the time of study commencement was 60.2 months (SD 5.9, range: 24-to-110 months) and 21 (84%) were male. The mean age of the participating children's mothers was 37.4 years (SD 6.3, range: 26-to-53 years). Our data provide evidence that the inclusion of parents in the treatment provision leads to lasting child behavior changes, and the implementation of intensive and continuous parent training and supervision reliably achieves parent treatment fidelity which, in turn, facilitates the children's progress. There was a substantial improvement of DASS IFS and challenging behaviour of parents after ABA treatment. Such results provide important scientific and clinical information on parental and treatment factors likely to affect a child's response to treatment.

Keywords: autism, early intervention, applied behavior analysis

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EPIDEMIOLOGICAL DATA OF PATIENTS WITH HAEMOGLOBINOPATHIES TREATED IN UHC “MOTHER TEREZA” TIRANA DURING 1980 - 2014

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ABSTRACT

Hemoglobinopathy is a kind of genetic defect that results in abnormal structure of one of the globin chains of the hemoglobin molecule. Hemoglobinopathies are inherited single-gene disorders; in most cases, they are inherited as autosomal co-dominant traits. Common hemoglobinopathies include b-thalassemia major, intermediate and sickle cell disease. Hemoglobinopathies are most common in ethnic populations from Mediterranean basin, the Africa and Southeast Asia. The demographic data will provide information on age, sex, location and genetic aspect of haemoglobinopathies in Albania. For the period 1980 to 2014 epidemiological data were collected retrospectively for children with haemoglobinopathies. An estimated 7.1% of the global population in Albania is a carrier of an abnormal, or pathological, haemoglobin gene. The cases of children with haemoglobinopathies included in this study are mainly registered in Southern, South-west and Middle Albania, excluding the Northern area. The most evident pathology is Thalassemia Major (59%), followed by sickle cell disease (25%) and thalassemia sickle cell disease (16%). The highest average age was evidenced in intermediary thalassemia, whereas the male sex was the predominant one in our study. Through the molecular analyses our study gives a full panorama of the distribution of the mutations of the haemoglobinopathies. Hemoglobinopathies and their panorama in Albania are similar to the region. The application of the contemporary treatments, transfusions and iron chelation, have made a revolution in the improvement of the quality and expectancy of life of patients with hemoglobinopathies.

Keywords: haemoglobinopathies, Albania, thalassemia major, thalassemia minor, sickle cell disease, children

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PREDICTION OF PREECLAMPSIA

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ABSTRACT

The aim of the study was to examine whether increased serum sFlt1 levels are related to development of PE. Subjects were recruited from the Obstetrics and Gynecology Department at American Hospital in Tirana, Albania between January 2012 and December 2014. The study subjects included 95 women who subsequently developed preeclampsia and 140 women with normal singleton pregnancies who were matched for maternal age, and gestational age. sFlt-1 levels were significantly higher in the preeclamptic women, median-interquartile range 4011.2 (157.7) than in normal controls 679.2 (140.1) ($p < 0.001$), while the PlGF levels were significantly lower, 402 (14) as compared to controls 1128.6 (62.5) ($p < 0.001$) (fig. 2). In preeclamptic women, sFlt-1 levels were negatively correlated with the PlGF levels ($r = -0.25$, $p = 0.04$). The predictive accuracy of preeclampsia was higher as denoted by greater AUC (0.982). In future these biomarkers will be the first signals for preeclampsia and help prevent its severe forms.

Keywords: preeclampsia, sFlt-1, PlGF, gestational age, hypertension

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ELECTRON MICROSCOPY CHARACTERIZATION OF INDIVIDUAL AEROSOL PARTICLES

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ABSTRACT

The aim of this work is the physico-chemical characterization of particulate matter in urban area in Tirana. 24 hour samples of suspended particulate matter were collected at the top of the Central Polyclinic of Tirana building. Sampling was carried out from 22 February to 4 March and a total of 476 particles from 7 samples were processed for SEM/EDS analysis. Qualitative analysis of particulate matter samples were performed using scanning electron microscope JEOL JSM-563 equipped with an Oxford Link ISIS L300 for EDX analysis. Based on X-ray spectra of individual particles performed by EDS, the most abundant elements detected were C, O, Si, Al, Ca, Mn, Mg, Cd, Pb and Fe present in both coarse and fine fractions. C, Si, Al and Ca were the most abundant element. Major anthropogenic sources of particulate matter in Tirana are traffic generated fugitive dust from unpaved roads, diesel vehicle emissions and construction activities.

Keywords: Particulate matter, atmosphere, SEM, qualitative analyses, elemental composition, characterization.

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DYSFUNCTIONAL UTERINE BLEEDING

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ABSTRACT

Menstrual disorders are common gynecological problem for medical visits among women of reproductive age. This is a prospective cohort study of 347 patients admitted over the period 2012 and May 2014 to the Obstetric Gynecologic University Hospital “Queen Geraldine”, in Tirana, Albania. The study included patients with different gynaecologic complaints. A detailed history regarding the age, menstrual irregularities like frequency of cycle, duration of flow and amount of flow were enquired and were recorded. The data presented in the study are based on clinical examination and on history. The mean age of patients was 34 (± 12.3) years with a range 18-52 years. Out of 347 gynecological patients 67 (19.3%) were found with Abnormal Uterine Bleeding. In the present study it was observed that the prevalence of menorrhagia was high as compared to other Abnormal Uterine Bleeding, followed by oligomenorrhoea, polymenorrhoea, Dysfunctional Uterine Bleeding and hypomenorrhoea. Out of 67 patients of Abnormal Uterine Bleeding, 20 (29.2%) patients had menorrhagia followed by oligomenorrhoea 12 (18.5%), polymenorrhoea 14 (21.3%), dysfunctional uterine bleeding 13 (19.4%) and 8 (11.6%) patients had hypomenorrhoea. Patients presenting with menstrual irregularities must be screened properly as incidence of menorrhagia is high in reproductive age group. Frequency of menstrual disorders and their impact on women's health status, quality of life and social integration suggest that proper evaluation and treatment should be given a higher priority.

Key words: menstrual irregularities, reproductive age, abnormal uterine bleeding,

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THE STUDY OF MEDICINAL PLANTS FOR ELBASAN DISTRICT

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ABSTRACT

The study of plant diversity for Elbasan District, the diversity of plant species (flora) and the diversity of plants has scientific and practical value (Mersinllari M., 2001). Shkumbin River Valley is a fairly populated area, but it also stands for a high diversity of ecosystems and habitats, with a rugged geographical position and changeable climate. It has attracted the attention of many researchers from various fields (Miho A., et al., 2005). Medical Flora is a precious asset of our country. In this context, medical flora of Elbasan is a part of this wealth which must be explored and exploited always better. The object of this paper is the study of the geographical distribution of medicinal plants in the district of Elbasan, their geobotanical, biological and ecological study. In our country we are doing more studies on medicinal plants. For some plants, it is also carried their cultivation. The main objectives of the study are: Identification of medical flora of Elbasan District; Determination of the main associations according to their composition with the physiognomic method; Presentation of the current state of medical plants; Determination of endangered species and their importance.

Keywords: ecosystem, medical flora, endangered species.

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OPTIMAL INTERPOLATION OF IN-SITU AND SATELLITE PASSIVE MICROWAVE DATA FOR GLOBAL SNOW DEPTH ESTIMATION

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ABSTRACT

This paper presents an optimal interpolation approach to global snow depth estimation. The method uses 2-dimensional optimal interpolation to blend in-situ and satellite snow depth data weighted against their errors relative to a first guess and spatial correlations, the latter estimated from autocorrelation functions with respect to horizontal distance and elevation. The method is applied to ground-based and satellite passive microwave snow depth data within a 4-km resolution snow analysis system over the Northern Hemisphere. Assessment of the method is also presented using an extended ground-based snow depth dataset over US. Results show that the method is robust in estimating shallow and deep snow covers with mean bias and precision of 5 and 7 cm, respectively. Accuracy degrades over the mountains do to insufficient density of in-situ snow depth and inaccurate snow depth retrievals from satellite passive microwave data.

Key words: Satellites, passive microwave remote sensing, geospatial analysis, geophysical measurements.

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TYPES OF SULFATE ATTACK AND DETERIORATION MECHANISMS

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ABSTRACT

Degradation of cementitious systems exposed to sulfate salts is the result of sulfate transport through the pore system, chemical reaction with the hydration product phases present, generation of stresses due to the creation of the expansive reaction products, and the mechanical response (typically spalling and cracking) of the bulk material due to these stresses. Each component of this process plays a unique role in the ultimate response of the concrete; change the material properties relevant to any one component and the concrete performance can change dramatically. Therefore, laboratory tests of "sulfate attack" that are based primarily on submerging the specimens in sulfate solution and then measuring some physical property, such as expansion, are effectively lumping all of these mechanisms into a single test. The result is a test that characterizes how a particular concrete performs under specific conditions. If the field conditions are different, the performance of the concrete can also be different. Therefore, to predict the resistance to sulfate attack of a concrete, it is necessary to develop a protocol that takes into account the type of exposure and separates the various mechanisms. The major degradation processes that the concrete is likely to encounter are sulfate attack, corrosion of reinforcing steel, alkali-aggregate reactions, carbonation and leaching by neutral or acidic ground waters. These degradation processes often involve the transport of moisture, ions and dissolved gases into concrete by diffusion, convection and capillary forces. Rates of degradation will be often controlled by the rate of intrusion of moisture and dissolved salts and gases into concrete.

Key words: fly ash, concrete, sulfate attack.

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**THE ASSESSMENT OF FIRST ANTIBODY PRODUCED AGAINST
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ABSTRACT

The clinical significance of high levels of antibody against *Helicobacter pylori* is still unclear. Our aim is to could predict the presence of gastroduodenal disease by serum antibody levels. Methods. Serum IgM antibodies against *Helicobacter pylori* were measured by ELISA. The wavelength of measurement absorbance was 450nm. Antibody index of each sample was calculated by dividing the optical density (OD) value of each sample by cutoff value. For cutoff value, IgG and IgA was: negative result $\leq 0,8$; positive result $\geq 1,2$; fals result 0,9-1,1. Results. This study was performed in 241 subjects with gastric symptoms, including 95 (39.5%) females and 146 (60.5%) males with a mean age 47.1 (± 16.1) years and a range of 17 to 77 years. Examination for anti *H. pylori* IgM, showed that 151 (62.7%) cases were positive whereas 44 (18.3%) subjects were negative. 46 (19.1%) of tests resulted cut-off or suspicious. Positive were 65 (68.4%) of females and 101 (71.6%) of males without a significant difference between them ($p=0.8$). Here is no significant difference of IgM positivity rate by age group ($p=0.4$). Also, no trend of IgM positivity was found with increasing age ($p=0.09$). Conclusions: This study shows that determining the absorbance index of IgM antibodies to *Helicobacter pylori* could be used to assess the severity of infection. There is a reliable connection between IgM level and *Helicobacter pylori* infection ($p=0.01$).

Keys word: IgM, *Helicobacter pylori* infection, Elisa, gastric mucosis.

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MICROBIOLOGICAL WATER QUALITY OF THREE DIFFERENT RIVERS IN KOSOVA

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ABSTRACT

The main objective of this study was to determine the microbiological water quality, the number of *total coliform (TC) bacteria*, *fecal coliform (FC) bacteria*, *the total number of live bacteria (LB)* and *fecal streptococci (FS)* analyzed from different Kosovo rivers. Water samples were collected during March-October 2013-2014 according to ISO 5667-5:2000 methods. The samples were taken alongside Sitnica, Lepenci and Lumbardhi i Prizrenit rivers, located in three different parts of Kosovo. Our analysis revealed that the *total coliform bacteria (TC)* in 100 ml of water was 44 (CFU/44 colonies/100 ml of water sample) in Sitnica river, 34 (CFU/30 colonies/100 ml of water sample) in Lumbardhi i Prizrenit river, and 21 (CFU/20 colonies/100 ml of water sample) in Lepenci river. The number of FC, in 100 ml of water was zero 0 (CFU/0 colonies/100 ml of water sample) in Sitnica, Lumbardhi i Prizrenit and Lepenci rivers. The number of FS in 100 ml of water was 33 (CFU 33 colonies / 100 ml of water sample) in Sitnica river, 25 (CFU 25 colonies/100 ml of water sample) in Lumbardhi i Prizrenit river and 18 (CFU 18 colonies/100 ml of water sample) in Lepenci river. The total number of LB in 100 ml of water was > 300 (CFU > 300 colonies/100 ml of water sample) in Sitnica river, 260 (CFU 260 colonies/100 ml of water sample) in Lumbardhi i Prizrenit river and 230 (CFU 230 colonies /100 ml of water sample) in Lepenci river. The lower number of *total coliform (TC)* and *fecal streptococci (FS) bacteria* and lack *fecal coliform (FC) bacteria* shows water purity of these rivers according to microbiological aspect, even though the total number of *live bacteria (LB)* are higher than the international level (CFU 300 colonies / 100 ml of water sample) this may be due to waste collector, especially in the Sitnica river.

Keywords: Total coliform bacteria (TC), fecal coliforms (FC), live bacteria (LB) and fecal streptococci (FS)