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PRESENT STATE REGARDING THE DISTRIBUTION OF GASTROPODS FROM THE DANUBE, THE DANUBE DELTA AND THE RIVERS OF ROMANIA

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ABSTRACT

The Danube, the Danube Delta and the rivers of Romania represent a geographical space displaying a gastropod fauna specific to the area located between the Carpathians and the Danube. There are 83 species characteristic to each sector of the Danube: upper (51 species), intermediary (51 species), and lower (64 species). Thus, gastropod populations reflect the ecological conditions of their life environment. The Danube Delta, with a great diversity of aquatic ecosystems, displays the same wide range of gastropods (54 species). Due to their physiological and hydrological features, there can be identified gastropod populations specific to each sector of the Romanian rivers (135 species): 14 species in the mountain torrents and streams, 6 species in the sub-mountain and hill sectors of the rivers, 5 species in the plain rivers, 1 species in the glacial lakes and alpine marshes, 3 species in the lakes and pools from the hilly region, 13 species in the lakes and pools from the plain region, 18 species in the salty and brackish lake ecosystems. According to the ecological character of the rivers, the species *Lithoglyphus apertus*, *Radix ampla*, *Radix balthica*, *Stagnicola palustris* appear more often within the mountain and hilly area; *Bythinella austriaca*, *Amphimelania holandri*, *Ancylus fluviatilis* mostly populate the mountain torrents and rivulets; *Theodoxus fluviatilis*, *Viviparus viviparus*, *Lithoglyphus naticoides*, *Esperiana esperi*, *E. (Microcolpia) acicularis daudebardii* are characteristic to the rivers from the plain area. The global evaluation of the gastropods populations from the Danube, the Danube Delta, and the other rivers from Romania represents an important part of the European malacofauna. The synthesis we made may represent a parameter in evaluating the distribution of the gastropods populations within the Danube basin.

Keywords: gastropods, the Danube, the Danube Delta, rivers, Romania.

GENETIC DIVERSITY AT SOMBORKA POPULATIONS (*CAPSICUM ANNUUM* L.) FOR SOME QUANTITATIVE PARAMETERS

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ABSTRACT

Genetic diversity was assessed for quantitative traits in a collection of Somborka populations (*Capsicum annuum* L.) from different locality of Kosovo include; Krusha, Shtime, Lipjan, Viti and Mitrovica. A total of 5 genotypes in 5 localities were studied under different field conditions over summer 2011. All accessions were characterized for different agro-morphological traits from seedling emergence to crop maturity. The experimental design was a split plot with randomized complete block with three replications. The quantitative and agronomic traits assessed showed variation. The total genetic variation for Plant height (PH) was +11.72 or 27.94%. On maximum leaf area (LA) per plant was determined in locality Shtime on value 2308.38 cm² per plant, while the lowest value for LA was 1136.82 cm² per plant (locality; Mitrovica). The total genetic variation was +1171.56 cm² or 64.92%. Also, the genetic variation for yield per plant was significantly higher at level of probability (LSD $p=0.01$). The average values at all accession for yield per plant was 466.34 g per plant. The differences between them were +425.96 or 91.34%. The high genetic diversity found in the collection showed its great potential for improving agronomic traits in somborka populations.

Keywords: capsicum annuum, genetic diversity, morphological characterization.

DIVERSIFICATION OF THE ENERGITIC RESOURCES AND THE UTILISATION OF BIODIESEL IN ALBANIA

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ABSTRACT

The utilization of energetic resources in its overall complexity plays a significant role in the sustainable development of the country. For a right balance of the energetic resources utilization it is important the evaluation and management of every resource separately (electric energy, oil, gas, renewable energy, etc.). For this purpose the implementation of state of the art technology is needed in order to cope with both the technical and environmental aspects. The utilisation of biodiesel is a real alternative for the diversification of the energetic market not only to cope with the needs of the consumers but also the obligations toward the European community. The utilisation of alternative fuel reduces the CO₂ emissions and is in line with obligations of Kioto protocol. The evaluations linked to the oil byproducts consumption in Albania indicate for a progressive increment with an annual average of 2.2 %. This consumption per habitant though high is relatively low compared to the quantities consumed in European countries. It is 5-6 times lower than in the European developed countries and 2-3 times lower than the East and Central European countries. Currently the import of hydrocarbon products in Albania fulfills approx. 60-62% of the market needs. The data indicates that the consumption of hydrocarbon products rises steadily with an average annual rate of approx. 7% in the last years, whereby the main contribution is played by the fuels at approx. 70-75%. Among the alternative energetic products that are those days widespreading in the world market are the alternative burning fuels obtained from biomass, known as biofuels. They are efficiently compensating and replacing the common fuels.

Keywords: renewable energy, biodiesel, hydrocarbon products, green house

EVALUATION OF GENETIC DIVERSITY FOR REPRODUCTIVE AND PRODUCTION ABILITY AMONG MAIZE LANDRACES (*Zea mays* L.) IN KOSOVA

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ABSTRACT

Kosovo has an area of 10,889 km² or 1,185 million ha, from this area 430.000 ha are forested or 39% and 577,000 ha are agricultural land or 52%. Maize is one of the most important crops in Kosovo, in the past, were planted more than 100,000 ha. Currently planted area with maize landraces is only 5 to 8.42%, from 70 to 80.000 ha, other areas planted with maize hybrids. A study has been conducted in order to evaluation maize landraces originating from different regions of Kosova. In this study are presented value for different quantitative traits for production and reproductive ability of different maize landraces. The experimental design was a randomized complete block (RCBD), and Split-plot method, with three replications. In our research, the largest variability of different maize landraces and treatments, was found for the production ability parameters: yield (Y ha⁻¹), grain weight per ear (GWE), ear weight (EW), number of grain per ear (NGE) and weight of 100 grain (GW-100grain), from 62, 67 to 82, 23%, whereas for the other parameters was found minimal differences from 12,7 to 36,22%. Results show for a high significant (LSDp0.01) differences for maize landrace, years and for production and reproduction traits ability. The Pearson's correlation coefficient among different parameters is positive and highly significant, except for NRE/EL that is negative. Observed values are important and represent sources of genes for specific traits with interest for plant breeding researches and maize production as food for human consumption.

Key words: Maize landrace, ear, variability, production and reproduction ability.

BIO-MORPHOLOGICAL CHARACTERIZATION OF THE AUTOCHTHONOUS GRAPE CULTIVAR “KALLMET” IN KOPLIK, MALËSIA E MADHE, ALBANIA

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ABSTRACT

“Kallmet” is one of the most sprout autochthonous wine grape cultivar in the North-western and Central part of Albania. Study was conducted in three consecutive years, 2009-2011, in Koplik, Malësia e Madhe, 250 m above the sea level, in the North-western part of Albania, in a 10 years old vineyard. For evaluation of the main characteristics the IPGRI Descriptors of Grapevine was used. Form of the new shoot tip of “Kallmet” is half-open, with no anthocianic coloration, and densely prostrate hairs. The upper surface colour of new leaf is green with bronze spots. Flower type is functional female, and the first floescence appears at the 4-5th nodes. Mature leaf size is medium, leaf shape is pentangular, shape of the lateral teeth is convex in both sides, shape of the base sinus is half-open, shape of the upper lateral sinus is closed, and the depth of the upper lateral sinus is 63 mm. Bunch weight is small and bunch density is medium. “Kallmet” has medium-sized spherical deep red to violet berry with soft colourless pulp. Berries are not uniform and there occur a high rate of millerandage because of the lack of pollination during flowering time. Grape yield is 175 kv ha⁻¹, grape must content is 67 ml/100 g fresh grape, sugar content is 21%, total acidity 5.7 g/l. The time of bud break is medium, while the number of inflorescences for fruit-bearing offshoot is 1.7. The annual vegetative growth is 180 cm. “Kallmet” leaves are susceptible to *Plasmopara viticola*, while the berries appear a relatively high resistance to *Plasmopara viticola*, and high resistance to *Uncinula necator* and *Botrytis cynerea*.

Key words: autochthonous, bio-morphological characteristics, cultivar, “Kallmet”, high production rate.

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SOME ANATOMICAL CHARACTERS OF STEM AND SPIKE IN DIFFERENT WHEAT GENOTYPES

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ABSTRACT

Resistance of plants has a great importance in cultivation programs and more dependent on the anatomic construction stem and spike. Investigated show the plants sustainability depends of the development of mechanical tissue (sclerenchyma) and vascular bundles on the stem and spike (Jankovic, 1966). There are investigated some anatomical characters of stem and spike, where as based on the data from the literature, those organs are playing very important role on the fruit production. On the cross section of the stem (six genotypes) and spike (seven genotypes) are analyzed: number and surgace of vascular bundles, number of chlorenchyma bands, number of sclerenchymal cell rows. Archieved results shows that those parameters have varued subject to the genotypes and internodes position on the stem, respectively spikelet's on the spike.

Key words: genotypes, stem, spike, spikelets, vascular bundles, chlorenchyma bands.

INFESTATION OF THE *Carassius auratus auratus* (variety vailtail goldfish) BY THE COPEPOD *Lernaea cyprinacea*(CRUSTACEA)

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ABSTRACT

The copepod *Lernaea cyprinacea* Linnaeus, 1758 is known by the large spectrum of fish hosts which it infests, and to which it can cause haemorrhages and ulcerations. The paper focuses on parasitisation degree of parasitic copepoduloi on a fish in captivity. The field trips organized within Preajba, Romania hydrographical basin in July 2010 allowed us to collect ichthyologic material, namely crucian carp *Carassius gibelio* Bloch, 1782, which was introduced into an artificial basin with a total capacity of 60 l, together with three specimen of *Carassius auratus auratus* (variety vailtail goldfish). The parasitosis appeared at goldfish shortly after the introduction of the sampled specimens of *Carassius gibelio* and water in the artificial basin. The identification of the ecotoparasite was achieved on the base of the general methods of ichthyoparasitological diagnosis, macroscopically by means of clinical examination and microscopically by means of tegumentary curettage from the tegument and fins, as well as through successive washing of the gills and tegument and visualisation at the optic microscope and stereomicroscope in the parasitology laboratory of Dolj Sanitary Veterinary Directorate. After the examination of the tegument and gills, there were sampled the parasites with a clip and dissociation needles. The crustaceans were placed on a mount in a drop of water and then examined at a stereomicroscopic and optic microscope; at the same time, there were taken pictures. The description of the disease makes reference to its etiology and pathology, as well as to the prophylaxis and treatment measures stipulated in the literature in the field .

Keywords: Preajba hydrographical basin, infestation, copepod, *Lernaea cyprinacea*, *Carassius gibelio*, *Carassius auratus auratus*.

AIR POLLUTION FROM KOSOVA POWER PLANT INDUCED CHANGES IN THE PHOTOSYNTHETIC PIGMENTS OF SOME PLANT SPECIES

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ABSTRACT

Study was carried out to assess the impact of power plant pollutions on some plant species grown near in this area. In this paper, content of photosynthetic pigments (Chlorophyll and carotenoids) induced by air pollutants in *Plantago lanceolata* L., *Trifolium pratense* L., *Dactylis glomerata* L., *Rumex crispus* L. and *Convolvulus arvensis* L. leaves were followed. The experiment was conducted three times for the three months (May, June and July) at three localities in southern direction from power plant “Kosova A” and compared with samples from control areas. The highest reduction in total chlorophyll was observed in *Dactylis glomerata* L. (42.42%) whereas, the lowest reduction (19%) was recorded in *Convolvulus arvensis* L.. Similarly in case of carotenoid contents, highest reduction was observed in *Dactylis glomerata* L. (46.99%) and *Rumex crispus* L. (41.39%) and lowest in *Plantago lanceolata* L. (23.53%) and *Convolvulus arvensis* L. (19.67%). The reduction in total chlorophyll and carotenoid for the *Trifolium pratense* L. was observed about 30% for all parameters. The data obtained were further analyzed using one-way ANOVA and a significant change was recorded in the studied parameters. These studies clearly indicate that the power plant induced air pollution reduces the concentration of photosynthetic pigments in the many plant species exposed to the power plant pollution.

Keywords: air pollution, many plant species, photosynthetic pigments, power plant.

MONUMENTS OF NATURE OF MIRUSHA RIVER BASIN

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ABSTRACT

Mirusha River Basin is situated in central Kosovo, on the east side of the Dukagjini Plain. This basin represents the left branch of “Drini i bardhe” (White Drini) River with an area of 337 km² or 3.1 % of Kosovo’s total area. As a result of geographical position, climate, geology and pedology, Mirusha river basin is significant for its geodiversity and biodiversity. According to the IUCN categorization of Protected Areas, in the territory of Mirusha river basin there are several Monuments of nature with high scientific, educational and touristic values. Worth mentioning are the geomonuments (Cave in Panorc, Cave in Dush, Cave in Zatriq and the Canyon of Mirusha River), hydromonuments (Thermo mineral water spring in Banjë, Spring in Carravranë and Mirusha River with lakes and waterfalls), and biomonuments (Pubescent Oak trees in Llazicë, Turkey Oak tree in Drenoc, Turkey Oak tree in Bubël, Turkey Oak tree in Carravranë, etc). The presence of these monuments of nature within Mirusha River Basin adds to the tourism values of this area, but so far these values are not yet recognized and promoted. Precisely the purpose of this paper is to identify the scientific and touristic values of these monuments of nature.

Key words: monuments of nature, geomonument, hydromonument, biomonument, geoinformation.

GEOGRAPHIC DISTRIBUTION AND DIVERSITY OF FRUIT TREE SPECIES IN ALBANIA

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ABSTRACT

The geographic distribution and diversity of fruit tree species using collection data, and a database of 592 georeferenced observations, including all 32 species, from 12 districts of Albania was carried out. A grid of 25 x 25 km cells was used to assess distribution, diversity and richness of species. To include all species at least once, 34 grid cells were selected. Geographic spatial analysis shows that high species richness occurs in Elbasan, Tirana, Diber and Korça districts, where it was observed the highest number of species, respectively 16, 13, 13, 10 species. For all grid cells selected the summarized results on diversity were: Richness (S) 21, Margalef index 3,133; Menhinick 0,863; Shannon 2.621; Simpson 0.902 and Brillouin 2.546. Combination of species occurrence data with climatic data delimitates the potential distribution of each species and allows the modeling of potential richness at the district level. Precipitation of driest month and precipitation seasonality seems to be the most limiting factors for the north-eastern part of Albania, and maximum temperature of warmest month for central Albania, and precipitation of driest month for south-western part of Albania. Based on these modeled richness maps, Elbasan and Berat appears to be the districts with the highest potential fruit trees diversity and with the most potential priority areas for in situ conservation of fruit tree species. Analysis shows 8 new alleles were contributed by additional cells as Berat (3 alleles), Dibra (3 alleles) and Fieri (2 alleles).

Keywords: GIS; geographic information system; species richness, diversity, fruit tree species.

ECONOMIC, ENVIRONMENTAL AND ENERGY ASSESSMENT OF THE TURIN-LYON HIGH-SPEED RAIL

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ABSTRACT

One of the best known cases of struggle for the commons in Italy, characterized by bitter controversies over the last 20 years, is the popular opposition to the construction of the High Speed Railway line (HSR, “TAV” in Italian) between Turin and Lyon, designed to cross the Susa Valley (at the Italian-French border) and the Alps. This HSR project still carries, in spite of twenty years of continuous updating and reworking, a great deal of unsolved environmental and economic issues. An issue of insufficient cost-benefit balance has recently come to clear evidence, especially in view of the non-negligible passenger and freight traffic decrease along the Turin-Lyon direction. The most important aspects dealing with economic costs and claimed benefits, energetic considerations, legal constraints, environmental impact, health impact potential, and the negative experience of other projects, are discussed: they all suggest that the High-Speed Train Turin-Lyon is not a priority for Italy and France, and its construction should be immediately stopped.

Key words: economic, environmental impact, energy assessment, high-speed train, the Turin-Lyon

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A STUDY TO BLOOD CONSTITUENTS OF CARP IN SHKODRA LAKE

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ABSTRACT

Lake Shkodra is characterized by a high biodiversity of fish fauna. The high biodiversity that characterized the lake is the result of a good communication with the sea, and of an extensive network of rivers and stream, communicating with the lake. The present study describes different blood parameters of (*Cyprinus Carpio*, Linnaeus, 1758) population in Shkodra Lake. The samplings were made by catch from the local commercial fishery. The main parameter's measured in fishes blood where: pH, hematocrit, hemoglobin, urea, glucose and total lipid. It was obtained a survey of hematological and biochemical blood parameter's in lake Shkodra fresh water carp.

Key words: biodiversity, blood parameters, fishes blood,

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AIR POLLUTION MONITORING DURING FINISHING PROCESS IN SOME WOOD PROCESSING ENTERPRISES

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ABSTRACT

Wood is one of the world's oldest and most important raw materials. During wood processing, different kinds of material spread out in the air and cause air pollution that can be hazardous for the workers. The vast majority of air emissions are generated from the coatings used in the finishing process. This study monitors seven enterprises in Tirana, Durrës, Kruja, Vlora, Berat and Shkodra. These enterprises use solvent-base coating such as polyurethane and the method of application was spray gun in cabins with water curtain, spray gun in cabins without water curtain and electrostatic application. It resulted that the best method with increased transfer efficiency (TE) and reduced volatile organic compound (VOC) emission was electrostatic coating application and the worst one was the method of spray gun in cabin without water curtain and bad ventilation. Taking in consideration not to charge the enterprises with further investments in technology improvements, we recommended just to switch polyurethane with water-base coating, or at least to use heat for better viscosity of polyurethane instead of adding more solvent. Using pollution prevention techniques can help furniture finishers to reduce emissions and waste, and save raw materials and money.

Key words: air pollution, volatile organic compound, polyurethane, water-base coating.

THE SURFACE CHARACTERISATION OF ACTIVATED CARBON AND ACID ACTIVATED MONTMORILLONITE CLAY

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ABSTRACT

Olive stones were carbonised to 1120 K and activated in steam at 1100 K. Adsorptive properties were measured by adsorption of nitrogen (77 K) and carbon dioxide (273 K) using the BET and Dubinin Radushkevich equations of adsorption to deduce effective surface areas. The carbonised stones had a surface area of 1070 m²/g. This sample had a micropore volume of 480 cm³/kg determined using the data of N₂ adsorption and Dubinin Radushkevich (DR) equation and an integral pore volume of 599 cm³/kg including the mesopores. These characteristics make this activated carbon commercially attractive. The Gurvich rule applied to the data of carbon dioxide adsorption at 273 K considering the CO₂ as a liquid, led to a pore volume of the activated carbon of 135 cm³/kg, not corresponding to the micropore volume of 276 cm³/kg calculated by the DR equation, showing that it is not as a liquid inside the pores. In the case of one acid activated montmorillonite clay the following values of surface properties: specific surface area of 223 m²/g, micropore volume of 90 cm³/kg (DR), cumulative pore volume of 159 cm³/kg were obtained from N₂ adsorption-desorption data. A cumulative pore volume of 35 cm³/kg from the CO₂ adsorption data was determined.

Key words: activated carbon, micropore volume, porosity, isotherm analysis, adsorption isotherms

ORIGINS AND IMPLICATIONS OF DRINKING WATER ODOURS IN BOVILLA RESERVOIR

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ABSTRACT

The relationship between commonly measured limnological parameters and odours was examined in Bovilla reservoir used as source for drinking water. Since 2001 the Bovilla drinking water treatment plant, has been facing taste and odor problems usually during fall and winter time up to early spring. The nuisance, often quite severe, could only be removed by using advanced and costly treatments through adsorption on activated carbon. It was found that there is an obvious relation between the unpleasant smell and taste periods and the stratification situation: smell starts when stratification begins to weaken, and it ends after the overturn when stratification is again establishing. Maximum values of turbidity and rainfall, a gradual increase of the pH and maximum values of phosphate and iron concentrations have been observed during the smell and taste periods. Odour analysis was conducted using gas chromatography ion-trap mass spectrometry. It seems that neither geosmin nor 2-MIB were definitively present in the water at the sampling time, but an astonishing number of various VOCs were present included lower alcohols and aldehydes, borneol, butyl-4-methylcyclopentene, camphor, carvone, norpinon, pinocarvone, propyl-cyclohexanone, alpha-terpineol, verbenon and mono- and sesquiterpenes. It was found that Carvone may be a dominating compound causing the smell.

Key words: Bovilla reservoir (Albania), limnology, drinking water, odor and taste, VOCs

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THE ECOLOGICAL SUSTAINABILITY BASE FOR EXTERNALITY ASSESMENT

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ABSTRACT

Through the monitoring activity, politicians, can evaluate the farmers payments for their externalities on the environment, the farmers can check their costs of agricultural practices and environmental investments and the advisors can orient their farmers to the practices more sound to the environment and less costly for their budget. In this review, a measuring method including environmental and financial indicators is introduced. The set of the environmental indicators used in this method is called Environmental Accounting Information System (EAIS). Some economical indicators are integrated with EAIS. This can be a good base for the evaluation of the externalities on the environment. As measuring method, it considers the Integrated Environmental Accounting Information System in the pedo-climatic conditions of the activity and plant to be considered. Indicators in the EAIS has to be chosen in relation to critical points presented by two different farm conditions that will compared between them. Critical points are the factors hamper the farm management or that can deteriorate the environment and natural resources. A good attention was paid on the methods used for assessment of the indicators in order they to be practical and easy to be adapted by the farmers. For the assessment of the indicators values EAIS need some data which mainly come from: farm economic-accounting system, interviews, farm maps, area public organizations, bibliographical sources, farm nutrient accounting systems, observation in the field and chemical analyses of the soil.

Key words: sustainability assessment, Environmental accounting information system, indicator, organic and conventional farm, case study.

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HISTOPATHOLOGICAL ANALYSIS OF LIVER IN FISH (*Chondrostoma ochridanum*) IN RIVER CRN DRIM

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ABSTRACT

Some structural lesions in liver tissue have been accepted as valid biomarkers of anthropogenic stress at fish. Histopathology is the method of detecting chronic effect of exposure in the various tissues and organs to environmental stressors.

Liver samples of fish individuals collected from River Crn Drim were isolated and processed by standard paraffin procedure for making histological preparations and microscopic analysis. Based on standard histopathological analysis some liver lesions were detected.

Key words: histopathology, liver, River Crn Drim, *Chondrostoma*.

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ASPECTS OF GLOBAL CLIMATE CHANGE IN ALBANIA BASED ON ANALYSIS OF SEVERAL CLIMATE INDICATORS

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ABSTRACT

Global climate changes are evident. These changes contribute to undermining the ecological equilibrium in ecosystems (T. Brosnahan , *e.t.c.*, 1999). Measurable indicators of the identification of climate changes are part of the climate. Some of them are observed for extended periods of time such as: temperatures, rain showers and snow showers, water level of seas, and drying of lakes and rivers. Overall the above-listed indicators have their impacts on the physical degradation of the environment, the subsidence of biodiversity, and on the reduction of productiveness in agro ecosystems. Based on the data obtained from different climatic regions of Albania, it turns out that there are slight changes to the temperature indicators, the increase of climate extremities; the increase of flooding, the increase of erosion, and to the decreasing of agricultural productivity in agro ecosystems. The data are part of a PhD: "Study of the impact of global climate changes and the analysis of bio-climatic indicators in Albania".

Key words: climate change, indicators, impact, agro ecosystem

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HOW THE BIOMORPHOMETRY OF POLLEN COULD HELP TO ASSES THE CLINIC OF ALLERGY OF SOME ALLERGIC SPECIES OF SHKODRA REGION

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ABSTRACT

Polenosis is one of the most spread allergy, that often causes bronchitis and other chronic diseases. Aerobiologic studies are helping medicine and allergic subjects. In this article are given data about relations between allergy degrees and biometry of some allergic pollens of plant species in Shkodra Region. Allergies are presented in several forms and are a continuous threat for a lot of people. The allergy scale is assessed in relation with pollen size and active periods of pollens.

Key words: polenosis, aerobiology, active period, allergic pollen calendar, allergic disease

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DEFINITION AND CATEGORIZATION OF EROSION RATES IN THE FOREST AREA OF TIRANA DISTRICT

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ABSTRACT

Soil erosion represents one of the most destructive phenomena of earth, by both surface and depth erosion and it is becoming in recent years an increasing problem that is seriously affecting our country. In many areas of our country, mountainous and hilly territories, suffer major erosion in both surface and depth, where the solids are deposited in the flat parts of the country, thus leading to a higher content of gravel in agricultural land and filling of the sewage networks. The phenomenon of erosion is greater in the vicinity of residential areas where damages are larger and more sensitive. The most populated district in Albania, Tirana, is one of the most vulnerable in terms of soil erosion. The study of vegetation shows that interventions with negative effects on the forest environment from anthropogenic factors seem to be quite large. This study had as main goal the definition and categorization of erosion rates in natural environments of the forest economies of the Tirana, the rate of recovery of vegetation, slope of slope and rainfall index, which will serve as information and guidance on the land use by farmers, communes and the state regulatory officials, depending on the ownership of these woodland surfaces.

Key words: erosion, soil, slope, land cover, vegetation.

YIELD OF POTATOES PLANT AS A FUNCTION OF IRRIGATION WATER IN THE FIELD OF KOSOVO

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ABSTRACT

Water is a limiting factor to plant production (Food and Agricultural Organization, 1992). Its influence on plant production can be described by the curves of growth. The data used to build the yield-water curves were collected from the plots planted with potatoes in the Field of Kosovo, in a way that the basic conditions of cultivation in each and every plot were almost the same. The only variable factor of production was the total amount of water used in irrigation for the entire period of cultivation. Having also the reaction of the production (potatoes yield) to the various amount of water, it gave us the possibility to look at the shape of the function $P(V)$ and on this base, to determine the water volume that leads to the maximum yield and that water volume which leads to the economic potatoes yield, where the net income (profit) becomes maximal. To find out the shape of the function $P(V)$, the regression analysis was done. After the analysis done consisted on the finding the maximum yield and the yield where the profit gets maximized. The research work presented in this paper is carried out in the Field of Kosovo, where the data about the potatoes yields and total water volumes are picked carefully from the plots under investigation. It provided enough accuracy to apply the regression analysis.

Key words: growth curves, maximum yield, economic yield, irrigation water volume, maximizing net income

MOISTURE INDEX IN THE FIELD OF KOSOVO

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ABSTRACT

The study to determine the magnitude of the moisture index was done in the region of "The Field of Kosovo", having Prishtina as the position where the data are collected and the measurements are done. The data collected from the central meteorological station of Kosovo. The data collected are sun radiation, relative humidity, wind speed and temperature, necessary to be used for potential evapotranspiration calculation (Gjongecaj B., 1998; Monteith, J. L., 1965; Penman, H.L., 1948). A particular computer program was adjusted to convert automatically the above data measured by the devices into potential evapotranspiration, expressed as mm evaporated water per day, calculated based on the Penman-Monteith formulae (Monteith, J. L., 1965; Penman, H.L., 1948). The precipitation was also registered parallelly with the abovementioned climatic parameters. Both, potential evapotranspiration and precipitation were used to characterize the climate of region from the humidity or aridity point of view, based on the prevailing either water deficiency or water surplus. By combining both climatic parameters, ET_p (evapotranspiration) and R (precipitation) were combined, as it seen in the (Thornthwaite W. C., 1948) to determine both: the moisture ratio M_r and the index of moisture, I_m . The latter is considered to be the most important one to characterize the climate from either the humidity or aridity. The classification invented by Thornthwaite region was used to classify in each month and for the entire period of an average year, it was classified as humid.

Keywords: Moisture index, moisture ratio, potential evapotranspiration, precipitation, Penman Monteith formulae, water deficiency, water surplus

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THE ECONOMIC EFFECT OF FERTILIZATION TO INCREASE THE PRODUCTION AND IMPROVE THE QUALITY OF TOBACCO

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ABSTRACT

Combination utilization of nitrogen- phosphates and potassium fertilization in the studied proportions has a direct impact on the production increment and in the amelioration of the quality of the tobaccos. Fertilization maintains a weight proportion between the carbohydrates and proteins, which should be 1.5 – 2 favouring the carbohydrates. The best proportion is in the variant N40, P60, K40-60. This study conducted gives the possibility of an economic evaluation of the way of use, time and the combination of nutritional chemicals in tobacco plants. Also through these nutritional interventions guaranteed quality of tobacco production.

Keywords: soil fertility, economic evaluation, quality, tobacco production

COMPARATIVE EVALUATION OF CYTO/GENOTOXICITY OF COMMERCIAL DRINKING WATERS PACKAGED IN PET AND GLASS, USING *Allium cepa* L. TEST

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ABSTRACT

Drinking water quality is considered a determinant environmental factor for human health. The purpose of this paper was to screen the possible toxicity of chemicals released into commercial natural waters made in Albania, bottled in PET material by using *Allium* bio-test. There were evaluated rates and types of cyto/chromosomal aberrations in meristematic root cells of onions, grown in four commercial waters bottled both in PET and glass. Samples were stored under different conditions: (1) controlled storage (no direct light exposure) or preliminary storage time (PST) for 8 weeks, (2) PST and storage at 40°C for 10 days, in the dark for 10 days and (3) PST and exposure to sunlight and varying temperatures for 16 weeks. The results were compared with tap water (control). Based on the number of dividing cells (NDC), phase index (PI), rate and types of chromosomal aberrations (CA), all PET samples caused significant cyto/genotoxic effects, compared to glass and tap water samples, independently of storage conditions. Toxic effects were detected even after PST (time period compatible to respective normal expiry date). Storage conditions resulted important, demonstrated by the noticeable high level of CA in experiment 3, because of direct sunlight exposure. CA rate was higher in experiment 2 and 3 than 1 (not significant), even in glass. The most frequent CA types resulted bridges and fragments. The *Allium* test used in the present study resulted to be an available, simple and short-term bioassay to detect the chemical quality of packaged commercial waters.

Keywords: *Allium cepa* test, chromosome aberrations, commercial drinking water, PET package, chemicals migration.

THE ROLE OF AGRITOURISM ON BIODIVERSITY AND ECOSYSTEM

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ABSTRACT

Agritourism has its ideological roots in the romanticism of nature and social tourism. Many people today embrace the 18th century view of nature as pure and good in opposition to the moral decay and dehumanizing experiences of urban environments. Agritourism has long been considered a “clean industry”, without any negative effects on the environment worthy of mention. However, this image is now outdated. Most parties are aware of the possible negative impacts and see the need for action. At the same time, agritourism is able to contribute to a growing awareness of the value of nature and, hence, to public support for the protection of ecosystem. Development of agritourism can also be a way to make nature reserves economically viable and to provide employment and income for the local population. In this manner, it can provide a viable alternative to other more damaging activities such as slash and burn agriculture, cattle farming, hunting, wood collection, mining, and the like. These characteristics give tourism an ambivalent position in relation to ecosystem. The agritourism industry very much represents “a double edged sword for the socioenvironmental movement, in that it is an activity which is both reviled and revered. It has become a focus of criticism, as a result of its impacts and a focus of promotion, as a means of achieving sustainable development”. This means that it occupies a specific position in policies aimed at the conservation of ecosystem. This article aims to contribute to the discussion on agritourism in relation to ecosystem. It reconstructs some of the theoretical discussions concerning the relation between the two and possibilities to measure impacts. It will be argued that measuring impacts of agritourism on ecosystem is highly complex and costly and so-called “dose–effect relationship studies” show several weaknesses. Therefore, setting priorities for interventions is not just a matter of knowledge on impacts. Such attempts in the relation between tourism and ecosystem should also be based on considerations of legitimacy, feasibility, and effectiveness. This paper will also evaluate different types of interventions currently undertaken and propose some leads for future intervention.

Keywords: agritourism, biodiversity, protection of ecosystem