Vol. 8 (2): 189-192 (2018)

A SNOW DEPTH ANALYSIS FOR THE NEXT GENERATION OF GLOBAL PREDICTION SYSTEMS

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ABSTRACT

Information on snow depth is a primary input to NOAA's operational numerical weather prediction (NWP) models. Current NOAA's National Centers for Environmental Prediction (NCEP) operational NWP models rely on snow depth observational data for their land surface model initializations. A new snow depth analysis system based on optimal interpolation method is being developed for NCEP NWP models with improved spatial resolution and utilization of multiple sources of observational data. The analysis blends bias-corrected satellite snow depth from the Advanced Microwave Scanning Radiometer 2 (AMSR2) instrument on board the Global Change Observation Mission 1st - Water (GCOM-W1) with an extended network of in-situ stations from the Global Historical Climatology Network (GHCN) to generate snow depth globally at 12 km resolution. A simplified snow accumulation and melt model driven by Global Forecast System (GFS)'s precipitation and temperature has been developed to estimate first guess snow depth fields. Details of the main components of the algorithm and evaluation results are presented.

Key words: snow depth analysis, generation, global prediction systems

Vol. 8 (2): 193-202 (2018)

INFLUENCE OF HEAVY METALS POLLUTION IN SOIL AND CLIMATIC FACTORS ON THE FUNCTIONING OF AGROECOSYSTEMS IN THE FOREST-STEPPE OF THE BAIKAL REGION

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ABSTRACT

Every year (1992-2005), the influence of climatic factors on the content of Cmic and the emission of CO_2 from the soils were investigated in the agroecosystems on the technogenically polluted with heavy metals alluvial soils of the forest-steppe of the Baikal region. The dependence of CO_2 emission on air temperature was revealed, especially in anomalous years. Changes in the eco-physiological indicators (Cmic / Corg, % and C-CO_2 / Cmic, mg/(g h)) and carbon transformation in humus-rich soils showed differences in the stability of the microbial community. Analysis and synthesis of results based on the methodology of comparative and system analysis revealed changes in the mode of functioning of agroecosystems, depending on environmental factors.

Key words: climatic changes, technogenic soil pollution, microbial transformation of carbon, functioning of agroecosystems.

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DYE OF WASTE TEA EXTRACT WITH MORDANT-VARNISH AND THE EFFECT OF COLOR CHANGES ON WOOD

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ABSTRACT

This study aimed to develop natural dyes for wood material that are harmless to humans and the environment. For this purpose, a tea stain and polyurethane single- and double-component water based varnish were applied by brush on the wood surfaces of pine (*Pinus sylvestris* L.), beech (*Fagus orientalis* L.), fir (*Abies*), and poplar (*Populus sp.* L.). The color change (*i.e.*, ΔL, Δa, Δb) and total color change (ΔE) of the samples was determined based on the ISO 2470 standard. According to experimental results, the highest color brightness change (Δl: -52.49) was seen in pine wood with tea dye, the highest red color change (Δa: 11.50) was seen in pine wood with tea dye+water-based varnish, and the highest yellow color change (Δb: 97.19) was seen in fir wood with tea dye+borax. The highest value of total color change (ΔE: 99.512) addition of borax fir wood in tea dye is obtained. Developed tea extract to waste paint, furniture processing industry has the aesthetic appearance of surface processes can be used.

Keywords: Tea extract, furniture industry, natural dyes, surface coating, environmental.

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MULTIPLE LINEAR REGRESSION AND INVERSE DISTANCE WEIGHT (IDW) INTERPOLATION FOR SPATIAL ANALYSIS OF PM_{10} AND SO_2 IN BURSA CITY, TURKEY

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ABSTRACT

Air pollution is one of the most significant environmental problems in Bursa city. The aim of this paper is to investigate the spatial distribution of air pollutants such as sulfur dioxide (SO_2) and particulate matter (PM_{10}) by using IDW interpolation method and influence of meteorological conditions on the levels of air pollution based on seasonality data collected from online website during the period summer 2014 to winter 2017. Then comparing the results with Turkish Air Pollution standards, where PM_{10} concentration levels at most stations in two seasons are above the permissible limit as 48 µg/m³, while SO_2 concentration is lower than the Turkish standards (20 µg/m³) in most stations. Lastly, the main relationships were used to obtain a multiple linear regression equation linking PM_{10} and SO_2 concentrations in summer and winter with meteorological parameters. Climatic variables also influenced as negative and positive on the PM_{10} and SO_2 concentrations, differ from season to another as shown in the Table 1. Where best correlation between the pollutant concentration and meteorological parameters happened in the summer 2015 for PM_{10} ($R^2 = 0.43$) and in summer 2014 for SO_2 ($R^2 = 0.48$).

Key Word: Air Pollution, Bursa, particulate matter PM_{10}, sulfur dioxide SO_2, Inverse Distance Weight IDW, Multiple linear Regression.

**This paper has been produced from Nahida Hameed Hamza Alqaysi PhD. Thesis*

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SCHEMATIC MAP "ECOTONES AND PARAGENESE IN THE VEGETATION STRUCTURE OF THE BAIKAL REGION

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ABSTRACT

Ecological and biocenotic importance of ecotones and communities reflecting paragenese (object) in the vegetation structure of the Baikal region appeals to reveal phtocenotic and typological diversity of communities, to indicate structural-dynamic organization and to forecast the development of vegetation under concrete physical-geographic conditions on wide territories including zonal, height belt and intrazonal differences of environments determining a different degree of natural and anthropogenic resistance of vegetation cover in a whole for the studied territorie.

Key words: phytocenoses-ecotones; communities reflecting paragenese (object); schematic map; species composition of plants on key sites; the Baikal Region.

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ASSESSMENT OF PSEUDOMONAS AERUGINOSA AND SULFOREDUCTON BACTERIA AS AN INDICATOR OF HUMAN HEALTH RISK AND NATURAL WATER RESOURCE

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ABSTRACT

The main objective of this study was to analyze *Pseudomonas aeruginosa* and *Sporogene sulforeducton bacteria* on the water alongside Sitnica, Lepenci, and Lumbardhi i Prizrenit rivers. Preparation and analyses of bacteria species from water samples was realized using standard bacteriological procedures. *Pseudomonas aeruginosa* and *Sulforeducton bacteria* was resulted from zero colonies (0 / CFU/100 mL) according to the allowable international standard value, number of *Sporogene Sulforeducton bacteria* in100 mL water is 10 (0-10 CFU /100 mL), while for *Pseudomonas aeruginosa* bacteria limit number is zero per 100 ml water (0 CFU /100 mL). Our results indicated that the types of *Pseudomonas aeruginosa* and *Sulforeducton bacteria* are not isolated from different water sources on the mentioned rivers, that it can justify the water purity of these rivers according to a microbiological aspect, which provides the internationally allowable level of pathogens in water of rivers. Also, our research has included physical and chemical analyses of water (pH, temperature, conductivity, turbidity etc.) were tested the water before treatment according to ISO method (5667-5: 2000). As we know, the variability of subtypes of different bacterial aspects reflected for research, risk management, and public health strategies.

Keywords: River pollution, *Sporogene Sulforeduction* and *Pseudomonas bacteria*, Sitnica, Lepenci and Lumbardhi i Prizrenit rivers.

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IMPACT OF BUILDING FORM AND URBAN MICROCLIMATE ON ENERGY CONSUMPTION OF RESIDENTIAL BUILDINGS

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ABSTRACT

In this study, certain correlations between the impacts of urban morphology, building characteristics and microclimate on the energy consumption of residential high-rise buildings were investigated. Therefore, influential elements such as morphology urban area, building form and geometric character as well as architectural characteristics, and microclimate as factors influencing the energy consumption of residential high-rise buildings located in Tabriz were tested. The analysis results revealed a comparison between OLS and gamma regression indicating that the gamma regression is more suitable for analyzing the energy consumption of buildings, and with the exception of a few elements, the urban form and architectural characteristics demonstrated a significant relation to the energy consumption of selected buildings. It was also found that some elements of urban microclimate including wind speed and humidity have the highest impact on the energy consumption of buildings. This study is expected to contribute to the improvement of planning and design approach to sustainable and resilient cities through the reduction of energy consumption in residential buildings.

Keywords: Architecture, City, Design, Residential Building.

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EFFECTS EXAMINATION OF THE FACTORS AFFECTING CHOICE OF TYPE OF FURNITURE WITH DATA MINING TECHNIQUE (DECISION TREE)

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ABSTRACT

Data mining is the process of analyzing data from different perspectives and summarizing it into beneficial information. Data mining is a very important technique in determining customer behavior. However, the work done on this subject is limited. By analyzing customer behavior, consumer needs can be identified and satisfaction can be increased at the same time. In this study, factors (age, gender, marital status, child status) affecting the selection of the furniture type (classical and modern furniture) will be analyzed using decision tree which is one of the techniques of data mining. Our analysis is intended to guide future research and to assist in the accumulation of knowledge on the implementation of data mining techniques.

Keywords: Data mining technique, type of furniture, factors.

Vol. 8 (2): 253-256 (2018)

NATURAL RADIOACTIVITY IN MAIN BUILDING AND RAW MATERIALS USED IN ALBANIA

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ABSTRACT

This study has the aim to determine the radioactivity content in building materials in Albania in order to characterize their potential radiological hazard to humans. The natural activity concentrations of ^{226}Ra (^{238}U), ^{232}Th and ^{40}K are carried out using a high-resolution gamma-ray spectrometry. The average activity concentrations, measured by using HPGe gamma-ray spectrometry technique, of natural radionuclides of ^{40}K, ^{226}Ra and ^{232}Th in cements are found to be 203±38 Bq/kg, 48±4 Bq/kg and 21±12 Bq/kg respectively. While, the average activity concentration of natural radionuclides of ^{40}K, ^{226}Ra and ^{232}Th in clay bricks are found to be 646±65 Bq/kg, 36±8 Bq/kg and 36±13 Bq/kg respectively. The activity concentration indices are 0.11 for cements and 0.20 for clay bricks manufactured in Albania. These values are below the screening level of one, indicating that the annual effective dose criterion of less than of 1 mSv/y is fulfilled. Based on the ACI values, cements and clay bricks manufactured in Albania and Kosovo do not pose any significant risk to humans due to their use in dwellings. However, a more accurate evaluation must be performed on final building materials.

Keywords: Building materials; Natural radioactivity; HPGe gamma-ray spectrometer; Activity concentration index; Radiological hazard.

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DETERMINATION OF GROWTH AND NUTRIENT COMPOSITION VALUES IN MEAGRE (*ARGYROSOMUS REGIUS*) AQUACULTURE

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ABSTRACT

The aim of this study was to determine the growth and nutrient composition values of the meagre (*Argyrosomus regius*) from the cage stocking until the harvest weight. The study was conducted in a private farm operating in the Aegean Sea between 26 September 2015 and 30 November 2016. Fish were taken from the cages according to the random sampling method at specific periods and their growth values were calculated and biochemical analyses were carried out. The initial fish weight 8.22±0.13 g reached 373.96±15.65 g at the end of the study. During the study, feed conversion rate was found to be 1.92±0.19. At the end of the study, carcass yield value was 31.63±0.82%, crude protein value was 20.10±0.04% and crude fat value was 3.19±0.13%. Weight gain, specific growth rate and thermal growth values were found to be higher in the fingerling period of the fish compared to those obtained in the other periods. Also, changes in the seawater temperature had a significant effect on feed consumption and net feed conversion rate. While rapid weight gain is an advantage in meagre fish aquaculture, low carcass yield, low fat ratio, cost of feed, market status and consumer preferences have a negative effect on widespread meagre aquaculture. Increasing the fat content of the meagre and adopting different marketing techniques for meagre fish that will be fed with economical feed suitable to the species requirements will help meagre to find a place in cultured fish market.

Keywords: *Argyrosomus regius*, Growth, Meat Yield, Nutrient Composition

Vol. 8 (2): 263-272 (2018)

COMPARATIVE BETWEEN GEOSTATISTICAL MODELS WHICH APPLIED TO ANALYSE THE MAJOR ANIONS CONCENTRATION IN GROUNDWATER KARAPINAR, KONYA, TURKEY*

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ABSTRACT

Groundwater is one of the most significant resources in arid and semi-arid areas and is essential for drinking, irrigation and industrialization. Land use classification map used based on 0.5 km MODIS-based Global Land Cover Climatology, GIS application are important tool that had been used for estimating and predicting the quality of groundwater. Samples were collected from 30 wells in summer and 20 wells in winter within the study, in addition to many wells out the study area to obtain best analysis of anions for year 2013 , the objective of this study is for predicting the spatial distribution of major anions concentration in groundwater of Karapinar in Konya city such as SO_4^{2-}, Cl^-, NO_3^-, HCO_3^- and PO_4^{3-} for assessing accuracy of various geostatistical wizard techniques like CoKriging, RFB and IDW, the map of anions concentration in groundwater was prepared for two seasons utilizing geostatistical models (Ordinary Kriging (OK), Simple Kriging (SK), Universal Kriging (UK), Inverse Distance Weighting (IDW) and Radial Basis Functions (RBF) methods) existing in the geographic information system (GIS) and compared between these methods then choosing the best model for observed the spatial distribution of pollutants, the optimum model was used to predict anions concentration in Karapinar. Where the best model of each anion has been chosen based on prediction errors, and on the relation between measured and predicted concentration for each anion. All the anions groundwater parameters were evaluated and compared with WHO 2008 Standards, some of the collected groundwater samples present the investigated parameter levels exceeded the permissible limits of WHO 2008. Therefore, most groundwater samples are considered unsuitable for drinking and irrigation due to its high salt content based on anions concentrations in this study and land use classification map that including Croplands (yellow), Grasslands (green), Barren or Sparsely Vegetated (Grey), Urban and Built-Up (red) and Open Scrublands (Chartreuse).

Keyword: Groundwater, Geostatistical Analysis, Geographic Information System (GIS), Sulphate, Chloride, Nitrate, Bicarbonate, phosphate.

Vol. 8 (2): 273-282 (2018)

FLORA OF THE HOD VALLEY (ARTVIN, TURKEY)

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ABSTRACT

This study was aimed to determine floristic content of Yukarımaden and Aşağımaden villages and their surroundings in Artvin between June and September 2015. It is located in the north-east of the Eastern Black Sea Region and is taken place in Colchic province of Euro-Siberian floristic area of Holarctic Region and lies between 400 and 2830 m. As a result of this study, total 566 plant taxa belong to 85 families and 358 genera were determined.7 of them belong to Pteridophyta, the remaining 559 taxa were Magnoliophyta which included 7 taxa from Pinidae, 1 taxa from Gnetidae and 551 taxa from Magnoliidae. The largest families recorded were as follows: Poaceae 38 taxa, Lamiaceae 38 taxa, Rosaceae 38 taxa, Asteraceae 36 taxa, Fabaceae 32 taxa, Brassicaceae 26 taxa, Caryophyllaceae 22 taxa, Boraginaceae 22 taxa, Ranunculaceae 20 taxa and Apiaceae 16 taxa. The percentage of phytogeographical origins of 227 taxa (40.1%) was determined. The distribution of the taxa according to the phytogeographical regions was as follows: 130 taxa (22.9%) Euro-Siberian, 83 taxa (14%). Irano-Turanian, 14 taxa (2.4%) Mediterranean, 339 taxa (59.9%) cosmopolit. In the study area, 57 rare plant taxa were identified, 18 of which were endemic. Endemism is 3.2% and included 18 endemic taxa. The endemic and rare non-endemic plants in the study area have been indicated to IUCN threat catagories. Also, one species has been identified under the BERN and CITES contracts in the field.

Key words: biodiversity, hotspots, endemic and rare non-endemic plants, Artvin's flora.

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DETERMINATION OF PHENOLOGICAL PERIODS OF TREES BY THE METHOD OF CONDUCTOMETRY

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ABSTRACT

The electrical conductivity of the near-cambium layer of four tree species in the Southern Baikal region was measured for two years: *Pinus sibirica* Du Tour., *Abies sibirica* Ledeb., *Betula pendula* and *Picea obovata var. coerulea* Malysh. The electrical conductivity of all the selected species has been established to vary from almost zero level to values above 20 μS depending on the season. This conductivity variation interval has two distinct ranges: 1) 0 - 13 μS; 2) 14 - 22 μS. The first range is typical for trees that are in the stage of induced or deep dormancy, the second – for a period of a high physiological activity. Changes from one to the other range are associated with the onset of different natural seasons and usually occur quite rapidly. During the periods of the winter rapid thaw (the period of the induced dormancy), the level of electrical conductivity, which we conventionally accepted as a criterion characteristic of the spring-summer vegetation, does not significantly exceed 20 μS in all trees, but it can enter the "start" boundary of the spring phase change in fir and cedar.

Keywords: Southern Baikal region, cambium layer, electric conductivity, phenological seasons of trees

Vol. 8 (2): 293-300 (2018)

IDENTIFY THE FACTORS INFLUENCING THE SELECTION OF ATTRACTIVE COMPANIES FOR INVESTMENT CASE STUDY: COMPANIES ACCEPTED IN TEHRAN STOCK EXCHANGE

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ABSTRACT

The purpose of this study was to determine the factors influencing the selection of attractive Shunner for this purpose. This A descriptive study was a type of correlation. Data Collection Procedures Review the LaGuardia Functions and Proprietary Relationships Was. The statistical population of this research was the same as those accepted in Tehran Stock Exchange.The results showed that its coefficient of generation and current ratio from the relativistic indices of relativity, The flow has a current flow of active relationships, and the relation between the yields of the properties of the eugenic They have a positive and invisible relationship with the attraction of the admitted securities on Tehran Stock Exchange.

Keywords: Attractive Evil, Property Relations, Stock Exchange.

Vol. 8 (2): 301-308 (2018)

EDUCATIONAL AND MOTIVATIONAL SELF-TEACHING EFFECT ON THOUGHT CONTROL VERSUS DISTURBING THOUGHTS OF ADOLESCENT SWIMMER GIRLS

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ABSTRACT

The purpose of the present study was to investigate the effect of educational and motivational self-talk on thinking control over the intruder's thoughts of teenage girls' swimmers. The method of this study was semi-experimental and applied in nature which information was gathered in field form. The statistical population of this study was all girls in swimmers in Tehran in the age group of adolescents (range from 12 to 18 years old) and 36 female teenage swimmers who have the ability to swim over 50 meters (in chest material) were selected as an available and targeted sample in Tehran and also they were randomly divided into three groups: self-spoken instructional (n = 12), self-spoken motivation group (n = 12) and control group (n = 12). Personal information form, company satisfaction, and Wels and Davis thought control strategies questionnaire (TCQ) were used as a tool. Experimental groups trained in a session under the supervision of their researcher and trainer. The group spoke motivationally after repeating the phrase "I can," and the group spoke with a repetition of the words "ankles" and "stretched hands" about 50 meters of the chest. Data were analyzed by covariance analysis. Results showed that there was no significant difference between thought control and intrusive thoughts of adolescent swimmer girls ($p = 0.69$), that is, self-spoken learning and self-spoken motivation did not have a significant effect on thought control versus disturbing thoughts, and there was no significant difference between the effectiveness of the two interventions. It is suggested that more studies be done on larger and larger samples and that intervention should be used over a longer period of time.

Keywords: Self-talk, educational and motivational, thought control, disturbing thoughts, swimming, teen.

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THE EFFECT OF RATIONAL EMOTIVE BEHAVIOR THERAPY (REBT) ON NEGATIVE PERFECTIONISM AND BURNOUT IN ATHLETES

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ABSTRACT

The main purpose of this study was examining the effectiveness of Rational-Emotive Behavior Therapy (REBT) on negative perfectionism and burnout in athletes. This study was a semi - empirical research and the design of that included pre-test, post- test with control group. Statistical population of this study was adolescent and youth wrestlers. By screening we selected 30 persons of these wrestlers who had high level of negative perfectionism and burnout. These selected athletes randomly divided into experimental and control group. In this study, positive and negative perfectionism scale and athlete burnout questionnaire were used for examining the perfectionism and burnout. For data analysis, independent t-test was used. The results showed that Rational-Emotive Behavior Therapy (REBT) made significant difference in negative perfectionism and decreased it. But, it didn't make significant difference in burnout and its subscales. Overall, this study showed that we can use Rational-Emotive Behavior Therapy (REBT) for decreasing negative perfectionism.

Keywords: Psychological Intervention, Rational-Emotive Behavior Therapy (REBT), Negative Perfectionism, Burnout, Greco-Roman Wrestler.

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DETERMINATION OF CONTAMINANTS IN DRINKING WATER IN YOZGAT, TURKEY

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ABSTRACT

The aims of this study were to (1) ascertain the quality of diffused spring (drinking) water supplied to the city of Yozgat-Turkey for human consumptionby measuringthe major and trace elements, (2) compare the quality of the drinking water with valid international limit values, and (3) evaluate compliance with respect to International Agency for Research on Cancer (IARC) and World Health Organization (WHO) guidelines considering the occurrence of toxic and harmful elements in drinking water. All collected drinking water samples were analyzed in the Bozok University Science and Technology Application and Research Center (BILTEM) toxicology laboratory. The anions and cations of the water samples were analyzed by ion chromatography and the selected elements of the water samples were investigated using inductively coupled plasma–mass spectrometry (ICP-MS). The concentrations of contaminants were evaluated, and the levels of some parameters were above the WHO-specified maximum contaminant levels. This is the first study to investigate drinking water data for the province of Yozgat. It is also the first study to evaluate comprehensive parameters for drinking water in Turkey.

Key words: Contamination, Drinking water, Toxicity, Turkey

Vol. 8 (2): 329-334 (2018)

COMPARISON OF THE CHEMICAL COMPOSITION OF ESSENTIAL OIL AND HYDROLATES FROM *SATUREJA MONTANA*

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ABSTRACT

For this study hydrolates produced during the distillation of *Satureja montana* L., were used, these waters have been analyzed for their organic content. The chemical compositions of essential oil and hydrolates from *Satureja montana* L., were compared. The essential oil and the hydrolates were sampled from the industry and their analyses were performed by capillary GC-MS with an HP-5 column and with an EI detector. Identification of the chemical contituents were made by comparison of mass spectra and retention indices with literature records. Essential oil of *S. montana* L. is composed mainly of oxygenated monoterpenes (66,9%) and monoterpene hydrocarbons (16.5 %). Totally were identified (98.2%) of the chemical constituents and the principal were: thymol (47,0%), p-cymene (8,4%), γ-terpinene (8.0%) and carvacrol methyl ether (7.4%). Both the essential oil and hydrolates from *S. montana* were assigned to thymol chemotype (47.0% and 14.2%, respectively). High content of bioactive compounds presented in hydrolates and also of their nice smell and beneficial effect in the skin, it has been suggested their uses in shampoos and other detergents. Trials on formulation of such products are undergoing in our laboratory.

Keywords: Essential oil, Hydrolates, GC-MS, *Satureja montana*.

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VEGETATION MONITORING: SOME METHODOLOGICAL AND METHODIC ASPECTS OF MONITORING WHILE PLANNING TECHNICAL BUILDING

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ABSTRACT

Under the conditions of a rapid scientific and technological advance and of increase of industrial production, due to complicating of technical systems and to their impact onto the environment, the attention towards sustainable development of natural and anthropogenic systems and of their integrity at large territories drastically increased. Main principle of the solution of this problem is provision of economic activity ecological safety and conservation of natural systems as of the basis for the whole society sustainable development. The realization of ecological safety principle is based on a systematic approach to the analysis and the forecast of subsequent changes and consequences, which may arise both in natural systems and in the whole biosphere.

Key words: vegetation monitoring, ecological monitoring, vegetation formation, sustainable development of natural and anthropogenic systems.

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EVALUATION OF ROAD CONSTRUCTION PROJECTS BY VALUE ENGINEERING APPROACH AS A TOOL FOR SUSTAINABILITY

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ABSTRACT

A great part of financial resources of Iran is spent on civil projects annually. Various problems in implementation of these projects especially road construction projects emphasizing on three factors of time, cost, and quality necessitate a reliable planning and policy making system to upgrade the quality of these projects. Besides, lack of consideration to value engineering in national and large scale projects have caused sense of lack of comprehensive, applicable, and pervasive policy as a solution for managers and experts of these projects and also has led to negative environmental impacts during construction and maintenance. Therefore, due to the importance of this matter, in this research, an innovative approach towards road construction projects considering value engineering has been discussed and evaluated as a tool for achievement of sustainability.

Keywords: construction, project, sustainability, value engineering, management.

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INTENSITY OF CHESTNUT DRYING AND NATURAL RESTORATION OF FOREST IN KEDA MUNICIPALITY (AJARA, GEORGIA)

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ABSTRACT

Sweet chestnut (*Castanea sativa*, Mill.) is one of the major and most common trees in natural forests. The last few decades have been marked with the intensive drying process of the chestnut throughout the world in general and Georgia in particular. The main reason of the chestnut drying in Georgia as well as in Europe and America is the fungus causing the chestnut blight (*Cryphonectria parasitica or Endothia parasitica*), certainly linked to other abiotic, biotic and anthropogenic factors. The aim of the research was to study how intensively the trees are drying and the condition of the natural restoration of the chestnut forests in Keda Municipality (Ajara, Georgia). The field trips employed the methods of traditional route walk, expedition/excursion, and visual recognition common for the forest typology. The pathological condition of the diseased chestnut stands have been evaluated with the methods recognized in the forest pathology. According to the research, it was identified that phytopathological conditions of the chestnut groves is strictly unsatisfying; at the research area (9 600 m²) intensive dying process was fixed; here 24.4 % of chestnut trees (total 164) are healthy, 36.6 are in the dying process and 39.02% overdrided. The natural restoration process of the chestnut is hindered because of solid covering shelter of the dead residuals of plants, intensive development of evergreen sub-forest as well as factors of anthropogenic impact.

Keywords: Chestnut, *Cryphonectria parasitica*, Ajara, Natural Restoration.

Vol. 8 (2): 353-358 (2018)

ECOLOGICAL-GEOGRAPHIC COMPOSITION OF PLANT SPECIES OF TAIGA-STEPPE COMMUNITIES ON LAKE BAIKAL WESTERN SHORE

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ABSTRACT

Phytocoenoses in environmental contact zones reveal in more detail modern trends in the genesis of ecosystems of any range of their organization. Phytocoenoses formed under the extrazonal conditions within definite environmental zones (plant types) play a role of informational models of environmental changes. Such communities can serve as indicators of existing processes and of occurred changes for last decades as well as reflect trends of spontaneous and anthropogenic dynamics of plants formation under definite physical-geographic conditions on a concrete territory. We revealed ecological geographic composition of plants species in taiga-steppe communities reflecting modern structural-dynamic organization of plants at one Pre-Baikalian site, which is contrast by its environmental conditions. It reflects the peculiarities of phytocoenoses formation at the contact of light-coniferous taiga and extrazonal steppe of Lake Baikal western shore.

Key words: ecological-geographic composition, plant species, taiga-steppe communities, Lake Baikal western shore

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THE EFFECT OF SEISMIC SEPARATORS UNDER EARTHQUAKE STIMULUS

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ABSTRACT

In this study, the effect of using separators in concrete reservoirs for the storage of drinking water has been investigated. In general, there are various methods for designing the resistance of these instruments to earthquakes; one is a highly resistant structure so that they can withstand the earthquake-induced forces and resist earthquake, and secondly, it protects the separation of the anti-seismic which is by separation from the base. Air tanks are among the most important urban water utilities that must use their own after an earthquake to provide water and fire. Due to the concentration of a significant part of the mass of the structure, which is located at a relatively high level, it is more likely to be vulnerable to earthquake provocations. In the present study, a 1000-meth cubic meter of concrete concrete reservoir installed on the floor of the insulator has been investigated under the effect of accelerating the equivalent of three earthquakes Kobe, Loma Prieta and Nortrij. And the results indicate that seismic separators have an effect on reducing accelerations to the structure by up to 20% in proportion to the inclined state and reducing stresses to the structure by 50%.

Keywords: Air reservoirs, Base separation, acceleration change, stress reduction, earthquake.

Vol. 8 (2): 367-374 (2018)

COMPARISON OF THE EFFECT OF SIX WEEKS OF STRENGTH AND PLYOMETRIC EXERCISES ON SOME OF THE KINEMATIC PARAMETERS OF THE LOWER EXTREMITIES IN THE IMPACT ON THE FOOT OF FOOTBALL PLAYER'S GIRL OF 20 TO 25 YEARS OLD

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ABSTRACT

The purpose of this study was to compare the effect of six weeks of strength and plyometric exercises on some of the kinematic parameters of the lower extremities in the impact on female football players aged 20 to 25 years. 30 female soccer players were divided into 3 groups: strength training, plyometric and control group with mean (10 persons, age 23.69 ± 2.39, height 163.66 ± 6.45, mass 61.15 ± 5.53) / 61, BMI: 24/51 ± 4/72). During the 6-week period, the players completed strength training protocols of 3 sessions and plyometric exercises 2 sessions per week and each session for 35 minutes, and the control group went to normal football practice. Each of the groups performed 5 hits in the pre-test and post-test. The data were filtered through a marker on the anatomical landmarks of the joints and subjected to low-pass filtering of low frequency 8-Hz cut-offs and recorded by a 240-Hz camera and analyzed with the software Skew Spector 2.3.1. The findings were analyzed by one-way ANOVA and Tukey's post hoc test. The results showed that strength and plyometric training on the kinematic parameters of the lower limb in the impact on the foot of female football players included: ball speed, angular velocity of the knee and thigh in the impact increase and a significant effect ($P < 0.05$), as well as There was no significant effect on the hip, knee, ankle joint angle and angular velocity of the ankle joint ($P > 0.05$). The findings show that 6-week strength and plyometric exercises can significantly improve the speed parameters of the ball, the angular velocity of the knee joint and the angular velocity of the hip in the impact performance on the foot of female soccer players. Therefore, a strength training and plyometric training period for women's football is recommended.

Key words: Strength training, plyometric exercises, kinematics, lower limb.

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INCIDENCE RATE OF URINARY TRACT INFECTIONS IN PATIENTS AND EFFECT OF STANDARD CATHETRIZATION EDUCATION ON KNOWLEDGE AND ATTITUDE OF NURSING IN INTENSIVE CARE UNITS OF SHAHID-MOSTAFA KHOMEINI'S HOSPITAL OF ILAM IN 2017

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ABSTRACT

Urinary infections from the hospital are the most commonly reported nosocomial infections that increase mortality and high costs to the patient. In this regard, a nurse is a member of the health care team who plays a unique role in controlling hospital infections. The knowledge, attitude and performance of nurses in the field of sanitary plays an important role in providing the health of the individual and ultimately the community. The present study first examines the incidence of urinary tract infections in hospitalized patients and then, the effect of standard bladder catheterization training on knowledge and attitude of nursing staff working in ICUs of Shahid Mostafa Khomeini Hospital in Ilam city in 2017 was investigated. The present study was semi-experimental. The statistical society of this study consisted of hospitalized patients and nursing staff working in the intensive care units of Shahid Mostafa Khomeini Hospital in Ilam city in 2017 in the 4-month period. They were selected randomly. Data collection was done in laboratory and field. In order to analyze the findings, the Chi-square test was used at 95% confidence level and all statistical analyzes were performed using SPSS software version 23. The findings of this study showed of the 60 patients under study in Shahid Mostafa Khomeini Hospital in Ilam in 2017 and only four months in the period of four months, only 11.66% of patients had positive urine culture. In this study, the effect of different factors such as gender, age, hospitalization and diabetes on urinary tract infections also was investigated. The results showed that none of these factors correlated with urinary tract infections. Moreover, it was found that the mean scores of nurses 'attitude before intervention were 23.066±3/058 after intervention and 30.353±3/159 and mean scores of nurses' knowledge before intervention was 6.933±2/631 after intervention, 186.06±1/279. Urgent diagnosis of urinary tract infections and urine catheter placement with a standard method is a valuable measure for diagnostic and therapeutic purposes. Skills in proper placement methods and knowing the risks and benefits of this action are obligatory for all nursing staff and it is clear in this study that the quality of this practice improves through standard quality education.

Keywords: Urinary tract infections, Catheterization, Knowledge, Attitude, nursing, intensive care units.

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MONITORING OF POLLUTION CAUSED BY THE OIL INDUSTRY, AREA PATOS – MARINZ

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ABSTRACT

The oil industry has been using the same technique and technology for the oil refining purposes for the last 80 years covering the large geographic extension over 6 districts in the country. Despite this extension, there have been no environmental management strategies and policies. All of these have created problems we face today and that have become very distressful for the people, as the sensitivity towards such problems are increasing day by day. The intensity of the development of the extractive and processing industry has not been associated with environmental responsibilities, which in some cases have existed, however, not with a successful result. The main factors of this pollution are: oil wells, wells (oil collection groups), oil decanter plants, oil pumping stations, oil transportation pipelines, oil processing plants. During these technological process of production and processing, the oil emitting as a result makes the environment polluted with toxics gaseous, liquid, solid, noises and artificial earthquakes. The main sources of surface water pollution are: Oil discharged into the wells; Water that is discharged after the decantation process; The purpose of this paper is to monitor the environmental impact caused by the oil extraction industry. The materials on which this study was based are direct field surveys, studies, analysis, and other engineering data.

Keywords: BTEXs, Phenols, environmental pollution, water discharge, wells etc.

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LIFE QUALITY OF MALE RELATED TO THE URINARY SYMPTOMS OF PROSTATE IN SHKODRA REGION

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ABSTRACT

Benign prostatic hyperplasia is the most common benign tumor in men, and its incidence is age related. Benign and malignant changes in the prostate increase with age. Autopsies of men in the eighth decade of life show hyperplastic changes in >90% and malignant changes in >70% of individuals. The high prevalence of these diseases among the elderly, who often have competing causes of morbidity and mortality, mandates a risk-adapted approach to diagnosis and treatment. Resistance to urine flow reduces bladder compliance, leading to nocturia, urgency and ultimately, urinary retention. An episode of urinary retention may be precipitated by infection, tranquilizing drugs, antihistamines and alcohol. The severity of these symptoms can be quantities with the self-administered American Urological Association Symptom Index. This study is a punctual study (transversal, cross-sectional). The population selected in this study is men over 45 years old in Shkodra Region. The sample selection was simple random. We have distributed 125 questionnaires with closed questions, dotted with cutting-edge. The questionnaire was with self-administration. The time of completion was 2016-2017. The data are calculated with the SPSS 15.00 program. The questionnaire used is the International Questionnaire Standard for HPB control test. (IPPS/AUA-SI) - The International Prostate Symptom Score (I-PSS), the self-administered American Urological Association Symptom Index.

Keywords: hyperplasia, male, prostate, symptoms, urinary.

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ECOLOGICAL APPROACHES IN RURAL SETTLEMENT: A CASE OF TURKEY

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ABSTRACT

Creating physical environments by an ecological approach should aim to meet the needs and demands of people and to enable their cultural and natural sustainability. The present environmental problems result from many factors. One of the most striking factors is architectural activities. Buildings lead the environmental problems to emerge within the process from making construction materials to the end of building stage and building life. It springs from extravagant consumption of natural resources and energy. More the ecological approaches intensify in architecture, less the harmful effects on environment are. It is not needed to look for learning and understanding the ecological approaches in unknown or distant areas. Rural architecture has been shaped around the human needs and demands and it involves the ecological approaches. It is sufficient to comprehend the inherent principles of the rural architecture in order to identify the ecological approaches in architecture. The present study addresses the ecological approaches in the rural settlement in Anatolia and basically in rural houses. The characteristics of rural houses in terms of their formal structure, location, construction materials, indoor organization, and facade organization are assessed in an ecological perspective. The practices based on the aforementioned design parameters would show ways of producing architectural structures which does not harm the environment, relies on clean (environmentally friendly) energy sources, and requires minimum energy. In this regard, the rural houses suited to mode of life and climate may be considered to be a significant resource-guide in generating and saving the ecological environment. Within the framework of ecological approach, examples of traditional houses from various regions in Anatolia are evaluated as visual materials in this study. The criteria to be taken into account in the ecological approaches in rural houses and the parameters affecting the design are explained and the significance of handling the design process in a holistic approach is underlined.

Key words: Ecology, Rural Setlement, Rural House, Village

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MODERN TRENDS OF FORESTS FORMATION AT DIFFERENT ENVIRONMENTAL CONTACTS IN THE BAIKAL REGION

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ABSTRACT

We present here the results of studies of the structure and trends of forests formation in the zone of the transition of polydominant dark-coniferous – light-coniferous forests into dark-coniferous taiga, as well as at the contact site of forest and sub-goletsy belts and mountain tundra in different Pre-Baikal areas. The main structural and spatial-dynamic peculiarities of forest communities structure reflecting different forms of the development of forest vegetation surrounding Lake Baikal are given.

Key words: light-coniferous forests, dark-coniferous taiga, sub-goletsy belts, mountain tundra, environmental contact areas, Lake Baikal region

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GIS USING MULTI-CRITERIA DECISION ANALYSIS FOR ASSESSMENT AND MAP-BASED INDICATORS FOR NURSERY GARDEN MANAGEMENT

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ABSTRACT

Planning and monitoring of landscape cannot be reduced to its outstanding features, but must take into account all its characteristics. In this context geographical information system which is used in assessment of information depending on location and place is a prominent tool for detecting the agricultural areas of nursery garden management. Information technology has an important position in both developing world and commercially growing outdoor ornamental planting sector. Owing to the location of Tokat province in middle black sea region (Turkey), fruit, vegetables and viticulture cultivation have a direct contribution to production and economy. However; the fact that ornamental planting sector of middle black sea region has underdeveloped when compared to agriculture revealed the necessity of cultivating areas for grooving outdoor ornamental plants. This study of nursery garden management in a important region is based on the Geographical Information Systems (GIS) integration of data from soil, climate, altitude, slope, aspect, water resources and transportation maps were formed. Under the spotlights of obtained data, the multi criteria decision making technique is used for detecting the outdoor ornamental plant cultivation zones. Maps showing the appropriate criteria were prepared in GIS and their weighted values were determined. The prepared these maps were done overlay analyzes and determined maps of suitable and unsuitable areas for the cultivation. It is concluded that the company dealing with ornamental plants cultivation can be considered as organized ornamental plant cultivation areas in the determined the appropriate areas.

Keys words: Land use, Indicator, GIS, Nursery garden planning

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VARIABILITY OF ESSENTIAL OIL COMPOSITION OF *ORIGANUM VULGARE* L. SUBS. *HIRTUM* AT DIFFERENT HARVESTING STAGES

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ABSTRACT

The aim of this study was to evaluate the changes in essential oil composition of *Origanum vulgare* L.subs.*hirtum* at different harvesting stages. For this purpose aerial parts of oregano were harvested in pre, full and post flowering period. The essential oil yields (v/w %) were 2.57%, 3.38% and 3.27%, respectively. Number of components in different stages varies from twenty-nine to thirty components in total, while Carvacrol, followed by Thymol, γ-Terpinene and o-Cymene were the main components in the samples. The content of Carvacrol in the essential oil ranged from 51.18%, 37.08% and 46.08% and the highest values were registered at pre-flowering stage. Meanwhile Thymol content ranged from 16.99%, 31.27 % and 23.35% and the highest values were registered at full flowering stage. Regarding γ-Terpinene its content ranged between 8.94, 8.49 and 6.50% and the highest values were registered at pre-flowering period. The content of o-Cymene varies from 8.00%, 6.71% and 9.00% and the highest values were registered at post flowering stage.

Keywords: *Origanum vulgare* L.subs.*hirtum*, components, essential oils