

## EFFECTIVENESS OF SUGAR SORGHUM HYBRIDS IN THE ARID CONDITIONS OF NORTH CAUCASUS

Sergey Ivanovich Kapustin<sup>1</sup>, Alexander Borisovich Volodin<sup>1</sup>, Angelina Sergeevna Kapustina<sup>2</sup>,  
Andrey Sergeevich Kapustin<sup>3\*</sup>

<sup>1</sup>North Caucasus Federal Agricultural Research Center, Nikonov str. 49, Mikhailovsk,  
Stavropol region, 356241, Russia;

<sup>2</sup>Stavropol State Medical University, Mira str. 310, Stavropol, 355017, Russia;

<sup>3\*</sup>North Caucasus Federal University, Pushkin str. 1, Stavropol, 355017, Russia;

\*Corresponding Author Andrey Sergeevich Kapustin, e-mail: [hpplus@bk.ru](mailto:hpplus@bk.ru);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.301>

### ABSTRACT

The aim of the research is to clarify in arid conditions the morphological and yield indicators of new varieties and hybrids of sugar sorghum, their combination with the sugar content in the juice of the stems. In 5 new Moldavian hybrids and 3 Stavropol standards of different ripeness groups, the maximum seedling period - seed maturation (154 days) was fixed for the Sasm-1 variant. The intensity of the initial plant growth on the 30th day of vegetation was most significant in the Yarik standard (61.5 cm) and the Sasm-1 variant (59.5 cm). The same indices obtained the highest indices of plant height (275.0 cm and 272.5 cm) and stem diameter (2.15 cm each). The stem core has a semi-juicy consistency. On average for 2018-2019, the most significant green mass yield and stalk productivity were also obtained from the Moldovan sample Sasm-1 (respectively 81.1 t / ha and 62.0 t / ha) and the Yarik standard (84.2 t / ha and 63.8 t / ha). By the sugar content in the juice of the stems, the majority of Moldovan forms had an advantage over the standards. The maximum sugar content was found in Euralis Es Athena + S4 (Concept III) - 20.9% and BMR Gold + S4 (Concept III) - 20.1%. In the hybrids Sasm-1 and Sasm-2, this indicator varied between 18.4% and 19.2%, which is also higher than the standards (14.1-18.5%). The highest sugar yield per hectare was obtained for the Moldovan variant of Sasm-1 - 3.42 t / ha, which is 0.21 t / ha higher than the medium-late hybrid Yarik. The rest of the studied samples reduced the sugar yield to 1.89-2.75 t / ha.

**Key words:** sugar sorghum, hybrid, selection, green mass productivity, sugar content and yield.

Vol. 10 (3): 441-446 (2020)

## ESTIMATION OF AVERAGE ANNUAL COMMITTED EFFECTIVE DOSE DUE TO INGESTION FOR SOME MEDICINAL AND HERBAL PLANTS USED IN ALBANIA

Erjon Spahiu<sup>1\*</sup>, Manjola Shyti<sup>2</sup>, Irma Bërdufi<sup>2</sup>

<sup>1</sup>*Department of Physics, Faculty of Natural Sciences, University of Tirana, Blv. Zogu I, Tirana, Albania;*

<sup>2</sup>*Institute of Applied Nuclear Physics, University of Tirana, Str. Qesarake, P.O.Box 85, Tirana, Albania;*

\*Corresponding Author Erjon Spahiu, e-mail: [erjon.spahiu@fshn.edu.al](mailto:erjon.spahiu@fshn.edu.al);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.302>

### ABSTRACT

Albania is one of the most important European countries known for export and using of medicinal and herbal plants. The aim of this work has been to provide the data of Average Annual Committed Effective Dose (AACED) due to the ingestion of radionuclides from medicinal and herbal plants. Twenty samples were analyzed for activity concentrations of natural and artificial radionuclides using HPGe gamma spectrometry. The activity concentrations of natural radionuclides vary from 5.28 to 52.55 Bq kg<sup>-1</sup> for <sup>226</sup>Ra, 4.22 to 8.16 Bq kg<sup>-1</sup> for <sup>232</sup>Th, 133.54 to 839.96 Bq kg<sup>-1</sup> for <sup>40</sup>K. The activity concentration of the artificial radionuclide of <sup>137</sup>Cs is found to vary between 0.40 and 15.94 Bq kg<sup>-1</sup>. The lowest and highest AACED values were found to be 0.0048 mSv y<sup>-1</sup> and 0.034 mSv y<sup>-1</sup> in the Blackthorn and Sage samples respectively. The highest value in this plant were about ten times smaller than the world average annual committed effective dose of 0.3 mSv y<sup>-1</sup> provided in UNSCEAR 2000 report. Therefore, the radiological hazard due to ingestion of the natural and artificial radionuclides in these plants is insignificant. Thus, there is no radiological health risk in using of these medicinal and herbal plants.

**Keywords:** AACED, Gamma Spectrometry, Natural and Artificial Radionuclides, Medicinal and Herbal plants

Vol. 10 (3): 447-454 (2020)

## ANALYSIS OF NON-STRUCTURAL BRICK WALLS IN THE FORMER DAJTI HOTEL BUILDING, TIRANA, ALBANIA

Igli Kondi<sup>1\*</sup>, Julian Kasharaj<sup>2</sup>, Anisa Asimi<sup>3</sup>, Erza Askushaj<sup>3</sup>

<sup>1\*</sup>*Polytechnic University of Tirana, Faculty of Civil Engineering, Tirana, Albania;*

<sup>2</sup>*Polytechnic University of Tirana, Faculty of Civil Engineering, Tirana, Albania;*

<sup>3</sup>*K&K Engineering, Tirana, Albania;*

\*Corresponding Author Igli Kondi, e-mail: [i.kondi13@gmail.com](mailto:i.kondi13@gmail.com);  
[jkasharaj69@yahoo.ca](mailto:jkasharaj69@yahoo.ca); [anisaasimi@yahoo.com](mailto:anisaasimi@yahoo.com); [erza\\_askushaj@hotmail.com](mailto:erza_askushaj@hotmail.com);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.303>

### ABSTRACT

The earthquake of 26.11.2019, that occurred in Tirana and Durrës (Albania), identified a problem somehow neglected by Albanian engineers, which is the impact of seismic action on the non-structural brick walls present in buildings with reinforced concrete structure. In many buildings, these walls were damaged and destroyed, causing also deaths. In addition to many other problems, Albanian engineers should also pay attention to the calculation of these walls capacity from seismic action. This article focuses concretely and in a detailed way on the calculation of seismic action on the non-structural brick walls present in the former Dajti Hotel building, Tirana.

**Keywords:** capacity of non-structural brick walls, seismic action, EC 8, structure adaptation, reinforcement of non-structural walls with steel elements.

Vol. 10 (3): 455-462 (2020)

## ADVERSE CHILDHOOD EXPERIENCES AND HEALTH RISK BEHAVIOURS AMONG ADOLESCENTS IN ALBANIA

Rovena Daja<sup>1\*</sup>, Alma Robo<sup>1</sup>, Dorina Toçi<sup>1</sup>, Artan Simaku<sup>1</sup>, Genta Qirjako<sup>1</sup>

<sup>1\*</sup>*Institute of Public Health, Tirana, Albania*

\*Corresponding Author Rovena Daja, e-mail: [rovenadaja@yahoo.com](mailto:rovenadaja@yahoo.com);

Received June 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.304>

### ABSTRACT

Adverse childhood experiences (ACEs) are associated with considerable harmful effects on various health outcomes of the affected individuals and non-negligible costs. ACEs are rather widespread and could increase the risk of a wide range of health risk behaviors. In this context our aim was to assess the association between ACE forms and number with various risk health behaviors in Albania. For this purpose, a cross-section survey was conducted in 2015 in a representative sample of 957 young adults studying in universities of four regions of Albania. The Family Health History questionnaire was used to retrieve information about 10 ACE forms, basic socio-demographic information and various health risk behaviors. Binary and Multinomial Logistic Regression was used to determine the associations between ACEs and health risk behaviors. The most prevalent ACE was emotional abuse (35%), followed by physical neglect (34%), witnessing mother's violence (24%) and physical abuse (21%). Each ACE form was a significant predictor of at least one health risk behavior. Living in household with members that abuse with substances, emotional abuse, physical abuse, parental divorce and witnessing mother's violence significantly increased the odds of suicide attempt by 8.8, 5.8, 4.6, 4.6 and 4.4 times, respectively whereas parental divorce was the strongest predictor of respondents problematic drug use, increasing the likelihood of the later by 24.3 times. The increasing number of ACEs was a significant predictor for most health risk behaviors. There is need for carefully planned strategies and interventions in order to address the burden of ACEs on Albanian population.

**Keywords:** Albania, adverse childhood experience, health risk behavior, prevalence, cross-sectional.

---

Vol. 10 (3): 463-468 (2020)

## ENVIRONMENTAL POLICY AND LEGISLATION IN NATIONAL PARKS THE CASE OF PARNASSOS, GREECE

Athina Zikouli<sup>\*</sup>, Zacharoula Andreopoulou<sup>1</sup>

<sup>1</sup>*School of Forestry and Natural Environment, Aristotle University of Thessaloniki,  
Box 247, 54124 Thessaloniki, Greece;*

<sup>\*</sup>Corresponding Author Athina Zikouli, e-mail: [azikouli@for.auth.gr](mailto:azikouli@for.auth.gr); [randreop@for.auth.gr](mailto:randreop@for.auth.gr);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.305>

### ABSTRACT

National Forest Parks are part of the unique places known as protected areas in respect of their complex ecosystems. Therefore, a sustainable forestry policy is essential so as to implement regionalism in these ecosystems. The organization of National Forest Parks commenced in Greece in 1938. Throughout an 80 year period: one presidential decree and eight Greek laws have regulated the protected areas. Now, it is clear that policy has been reshaped rapidly unfortunately not effectively. In examining further the period of national policy enactment, it is essential to understand whether either political change or difficult circumstances have arisen that have demanded a policy response. This study aims to evaluate the political reform by implementing a two way policy analysis approach firstly, so as to examine the legislative initiatives of previous years, including the new legislation or changes in the existing policy in relation to National Forest Parks and secondly, to estimate whether the policy was created according to political change and forthcoming elections or in consideration of the natural disasters in this country. The methodology is based on a case study for Mt. Parnassos recording how regional development has been promoted through the past years. The conclusions of this research can be helpful to the responsible authorities and parties within the development of a sustainable forestry policy, aiming both to preserve biodiversity and to reinforce the local economy.

**Keywords:** environmental policy, Greek legislation, regional development, Parnassos National Park

Vol. 10 (3): 469-474 (2020)

## IN VITRO EVALUATION OF THE ANTIOXIDANT AND ANTIMICROBIAL ACTIVITIES OF GARLIC JUICE (*ALLIUM SATIVUM*) AGAINST URINARY TRACT INFECTIONS CAUSING BACTERIA

Mahouz Fatima<sup>1\*</sup>, Abdallah Fatiha<sup>2</sup>

<sup>1</sup>*Veterinary sciences institute, University of Tiaret, Algeria;*

<sup>2</sup>*Laboratory of Research on Local Animal Products, University of Tiaret, Algeria;*

\*Corresponding Author Mahouz Fatima, e-mail: [ftmyoub@yahoo.fr](mailto:ftmyoub@yahoo.fr);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.306>

### ABSTRACT

Urinary tract infection (UTIs) are among the most common infections in human. The increased incidence of UTIs in recent decades has been accompanied by the growing emergence of antibiotic resistance. The main objective of this study is the evaluation of the antioxidant and antibacterial activities of garlic juice (GJ). The investigation of antibacterial propriety was been done against the bacterial implicated in UTIs by the disc technique method. The ferr reduction power (FRAP) has been used in the evaluation of the antioxidant activity. Our results have showed a greater antibacterial effect of GJ against all the tested strains Gram- positive and Gram-negative bacteria. *Escherichia coli* and *staphylococcus aureus* are the most sensitive species with a diameter ( $27.9 \pm 1.8$ mm and  $18.33 \pm 1.5$ mm) respectively. However, *Pseudomonas aeruginosa* was the most resistant species with a diameter ( $1.25 \pm 2.5$ mm). The results of antioxidant effect showed that the GJ has a powerful activity compared to standard antioxidant; ascorbic acid and Gallic acid. The yield of the GJ were  $23.44\% \pm 2.69$ . The amount of total phenol content present was  $115,545 \pm 0.0881$  (mg G A E /100ml), while that of flavonoid content was  $42.055 \pm 0.332$  (mg QE/100ml). This investigation shown that garlic juice has a potential source of biological activity, especially the antibacterial and antioxidant effect to use as an alternative to treat the UTIs.

**Key words:** UTIs, Garlic juice, Antibacterial, antioxidant activity.

Vol. 10 (3): 475-482 (2020)

## CLIMATE VARIATION, STRUCTURAL-DYNAMIC ORGANIZATION OF FORESTS AND FOREST MANAGEMENT: SOME ASPECTS OF FORESTS USE, *THE BAIKAL REGION, RUSSIA*

Alexander Sizykh<sup>1\*</sup>, Tatyana Konovalova<sup>2</sup>, Alexander Gritsenyuk<sup>3</sup>

<sup>1\*</sup>*Siberian Institute of Plants Physiology and Biochemistry of RAS SB, 664033 Irkutsk, 132 Lermontova str., Russia;*

<sup>2</sup>*Irkutsk State University, 664033, Irkutsk, 126 Ulan-Batorskay str., Russia;*

<sup>3</sup>*V.R. Filippov Buryat State Academy of Agriculture, 670024, Ulan-Ude, 1 Pushkina str., Russia;*

\*Corresponding Author Alexander Sizykh, e-mail: [alexander.sizykh@gmail.com](mailto:alexander.sizykh@gmail.com);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.307>

### ABSTRACT

On the background of climate dynamics during last decade, the Baikal Region manifests considerable changes in the whole biota structure. It is seen in the structural-dynamic organization, trends of forests development due to considerable variability of vertical and horizontal structures in the coenoses. Especially this is characteristic for the forests formation at the contact of different environments – at the boundary of zonal vegetation types and height belts in Pre-Baikal. Projects of protective forests in the basins of the rivers flowing into Lake Baikal in forests management for water protection and establishment of forests site under special protection within near-shore protective shelter belts excludes industrial forest cutting and limits other forms of forests use. Accounting of environment protection functions of forests at forests management and establishment of validity categories (not only for utility) will allow to stabilize hydroregimes and functioning of Lake Baikal basin' ecosystem in the whole.

**Key words:** climate variation, forest management, forest use, hydroregimes, Baikal region

Vol. 10 (3): 483-490 (2020)

## CONSUMER'S PREFERENCE BETWEEN FARMED CATFISH AND WILD CATFISH IN SWALI, YENAGOA LOCAL GOVERNMENT AREA OF BAYELSA STATE, NIGER DELTA

Ngodigha Sabina Alatari<sup>1\*</sup>, Gbarabe Roland<sup>2</sup>, Moroyei Ebilade<sup>1</sup>, Eleke Ezekiel Victor<sup>1</sup>

<sup>1</sup>*Isaac Jasper Boro College of Education, Department of Agricultural Education, Sagbama, Bayelsa State, Nigeria;*

<sup>2</sup>*North West University, Department of Agricultural Economics and Extension South Africa;*

\*Corresponding Author Ngodigha Sabina Alatari, email: [alatari3004@gmail.com](mailto:alatari3004@gmail.com);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.308>

### ABSTRACT

The purpose of this study is to find out consumers preference between farmed catfish and wild catfish in Swali in Yenegoa, Bayelsa State. Questionnaire was designed with both opened and closed ended questions and distributed randomly to participants. Descriptive statistics, percentage and t-test was use to analyze the information. The results showed that there was no significant difference between farmed catfish respondents and wild caught catfish respondents. The people ate catfish every week because of the taste, flavour and texture. Farmed catfish respondents preferred the dried catfish while wild catfish respondents preferred the fresh catfish. Wild catfish were preferred by females and the Ijaw tribe. Respondants never considered nutritional value of the catfish. Nutritionally, wild catfish contains more omega 3 fatty acid while the farmed contained more omega 6 fatty acid dangerous to the health. It is therefore advisable to consume farmed catfish in moderation.

**Keywords:** catfish, consumer, farmed, fatty acid, preference, wild

## AIR QUALITY OF KARAMAN CITY, TURKEY

Hysen Mankolli<sup>1</sup>, Huseyin Toros<sup>2</sup>, Sukru Dursun<sup>3\*</sup>

<sup>1</sup>NOAA/OAR project, University of Maryland College Park, USA;

<sup>2</sup>Istanbul Technical University, Faculty of Aeronautics and Astronautics, Department of Meteorology,  
Maslak, Istanbul, Turkey;

<sup>3\*</sup>Konya Technical University, Engineering and Natural Science Faculty, Environmental Engineering  
Department, Konya, Turkey;

\*Corresponding Author Sukru Dursun, e-mail: [sdursun@ktun.edu.tr](mailto:sdursun@ktun.edu.tr);  
[toros@itu.edu.tr](mailto:toros@itu.edu.tr); [hysenmankolli@yahoo.com](mailto:hysenmankolli@yahoo.com);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.309>

### ABSTRACT

Karaman is a new and developing city in Turkey's economy is developing and the industry. Geographically, the location of Karaman is located in the south of the Central Anatolia region, in the north of the Taurus Mountains. With its fertile lands, the economy and industry based on Karaman agriculture are developing. Karaman city center has modern industrial facilities open for employment. It is known to have an important industrial potential in recent years. The total surface area of 887 thousand ha of Karaman province; 229 thousand hectares (26%) are flat areas and 654 thousand hectares (74%) are mountainous. The population size is around 250 thousand. Turkey is ahead in the production of bakery products, 35% and 20% of total wheat production is produced by Karaman biscuit manufacturing industry. Turkey, as in general in Karaman in fossil fuel consumption for heating in the cold winter air pollution as it is used in many developed cities is also observed. Traffic vehicles vehicle exhausts and fossil fuels used in industry are other important sources of pollution in the city center. In Turkey, the year 2020 at the beginning of March with the gorilla-19 Covidien epidemic, there has been a significant improvement in air quality. The field dust event that occurred after pandemic virus measures, especially PM pollution increase was observed.

**Keywords:** Air quality, Pollution, Karaman province, Covidien-19 measure

---

Vol. 10 (3): 501-506 (2020)

## IMPLEMENTATION OF EUROPEAN UNION GREEN INDUSTRIAL POLICY AND REGULATION IN NORTH MACEDONIA

Zoran Sapuric<sup>1\*</sup>, Filip Ivanovski<sup>1</sup>, Vladimir Naumovski<sup>1</sup>

<sup>1\*</sup>University American College, Skopje, North Macedonia;

\*Corresponding Author Zoran Sapuric, e-mail: sazoran@hotmail.com;

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.310>

### ABSTRACT

Industry has an important role for the economy. Contemporary industrial policy and regulation are closely linked with the environment. Almost all industrial sectors cause threats to the environment in all phases such as: projecting, designing, preparation, supplying with raw materials, manufacturing, energy consumption, assembling, storage, packaging, transport, and usage of final products and all other phases of life circulation of the products. This produces a number of dangers for the environment. Implementation of environmental policy and regulation leads to creation of green economy and green industry which means that modern industry production has to satisfy environmental standards according to the principles of sustainable development. North Macedonian, as candidate state for a membership of the EU started to transpose EU environmental legal regulation and policy in 2004. This results with stipulation of standards that lead to the environmentally friendly green industry. Also, there are adopted strategic documents in the field of industrial policy that are in compliance with the environmental requirements. The problems appear with practical implementation and industrial sector is not completely harmonized with environmental standards, even there are some positive results. Implementation of environmental standards requires significant financial recourses which should be provided by industrial sector, international donors at the first place from EU funds and state authorities. The main aim of this paper is to analyze the relations between industrial policy and regulation in North Macedonia from the aspect of environment and its harmonization with EU practices, regulation and standards. Additional aim is to give some recommendations.

**Key words:** industrial policy, environment, regulation, standards European Union.

Vol. 10 (3): 507-514 (2020)

## TESTING OF SOME MAIZE HYBRIDS FROM CROATIA IN THE AGROECOLOGICAL CONDITIONS OF KOSOVO

Arsim Elshani<sup>1</sup>, Nexhdet Shala<sup>2\*</sup>, Nazmi Hasanaj<sup>3</sup>, Ibrahim Hoxha<sup>4</sup>

<sup>1,2\*,4</sup>University of “Haxhi Zeka”, Faculty of Agribusiness, Peja 30000, Kosovo;

<sup>3</sup>Seeds factory “Koal seeds”, Istog 30000, Kosovo;

\*Corresponding Author Nexhdet Shala, e-mail: [nexhdet.shala@unhz.eu](mailto:nexhdet.shala@unhz.eu);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.311>

### ABSTRACT

The study object is the research of the suitability of some maize hybrids (*Zea mays* L.) from Croatia. There were six cultivars of maize from Croatia: OSSK 403, OS 430, OSSK 515, OSSK 552, OSSK 617, OSSK 635 while as standard check was used hybrid NS 640 which is among the most used hybrids in Kosovo. Most of evaluated maize hybrids showed very high level of adaptability in agro-climatic condition of Kosovo. Six maize hybrids F<sub>1</sub> generation from Croatia were tested, during the growing season, in agroclimatic condition of Kosovo. The evaluation was conducted at two different localities of Kosovo known for different agroclimatic and pedologic characteristics (Peja - Research Station of Kosovo Institute of Agriculture and Pestova - private agriculture company). The agro climatic and pedology conditions of Kosovo, compared to the obtained yields in the maize indicate that one that does not use the full genetic potential of the hybrids that are cultivated in Kosovo. Due to this reason, a new genetic potential was used into this study. The obtained results indicate that the hybrids cultivated in the fields of Pestovo provide a yield that in other attributes like stem and husk is better than maize cultivated in the fields of Peja. In which trials has been investigated the yield, crude, protein, content and other relevant traits of.

**Key words:** crude protein content, grain yield, phenological traits of maize hybrids.

Vol. 10 (3): 515-520 (2020)

## CYTOTOXIC AND GENOTOXIC EFFECTS OF AQUEOUS EXTRACTS OF HELICHRYSUM ARENARIUM AND CETERACH OFFICINRUM

Edlira Pajenga\*, Albana Pisha, Anastasi Rapi

*\*University of Elbasan "A. Xhuvani", Faculty of Natural Science, Department of Biology, Elbasan, Albania;*

\*Corresponding Author Edlira Pajenga, e-mail: [edlira.pajenga@uniel.edu.al](mailto:edlira.pajenga@uniel.edu.al);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.312>

### ABSTRACT

There are several reported works on the possible anticancer activity of drugs obtained from medicinal plants, due to their ability to block the abnormal cell division considered as an engrossing and increscent therapeutic target. The aqueous extract of *Helichrysum arenarium* and *Ceterach officinrum* were prepared with tap water as is done usually by unhealthy outpatients. The aim of this study was to estimate the potential cytotoxicity and genotoxicity of these plants in *Allium cepa*. Small bulbs were submerged in tap water for 4 days exposed to 5 gr/l, 10 gr/l, 20 gr/l and 80 gr/l extracts prepared for macroscopic and microscopic analyses, respectively. Tap water was used as negative control. Fragments of roots tip were treated with acetoorcein, then clamped vial with acetic acid. The slides were prepared by squashing and the samples were analyzed under a light microscope. At all concentrations, the extracts inhibit root growths compared with the negative control and was statistically significant ( $p < 0.05$ ). The mitotic index decreased owing to increasing concentration at both plants extracts, reaching a maximum percent inhibition of 94% at *Helichrysum arenarium* which showed the highest percent of abnormal cells at the same time. These results show that although their antiproliferative activity give them anticarcinogenic properties but by augmenting the amount of these plants used we may be exposed to genotoxic effects on organism.

**Keywords:** medical plant, *Allium cepa*, mitotic index, anticarcinogenic, genotoxic.

Vol. 10 (3): 521-526 (2020)

## MASTITIS, RETAINED PLACENTA AND BCS EFFECT AND ON THE REPRODUCTIVE PERFORMANCES OF MONTBÉLIARDE DAIRY COWS RAISED IN THE AIN DEFLA REGION OF ALGERIA

Mekhaldi Khira<sup>1</sup>, Meliani Samia<sup>1\*</sup>, Zidane Khaled<sup>2</sup>

<sup>1</sup>*Faculty of nature and life sciences, University of Tiaret, Algeria;*

<sup>2</sup>*The veterinary sciences institute, University of Tiaret, Algeria;*

\*Corresponding Author Meliani Samia, e-mail: [mejanisamia@hotmail.com](mailto:mejanisamia@hotmail.com);

Received May 2020; Accepted June 2020; Published July 2020;

DOI: <https://doi.org/10.31407/ijeess10.313>

### ABSTRACT

To evaluate the factors that may interfere with dairy cow's reproductive performances, this study was carried at a dairy farm at the Ain Defla region at the Algerian center. The cows used in the study were all from Montbéliarde breed. All cow's data were noted, feeding, reproduction, health status and score body. The placental retention, mastitis and postpartum metritis and the BCS at calving and at the first insemination were noted and the influence on the reproductive performance of Montbéliarde dairy cows were quantified. Cows having metritis had a calving to first service interval (CFSI) higher than other cows with 85,10 days and the longest open days or calving to conception interval (CCI) with 185days was recorded for cows with placental retention. In this study the best first service conception rate (FSCR) with 35% was recorded in cows with a body condition score (BCS) between 3,5 and 4 at calving and the best CFSI of 121 days was recorded in cows with BCS between 2,5 and 3 at calving. This study showed the influence of peripartum pathologies on the success of artificial insemination and the open day's length.

**Keywords:** Score body, Postpartum calving- 1<sup>st</sup> Artificial insemination interval.

Vol. 10 (3): 527-534 (2020)

## POTENTIAL USE OF SPENT MUSHROOM SUBSTRATE OF *LENTINULA EDODES* AS A BIOFERTILIZER

Andrew Ravlikovsky<sup>1\*</sup>, Lyudmyla Symochko<sup>2</sup>

<sup>1\*</sup>*Uzhhorod National University, Uzhhorod, Ukraine; Nature Green Ukraine LLC, Transcarpathian region, Ukraine;*

<sup>2</sup>*Uzhhorod National University, Uzhhorod, Ukraine; Institute of Agroecology and Environmental Management, Kyiv, Ukraine;*

\*Corresponding author Andrew Ravlikovsky, e-mail: [andrew@naturegreen.eu](mailto:andrew@naturegreen.eu); [lyudmilassem@gmail.com](mailto:lyudmilassem@gmail.com);

Received May 2020; Accepted June 2020; Published August 2020;

DOI: <https://doi.org/10.31407/ijeess10.314>

### ABSTRACT

Spent mushroom substrate (SMS) is a by-product of mushroom growing. It is often classified as waste despite that it is high in organic matter and mineral micronutrient. In last 10 years, mostly in Europe and Asia, studies of potential ways of reuse of SMS were done. Most of them showed that spent mushroom substrate can be reused as a bioadditive or fertilizer. For Ukraine, where mushroom growing is on its rise, we've decided to test SMS from local producer as a fertilizer. Blueberry was selected as a test culture for this multiyear experiment. For the first year the following parameters were taken for studying: chemical composition of fertilized soil, number of soil microorganisms and the content of total microbial biomass, direction of soil microbiological processes. Spent mushroom substrate of *Lentinula edodes* (shiitake mushroom) was used as an experimental sample. Peat was used as a comparative sample. As a result of studying of the actual content of elements, in terms of 1 mg / 100 g of dry matter for peat, the following data were obtained: Ca<sup>2+</sup> - 427.6, Mg<sup>2+</sup> - 210.6, P<sub>2</sub>O<sub>5</sub> - 78, K<sub>2</sub>O - 29.09, N ammonium - 4.0, N nitrate - 1.61. For the SMS, they were as follows: Ca<sup>2+</sup> - 455.6, Mg<sup>2+</sup> - 729.0, P<sub>2</sub>O<sub>5</sub> - 338, K<sub>2</sub>O - 340.5, N ammonium - 41.0, N nitrate - 183.0. As a result of analysis of the cationic-anionic composition of the water extract, in terms of 1 mg-eq. / 100 g, the following data were obtained for peat: HCO<sub>3</sub><sup>-</sup> - 0.15, Cl<sup>-</sup> - 0.30, Ca<sup>2+</sup> - 0.29, Mg<sup>2+</sup> - 0.50, Na<sup>+</sup> - 0.21, K<sup>+</sup> - 0.10, SO<sub>4</sub><sup>2-</sup> - 1.34. For the SMS, they were as follows: HCO<sub>3</sub><sup>-</sup> - 0.01, Cl<sup>-</sup> - 0.12, Ca<sup>2+</sup> - 2.79, Mg<sup>2+</sup> - 2.64, Na<sup>+</sup> - 1.18, K<sup>+</sup> - 4.22, SO<sub>4</sub><sup>2-</sup> - 1.31. The total salt content for peat was 0.11%, pH - 4.31. For the SMS the total salt content was 0.37%, pH - 4.04. For both soil samples the number of microorganisms and the content of total microbial biomass were determined. The enrichment of soil by SMS led to the growth of microbial biomass (406.34±38.10). In the soil fertilized by SMS decreased number of oligotrophs more than in 3 times and pedotrophic microorganisms in 2 times in compare with soil fertilized by peat. Basing on the number of soil microorganisms coefficients of mineralization, oligotrophy, pedotrophy and transformation of organic matter were calculated. For soil fertilized by peat values of the coefficients were next: mineralization - 1.0, oligotrophy - 1.56, pedotrophy - 1.78, transformation of organic matter - 94.61. For soil fertilized by SMS we got next values: coefficient of mineralization - 1.95, coefficient of oligotrophy - 1.21, coefficient of pedotrophy - 2.49 and coefficient of transformation of organic matter - 26.31.

**Keywords:** spent mushroom substrate, fertilizer, mineral micronutrients, number of microorganisms and the content of total microbial biomass, coefficients of mineralization, oligotrophy, pedotrophy and transformation of organic matter.

---

Vol. 10 (3): 535-542 (2020)

## WIRELESS BODY AREA NETWORKS: SECURITY AND PRIVACY ISSUES

Romina Muka<sup>1\*</sup>, Kreshnik Vukatana<sup>1</sup>, Kozeta Sevrani<sup>1</sup>

<sup>1\*</sup>University of Tirana, Faculty of Economy, Tirana, Albania;

<sup>2\*</sup>Norwegian University of Science and Technology, Faculty of Information Technology and Electrical Engineering, Trondheim, Norway;

\*Corresponding Author Romina Muka, e-mail: [rominamuka@gmail.com](mailto:rominamuka@gmail.com); [romina.muka@unitir.edu.al](mailto:romina.muka@unitir.edu.al); [k.vukatana@gmail.com](mailto:k.vukatana@gmail.com); [kozeta.sevrani@unitir.edu.al](mailto:kozeta.sevrani@unitir.edu.al);

Received June 2020; Accepted July 2020; Published August 2020;

DOI: <https://doi.org/10.31407/ijeess10.315>

### ABSTRACT

The future of ubiquitous health technologies looks promising because of the great potential that Wireless Body Area Networks (WBANs) have. Latest advances in wireless communication technologies and sensors have emerged as a key technology to provide real-time health monitoring of a patient, collecting data of a patient's vital body parameters continuously and also diagnosing many life-threatening diseases. The main purpose of WBAN devices is to collect sensitive information, so providing strict security mechanisms is considered to be essential, in order to prevent situations where data may be lost or modified for malicious reasons. As a result, designers of WBANs should be more focused on creating secure systems, that minimize the possibilities of a malfunction or data corruption from a malicious program. This paper presents an analysis of WBANs related to security and privacy issues. Furthermore, it gives a brief insight into the appropriate security mechanisms to follow. Finally, it is highlighted how necessary it is to implement security solutions, in order to enhance the development of such systems in general.

**Keywords:** WBAN, e-Health, Security, Solutions, Privacy

## EPIDEMIOLOGY AND DIAGNOSIS OF CYSTIC ECHINOCOCCOSIS IN INTERMEDIATES HOST IN THE PROVINCE OF DJELFA, ALGERIA

Hamrat Khadidja<sup>1,2</sup>, Yahia Achour<sup>3\*</sup>, Saidani Khelaf<sup>3</sup>

<sup>1</sup>Directorate of Agricultural Services, Veterinary inspection, Djelfa, Algeria ;

<sup>2</sup>Parasitology department, Faculty of Veterinary Medicine, University of Agricultural Sciences and Veterinary Medicine. Cluj-Napoca, Romania ;

<sup>3</sup>University of Blida 1, Veterinary Sciences Institute, Laboratory of Biotechnology related to Animal Reproduction, Blida, Algeria ;

\*Corresponding Author Yahia Achour, e-mail : [achourveto@yahoo.fr](mailto:achourveto@yahoo.fr);

Received June 2020; Accepted July 2020; Published August 2020;

DOI: <https://doi.org/10.31407/ijeess10.316>

### ABSTRACT

The aims of this study was to determine the prevalence of Cystic Echinococcosis (CE) and the comparison between the results of the post mortem and serological diagnosis of this infestation in the intermediates host in the province of Djelfa (ALGERIA). The study was carried out on a total of 192 animals composed of 40 cattle, 96 sheep and 56 goats. Prevalences of 30%, 21.8% and 14.3% were recorded by the post mortem examination, against prevalences of 35%, 36.4%, 19.6% recorded by the ELISA test in cattle, sheep and goats respectively. High significant dependence between the two methods of diagnostic (necropsy examination and ELISA test) was found concerning the prevalence of hydatidosis ( $P < 0.05$ ). A concordance of the results (convergence) between the two diagnostic methods was observed in 81% of the examined cases. However, a discord in the results (divergence) between the two methods was found in 19% of the examined cases. In sheep and goats, the prevalence observed in female was higher than male. However in cattle the prevalence was higher in male (31.2%) compared to female (25%). In all screened animals there was not significant difference between the two sexes ( $P > 0.05$ ). A higher prevalence 73% was recorded in adult infested animals (cattle, sheep and goats) as compared to younger animals 27%. The lungs were the mostly affected organ with the cystic echinococcosis, with a prevalence of 62.5%, 58.3% and 57.1% respectively in goats, cattle and sheep. These results indicate the importance of cystic echinococcosis in slaughtered domestic animals in the province of Djelfa and an ELISA test could be used for immunodiagnosis of this disease for epidemiological studies and surveillance schemes.

**Keywords:** Djelfa, *Echinococcus granulosus*, ELISA, Necropsy, Prevalence.

## ANALYSIS AND EVALUATION OF THE SUSTAINABLE PROTECTION AND CONTROLLED USAGE ENVIRONMENTS WITH THE SUPPORT OF GIS USING T-TEST: CASE STUDY OF ÇEŞME, İZMİR, TURKEY

Şule Birim<sup>1\*</sup>, Funda Ankaya<sup>2</sup>

<sup>1\*</sup>Manisa Celal Bayar University, Salihli Faculty of Economical and Administrative Sciences, Turkey;

<sup>2</sup>Manisa Celal Bayar University, Alaşehir Vocational School, Alaşehir, Manisa, Turkey;

\*Corresponding Author Sule BIRIM, e-mail: [sule.ozturk@cbu.edu.tr](mailto:sule.ozturk@cbu.edu.tr); [fundaanalankaya@hotmail.com](mailto:fundaanalankaya@hotmail.com);

ORCID Authors: <https://orcid.org/0000-0001-7544-8588>; <https://orcid.org/0000-0002-8305-1131>;

Received June 2020; Accepted July 2020; Published August 2020;

DOI: <https://doi.org/10.31407/ijeess10.317>

### ABSTRACT

Turkey is not only prosperous with a unique natural heritage but the cultural heritage of history of mankind and civilization. In Turkey, there are hundreds of thousands of hectares of natural protected environments with boundaries. Loss of site characteristics and dissolution caused by boundary restriction and change of status are particularly vital problems facing the hundreds of thousands of hectares naturally protected environments conserved by laws in Turkey. In the country, natural protected area is divided into three categories; 1) Sensitive area to be strictly protected, 2) Qualified natural protection areas 3) Sustainable protection and controlled usage areas. This study examines the evaluation of the Sustainable Protection and Controlled Usage Environments in Çeşme (İzmir / Turkey) district to determine the protection strategy and accurate determination based on scientific data. Based on this strategy, in Çeşme, İzmir, Turkey, 17 polygons which were specified as Sustainable Protection and Controlled Usage Areas (SPCUA) by GIS method are reevaluated by 3 specialists who were asked to answer the questions using “yes”, “no”, or “partly” in the chart. “yes” is given 2 points, “no” is given 0 points and “partly” is given 1 point. The goal of this paper is to examine whether there is a substantial difference between the groups specified by GIS method Using dependent sample T-Test. The result of the analysis showed there is no significant difference between the GIS method and the evaluations of all the specialists.

**Keywords:** Çeşme, natural protected areas, Sustainable Protection and Controlled Usage Areas, T-Test

Vol. 10 (3): 563-570 (2020)

## TRANSFORMATION OF GEOSYSTEMS ON THE BAIKALIAN NATURAL TERRITORY

Tatyana Konovalova<sup>1,2</sup>, Alexander Sizykh<sup>3\*</sup>

<sup>1</sup>*V.B. Sochava Institute of Geography, Siberian Branch of Russian Academy of Sciences,  
1 Ulan-Batorskaya St., Irkutsk, 664033, Russia;*

<sup>2</sup>*Irkutsk State University, 664033 Irkutsk, 126 Ulan-Batorskay str., Russia;*

<sup>3\*</sup>*Siberian Institute of Plant Physiology and Biochemistry of RAS SB, 664033 Irkutsk,  
132 Lermontova str., Russia;*

\*Corresponding Author Alexander Sizykh, e-mail: [alexander.sizykh@gmail.com](mailto:alexander.sizykh@gmail.com);

Received June 2020; Accepted July 2020; Published August 2020;

DOI: <https://doi.org/10.31407/ijeess10.318>

### ABSTRACT

The article considers the regularities of formation, development and transformation of geosystems. The text of the paper is an information synthesis of data and knowledge concerning the territory, drawings on V.B. Sochava's theory of geosystems, results from station-based investigations, cartographic information and on GIS technologies.

**Key words:** geosystems, organization, considers regularities, transformation, Baikalian natural territory.

Vol. 10 (3): 571-576 (2020)

## VISUAL DEFICITS CAUSED BY REFRACTIVE ERRORS IN SCHOOL AND PRESCHOOL CHILDREN

Ejup Mahmudi<sup>1\*</sup>, Alketa Tandili<sup>2</sup>, Sulejman Zhugli<sup>2</sup>, Artan Simaku<sup>3</sup>, Redi Hoxha<sup>4</sup>

<sup>1</sup>*Regional Hospital of Tetovo, Eye Department, Macedonia;*

<sup>2</sup>*University Hospital Center "Mother Theresa", Tirana, Albania;*

<sup>3</sup>*Institute of Public Health, Tirana, Albania;*

<sup>4</sup>*Directorate of Public Health, Tirana, Albania;*

\*Corresponding Author Ejup Mahmudi, e-mail: [ejupmahmudi@yahoo.com](mailto:ejupmahmudi@yahoo.com);

Received July 2020; Accepted August 2020; Published September 2020;

DOI: <https://doi.org/10.31407/ijeess10.319>

### ABSTRACT

Anomalies of refraction are the leading cause of low visual acuity in children. They can decrease the visual acuity for near (hypermetropia), for far (myopia) or for both (astigmatism). Their serious consequences are strabismus and amblyopia. The aim of the study is to measure the prevalence of anomalies of refraction. It is a transversal type of study, where were included 3-9 years old children in urban and rural area of the city of Tetovo, Macedonia. In the study participated 1848 children, 917 (49.6%) from them were females and 931 (50.4%) were males. 858 (46.4%) belonged to preschool agegroup 3-5 years and 990 (53.6%) to agegroup 6-9 years. Anomalies of refraction were found in 226 (12.2%) of children (95%CI10.74 – 13.77). Prevalence of anomalies of refraction 12.3%, from which 10.3% preschool children and 13.9% among school children. Prevalence of anomalies of refraction was 11.9% in females and 12.6% in males. Prevalence of Astigmatism was 5.5%, Hypermetropia 4.0% and Miopia 2.8%. Miopia was found more prevalent in 6-9 years old children. Anomalies of refraction and their consequences, amblyopia and strabismus should be diagnosed and treated in early childhood.

**Key words:** children, refractive error, screening, vision

## PREVALENCE OF ANTIBIOTIC RESISTANCE AMONG ESCHERICHIA COLI, MEMBER OF NORMAL FECAL FLORA, ISOLATED IN CHILDREN IN TIRANA – ALBANIA

Denada Lacej<sup>13\*</sup>, Irida Ikonom Hoxha<sup>2</sup>, Majlinda Sana<sup>2</sup>, Esmeralda Meta<sup>4</sup>, Andi Koraqi<sup>1,3</sup>

<sup>1\*</sup>Laboratory of Clinical Microbiology, University Hospital Center “Mother Theresa” Tirana, Albania;

<sup>2</sup>University “Alexander Moisiu” Durres, Albania;

<sup>3\*</sup>Department of Microbiology at Medical University, Tirana, Albania;

<sup>4</sup>Infectious Disease Service, UHC “Mother Theresa” Tirana, Albania;

\*Corresponding Author Denada Lacej, e-mail: [lacejdenada@gmail.com](mailto:lacedenada@gmail.com);

Received July 2020; Accepted August 2020; Published September 2020;

DOI: <https://doi.org/10.31407/ijeess10.320>

### ABSTRACT

Antimicrobial resistance is a major matter of public health concern. The aim of this study is to determine the frequency of antibiotic resistance of E.Coli in fecal flora of healthy children in Tirana – Albania. Samples were taken from about 342 children (excluding all subjects who have been ill / taken antibiotics for the last two weeks) from the kindergartens / schools of Tirana aged 1 year to 10 years (average age  $5,24 \pm 1,44$ ). Rectal swab were plated on MacConkey agar with 10 mg/l ampicillin. Isolated resistant colonies Lac+ were identified like E. Coli (or coli - shape) and were studied further. Antibiotic resistant Escherichia Coli was present in 81 (%) per cent of children studied, and 32 (%) per cent resistance was transferable. 49 % of children that not used antibiotic (with no history of antibiotic consumption) during last year, carried resistant E. Coli and transferable R plasmids were present in 28% of them. 46 % of children that not frequent day/care center carried antibiotic E. Coli and transferable R plasmid were present in 20 % of them. Multiple regression analysis revealed that age, fathers education's, mothers education's sex and number of children in family could be identified as an independent risk factor for the emergence of resistance in the population studies. Normal fecal flora in the population we studied seems to play an important role as reservoir of antibiotic resistance gene.

**Keywords:** *escherichia coli*, antibiotic resistance, children