ABSTRACT BOOK

Mediterranean Natural Sciences and Engineering Congress

MENSEC 2017

Scientific Cooperation and
Science Diplomacy in Mediterranean Basin

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ABSTRACT BOOK

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FOREWORD

The First Mediterranean Natural Sciences and Engineering Congress is organized by the University of Donja Gorica (UDG) with the theme of "Scientific Cooperation and Science Diplomacy in Mediterranean Basin" also supported by Bandirma Onyedi Eylul University, Ankara Yildirim Beyazit University, Istanbul Zaim University, Manisa Celal Bayar University and International University of Sarajevo will be held in October 19-22, 2017 in Podgorica, Montenegro.

The congress aims at bringing together international scholars and researchers in the areas of mathematics, physics, chemistry, biology, bioengineering, earth sciences, civil engineering, computer science, electrical engineering, environmental science, architecture, health sciences, information technology and all other areas of natural sciences and engineering sciences. The congress aims to provide an international platform for the countries in Mediterranean Basin in order to increase scientific cooperation and also improve political dialouge through science diplomacy. The Scientific and Organization Committees are formed from different universities worldwide. We received a large number of applications that has given us the opportunity to choose the best ones to reach the higher scientific level.

I would like to thank to all participants for their enthusiasm to contribute to this project and their willingness both to keep to tight deadlines and to accept editorial recommendations; to all the Scientific and Organization Committee members, for their patience, support and tolerance. Special thanks are for the rectors of our partner universities for their enormous and valuable support. We have been fortunate to have the support of the excellent scholars and authors. We hope to see you in our next congress.

Sincerely Yours,

Prof. Dr. Veselin Vukotic, Rector

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Mediterranean Natural Sciences and Engineering Congress

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Donate Your Body, Be Light to Humanity

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Anatomists and clinicians (especially those who practice surgical procedures) believe in the importance of cadaver for training and professional competence. However, the cadaver is important not only for medical education but also for the other fields of health sciences. The purpose of this presentation to emphasizes the importance of cadaver for society and health sciences. It is also to raise awareness about cadaver donation. In the previous years, mostly unclaimed bodies have been used as cadavers, especially in our country, body donation has been important in recent years. Much of the discussions about the use of the human body in education and clinical practice concerns ethical issues. How correct is it that the unclaimed bodies, which cannot be reached to family or close friends, are used for these purposes? The answer to this question should be no, which the studies on body donation have been carried out for a long time in developed countries. The use of the human body in education and research provides various benefits. Scientific studies on cadavers have aims such as better learning of the human body by physicians who will serve humanity, the ability of surgeons to distinguish between individual differences during surgery, and the development of new surgical techniques. Having reached approximately 60,000 studies with only cadaver key word scanning in the literature will help to understand scientific benefits. There are also sociological gains such as acceptance of the concept of the death. Perhaps the most valuable of these benefits is giving the donor a chance to make the human body useful to humanity after death. As a result, the cadaver donor will set light to other lives after death and will serve humanity.

Assessment of Caregiver burden of Caretakers for Patients' Relatives with Cancer Illness

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Introduction: Cancer; is one of the leading chronic health problems in terms of mortality and morbidity all over the world where care must be taken careful not only in the hospital but also in the home where many symptoms are seen together, requiring long-term treatment.

Aim: This research was conducted to determine the caregiving burden of cancer caregivers and some sociodemographic factors that affect them.

Method: The type of study is cross-sectional. Between December 2017-March 2017, Manisa State Hospital Radiation Oncology was conducted with the caregivers of 106 patients who were treated in radiotherapy and chemotherapy unit. In evaluation of the data, percentage calculation, one-way ANOVA, student t test, Mann Whitney U test and Kruskal Wallis test was used. Data were obtained using a questionnaire consisting of 'Caregiver Information Form' and 'Caregiver Burden Scale'. "Caregiver Burden Scale" was developed by Zarit et al. and its Turkish reliability and validity was made by Inci and Erdem. This scale is a likert type scale consisting of 22 expressions with score variety between 0 and 4. This scale can be taken from the minimum 0, maximum 88 points can be taken. The high scores received from the scale, shows that more difficulties experienced.

Findings: Characteristics of caregivers: The majority of caregivers participating in the survey are 65.1% women, with a mean age of 40.83 ± 13.12 (min. of the caregivers, 46.2% were primary school graduates, 73.6% were married, 26.4% were not children, 50% were working, 45.3% were equal to income, 39.6% had one year or more care, 68.9% , and the majority of first-degree relatives were found to be 97.2%. Caregivers reported that 56.9% gave their patients psychological / emotional support.

Results: The mean score of the patients was 36.50 ± 14.86 (min.4-mak.77). It was determined that caregivers in the direction of the findings obtained experienced moderate difficulties in the social and emotional aspects.

Keywords: Cancer, Radiotherapy, Chemotherapy, Caregiver, Care Burden.

Impacts of Climate Change on the Ecosystem Production: Differences between 1.5ºC and 2ºC Periods

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Since industrial revolution (i.e. 1870), the change in greenhouse gases has been drastically rising at the global scale, and it has dramatic influences on the whole Earth life. Scientists have been studying the impacts of the anthropogenic greenhouse emissions on physical conditions (e.g. temperature, precipitation, wind, short and longwave solar energy, sea level etc.) of the environment. The changes in the environmental conditions influence the production capacity of the terrestrial ecosystems by changing CO2 uptake capacity of the primary producer. A change in CO2 uptake capacity of an ecosystem can directly affect the carbon sink/source ratio, which also directly influence the atmospheric CO2 concentration. Gross Primary Production (GPP) is mainly the amount of fixed CO2 by primary producers in an ecosystem in a certain time, where Net Primary Production is the amount of stored net energy into biomass (i.e. NPP = GPP – respiration of the primary producers). In various studies, the impacts of a 2ºC increase in global average temperature has been studied in the last decades. In this study, GPP and NPP were modelled by Community Land Model version 4.5 (CLM4.5). The future (2015-2100) climate conditions were ensemble means of four climate models, which are driven with Representative Concentration Pathway 4.5 (RCP4.5), which means a 4.5 W/m2 increase in greenhouse gas concentration (GHG) in the year 2100. GPP and NPP were analysed for two periods, when the increases in global average temperature were predicted as 1.5ºC and 2ºC. In general, cold-deciduous broadleafed forests could uptake most of the CO2, i.e. up to ca. 1400 gC/(m^2·yr) in the baseline, ca. 1600 gC/(m^2·yr) in the 1.5ºC and ca. 1650 gC/(m^2·yr) in the 2ºC periods from the atmosphere. Spatial distribution of NPP simulated also quite similar to the GPP in the three periods. Approximately, 50% of the fixed CO2 were used for respiration by the plants. In this study, vulnerabilities of the GPP and NPP under climate change have been investigated. The vulnerability maps are important for developing strategies in ecosystem conservations. For GPP and NPP, most vulnerable areas were in Northern Europe and Scandinavia, Spain and Greece. In those regions, GPP and NPP are up to 60% high vulnerable in the 1.5ºC period. However, GPP and NPP were up to ca. 80% vulnerable almost in entire Europe except Scandinavia and northeast France in the 2ºC period.

Keywords: CLM4.5, Ecosystem Production, GPP, NPP, GHG.

Changes in Renal and Gastrointestinal Markers Following the Administration of Tolfenamic Acid at Ascending Doses in Sheep

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Tolfenamic acid (TA) is a non-steroidal antiinflammatory drug of the fenamate group, which has been commonly used to reduce the pain and inflammation in different arthritic and postoperative conditions. However, high doses of this group of drugs cause undesirable effects on organs and tissues, especially the kidney and gastrointestinal tract. The aim of this study is to determine the effects of ascending doses of tolfenamic acid on renal and gastrointestinal markers in sheep. The research was carried out on thirty Akkaraman sheep at the age of 2-3 years. In the study, animals were randomly assigned to five equal groups. TA was administered intravenously to each group at dose levels of 0 (G0), 2 (G2), 4 (G4), 8 (G8) and 16 (G16) mg/kg. Blood samples were taken from V. jugularis at 3, 9, 18 and 36 hours following the TA administration. Blood samples were centrifuged and plasma

samples were stored at -70 ° C until analysis. Sheep-specific ELISA kits were used to determine renal [Neutrophil gelatinase-associated lipocalin (NGAL) and Kidney Injury Molecule 1 (KIM-1)] and gastrointestinal [Trefoil Factor 2 (TFF-2) and Hydroxyproline (HYP)] damages. NGAL and KIM-1 levels were found to be statistically higher ($p<0.05$) in groups G8 and G16 compared to G0 and G2 at 3, 9, 18 and 36 hours. TFF-2 level at 3, 9, 18 and 36 hours in G16 was statistically higher ($p<0.05$) than that in G0 and G2. HYP level was statistically lower ($p <0.05$) in G16 compared to G0 at 9, 18 and 36 hours. In conclusion, the elevation in renal injury markers at doses of 8 and 16 mg/kg showed the renal damage that could be detected from the third hour following TA administration. The increase in TFF-2 and the decrease in HYP at a dose of 16 mg/kg indicated the gastrointestinal damage. TA administration at doses of 8 and 16 mg/kg could be inconvenient in sheep.

Investigation of an 18/12 Poles Switched Reluctance Motor with Three Dimensional Finite Element Method

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A new SRM having 18/12 poles that is designed to reduce the acoustic noise as differs from the pole ratio of conventional SRMs is investigated by using Ansoft 3D Maxwell software with Three Dimensional Finite Element Method. Flux distribution, inductance and torque variations are obtained with respect to the rotor position and compared with the experimental results. The B-H curve measured by the experiments is used in the calculations. It is observed that the results obtained from the calculations agree with the experimental ones.

Anahtar Kelimeler: Switched Reluctance Motor, Three Dimensional Finite Element Method, Maxwell 3D Software.

Experimentation of Structural Health Monitoring Using Statistically Quantified Electromechanical Impedance

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This article is based on the electromechanical impedance (EMI) method which is one of the structural acoustic methods for structural control of thin plates. In this paper, the structural defects that may occur on square plates have been investigated by piezoelectric wafer active sensor (PWAS) experimentally. PWAS was used in this study to observe the EMI spectra of the models. A set of experimental study has been carried out. Eventually, the results were also quantitatively assessed by using the statistical methods such as the root mean square deviation, mean absolute percentage deviation and correlation coefficient.

Keywords: Crack, Thin Plate, PWAS, Impedance, Structural Health Monitoring.

Integral Representations for A Solutions for The Diffusion Differential Equation with The Discontinuous Coefficient

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We consider the differential equation

$$l(y) \coloneqq -y'' + \left[q(x) + 2\lambda\sqrt{\rho(x)}p(x)\right]y = \lambda^2\rho(x)y, \quad x\epsilon[0,a)\cup(a,\pi] \qquad (1)$$

with the boundary conditions

$$U(y) \coloneqq y'(0) = 0, \ V(y) \coloneqq y(\pi) = 0 \qquad (2)$$

where λ is spectral parameter, $y = y(x,\lambda)$ is an unknown function, $q(x)\epsilon L_2(0,\pi)$, $p(x)\epsilon W_2^1(0,\pi)$ are real-valued functions and $\rho(x)$ is the following piecewise-constant function with discontinuity at the point $a\epsilon(0,\pi)$ such that $a > \frac{\alpha\pi}{\alpha+1}$;

$$\rho(x) = \begin{cases} 1, & 0 \le x \le a \\ \alpha^2, & a \le x \le \pi \end{cases}, \quad 0 < \alpha \ne 1.$$

In this work we construct useful new integral representations for the fundamental solutions of the quadratic pencil of the Sturm-Liouville equation with piecewise-constant leading coefficient. We also study some significent properties of the kernels of these integral representations for the solutions.

"Making Change Visible" - Shaping the Land to Create a Dialogue between a City and Nature

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Rapidly changing urbanization is causing about many challenges in the use and consumption of land. In some countries, urban zones has grown much faster than the urban population, resulting in less attention and creating more non-productive land use patterns. These horizontally expanding cities find it increasingly have difficulties in deal with an ever increasing urban population, and are not sustainable over the long-term such as congestion, infrastructure issues, pollution, and social disaggregation. These subjects assist the countries to work more sustainable and creative. In relation to urban design, many countries still disregard the importance of a country's visage, public spaces, and public infrastructure, not fully comprehend the relation with quality of human life, social development, and other key components of human well being. In the circle of the developing world, designers have new design problems which are related with the built environments should provide health and well being for current and future generations who live and work in the ecologic spaces. In the near future, we will not have lots of green spaces because of urbanization. However we have chance about create more green spaces in our common areas and also interiors. Evidence of the emotional and psychological benefits of nature is really impressive that research shows its ability to reduce stress, to aid recovery from illness, to enhance cognitive skills and academic performance. This paper reviews some urban renewal projects as contemporary cases of greenery in the Turkish urban environment, in order to evaluate the interaction between people and nature in the context of urban zones. The aim of the research is that understanding the effects of urbanization process in relation of urban design and how municipalities try to increase green areas in our urban environment.

Keywords: Urban Renewal, Urban Green Zones, Greenery, Urbanization, Green Landscape.

Investigation the Effect of the Bitumen Weight on Heating of Electrically Conductive Asphalt Concretes

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One of the most important problems in highway transportation since earliest times is traffic interruption due to icing and snow accumulation. In recent years, road engineers are working on new techniques to prevent icing on the pavement surfaces. One of them is electrically conductive asphalt concrete. The asphalt concrete can be transformed into conductor from insulator by added the electrically conductive components and additives. In this way they behave like a resistance and when they exposed to electric current, they heat up. This allows the use of such technologies as anti-icing. In this study, 18 specimens of conductive asphalt concrete were produced by using steel slag as coarse aggregate, basalt as fine aggregate and carbon powder as mineral filler. The specimens consist of 6 different series as 5.5, .6.0, 6.5, 7.0, 7.5 and 8.0 % bitumen by weight. Resistivity measurement and heating with electric current tests were carried out on the specimens and it was concluded that the bitumen amount is effective on the conductivity.

Keywords: Electrically Conductivity, Anti-icing, Asphalt Concrete, Bitumen Effects.

The Effect of Conductive Component Type on Conductivity in Conductive Asphalt Concrete Mixtures

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Icing is one of the most important problems in highway transportation. Therefore, the use of conductive asphalt technology to prevent icing on road surfaces is one of the important issues that pavement engineers research on it. Materials which are passed the electric and heat energy called as conductive material. Electrical conductivity in materials at atomic sizes was performed by "load-bearing elements". These are electrons or electron space. In order to high conductivity, resistivity must be low. Traditional asphalt concrete consists from mixture of insulator bitumen, aggregate and mineral filler. According to the conductive polymer composite theory, conducting asphaltic concrete reaches the low electrical resistivity by way of conductive constituents are added to their inside such as shape of powder, fibers and particle. When the constituents are added to asphalt concrete mixtures to provide the desired conductivity also required that asphalt concrete meets the highway specification limits and be economical In this study five different conductive asphalt concrete with different conductive component and some electrical properties such as resistivity, electrical heating properties were investigated in laboratory and its results were correlated.

Keywords: Conductive Asphalt Concrete, Conductive Component, Anti Icing, Electrical Properties.

Health Promotion in The Elderly

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Nowadays, fertility, mortality and the reduction of preventable diseases, increasing the standard of living due to scientific and technological progress, can be made more independent of the activities and results in improved quality of life was prolonged life expectancy. Therefore, the elderly population has increased all over the world. For the rapidly aging world population, the fifth goal of the World Health Organization's "Health for All" in the 21st century is directly related to elderly health. Today, one of every 7 people in the developed world, while over 65 years, this ratio will be 2030 when one out of every 4 people. According to the Statistical Institute of Turkey (March 16, 2017), the ratio of the elderly population in the total population was 7.5% in 2012 and rose to 8.3% in 2016. In the demographic projections, it is expected that the population of Turkey will be 17.3 in 2050 by the age of 65 years. In terms of prevention of problems that may develop in old age it is important to improve the health of the elderly. The World Health Organization has adopted the concept of "active aging" to improve health in old age. Active aging; Health, safety and accession are the most appropriate means to provide the process. In addition to extending the life of the individual, it is important to improve health in old age. The lack of health insurance, lack of access to basic health services, inability to take advantage of social services, poverty are affecting the health status of the elderly in the negative direction. Factors such as lack of health care, inability to access basic health services, inability to benefit from social services and poverty affect the health status of the elderly in the negative direction. As a result, the most important problem in the coming years in the world and in Turkey in front of the society and the health system will be the aging population and its consequences. Improving the health of the elderly in our country, the regulation of social and economic policies and programs to improve the health of the elderly and implementation, improvement of environmental conditions, state revenues that affect the health of the elderly, is of great importance in improving factors such as health and social security. In this context, medical staff, especially nurses are paramount duties and responsibilities in the promotion and protection of the elderly and health.

Keywords: Elderly Health, Health Promotion, Active Aging.

A Financial Analysis on Realization of Elections and Votings as Online in Turkey

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Recent advances on internet, computer and information security make it possible to hold elections and voting online by providing security, safety and privacy. Yet, throughout the world, electronic voting applications are still not widespread. Main reasons behind the unpopularity of these systems are people's lack of trust, and election authorities' prejudgement regarding the potential cost of required infrastructures. In fact, these investments shall not be cheap. However, in long term the expected benefits shall be much higher than the investment costs. In this study, financial costs and benefits of holding online elections, instead of conventional elections, are analysed. These investment costs include but not limited to, high capacity web servers, system administration computers, stable web pages, and complex computer/phone applications. Nevertheless, there will be additional infrastructure costs, where the public internet access is limited. Yet these costs will mostly appear during the initial deployment phase of the system. When the system becomes active, then the sustainability costs will be much lower in long term. Contrarily, non-negligible costs of conventional elections repeat for each event. Electronic voting system will not only eliminate expenses such as personnel costs, ballots, security, safety and logistic costs, but will also let the community to be integrated into the knowledge era. The local and regional governments will be able to get peoples' opinion for actions and regulations with less cost, and in accordance with these ideas, they will be able to create policies more effectively for the financial and moral needs of the society. In addition, surveys, petitions and campaigns can be realized more reliably and cheaper through electronic voting systems, so that the public can assume a more active role in socioeconomic policies. Last but not least; our study includes a comparative financial analysis regarding costs of traditional and online elections, mostly focusing on Turkey. We made use of election-related

statistical data from Turkey and several other states, as well as costs of technology infrastructures. Hence, we built a simple financial model for online elections, discussed their benefits, and presented proposals for Turkey.

Keywords: Electronic Voting, E-Democracy, Information Society, Election Costs.

Indoor Positioning as a Security Countermeasure for the Internet of Things

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The Internet of Things, especially the sensor networks, continues to emerge with new technologies as their usage becomes widespread. This popularity also raised concerns regarding security flaws within the communication between the devices and for the systems in general. These networks consist of devices, which have limited processing capabilities and low power resources. Moreover, they are also very vulnerable to theft, disappearance, and unintended (malicious) translocation. These may harm the network or the system if the data is critical. Indoor Positioning Systems may help to mitigate negative effects of these physical interventions by adding an additional security layer. This study, aims to offer a physical security method, so that every device (i.e. sensor node) with enough capabilities will be aware of its own position with help of a pre-installed fingerprint database. This fingerprint database will be generated before the deployment using signals from anchor WIFI access points or Bluetooth beacon devices. Each device will have the full database and will be able to instantly calculate its up-to-date position and will compare it to the its predefined supposed position. If any device detects that its position has changed significantly (i.e. room-wise) then it will broadcast emergency-like messages for a while to its neighbor devices, if there are any. And after a predefined timeout period, if the device won't be returned to its original place, it stops sensing, wipes its sensor data memory and quits transmitting any kind of information. During this phase, the device only checks its position. Finally, when the device returns back to its original place, then it will continue operating as usual. Thus, sensitive information will not leak, any theft or loss will be discovered and the network/system operation will be sustained.

Investigation of the Physical Properties in Certain Tree Species' Sap- and Heart-Woods

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In this study, some of the physical properties of heartwood and sapwood of scot pine (Pinus sylvestris), Calabrian pine (Pinus brutia), Eucalyptus (Eucalyptus grandis), Poplar wood (Populus uzbekistanica) grown in different parts of Turkey were determined. For this purpose, the air-dry density (D12), oven-dry density (D0), volume weight value (R), volumetric shrinkage percentage (βv) and volumetric swelling amount (αv) were tested on the prepared samples. According to the test results, the physical properties of the heartwood samples differed from those of the sapwood samples due to the difference in their anatomical structure. These differences were occurred to be higher in heartwood than sapwood in all specimens except for Scots pine. As to Scot pine, the physical properties were measured higher in the sapwood than those of heartwood. As a result, it can be said that the shrinkage and swelling values of the sapwood are better than the heartwood in other tree species except for Scots pine.

Keywords: Heartwood, Sapwood, Density, Shrinkage, Swelling.

Orthopedic Trauma Observed in Emergency Departments and Nursing Care

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It is reported that there are about 33 million musculoskeletal injuries per year in the world, of which 20 million are fractures, dislocations and sprains (Zhang 2012). In Turkey, the most common (29%) trauma type among those who applied to emergency departments due to trauma were crush, fracture and dislocation in two different studies conducted in recent years (Keskinoglu and Inan 2014); in another study in which triage codes were used, it was found that 'musculoskeletal system-associated disorders' in the 'urgent cases' were significantly higher (21.65%) among the applicants (Cevik and Tekir 2014). Bone, soft tissue, and neurovascular trauma do not constitute an emergency unless there are life-threatening bleeding or pelvic fractures, whereas in the case of injuries, it is considered an emergency because of the high probability of neurovascular injury, disability of extremities and pain (O'Steen 2003). It is crucial to provide and maintain quality care with an effective treatment to protect the structural and functional features of the tissues, organs or extremities, in an accurate, timely and problem-oriented manner by early intervention of the patient exposed to musculoskeletal trauma. In this context, it has been emphasized that the presence of a well-equipped emergency department and well-trained and multidisciplinary health care teams is necessary and this is effective in reducing the mortality, morbidity and length of stay for patients with trauma (O'Brien 2003; Bongiovanni et al 2005; O'Mahoney 2005; Horn et al 2011; Akyolcu et al 2017). A trauma-related shock that can cause adverse changes in the patient's life may develop and may not be found out why it occurred. Prior to the evaluation, safety must be ensured especially in the region where trauma develops, the individual should be assessed in general, and consciousness and orientation control must be made. It is extremely important that the nurse can perform comprehensive diagnosis, accurately record data, and interpret in evidence basis (Boström et al 2012). As a result, advances in surgical and orthopedic treatments positively affect the outcome of patients with soft tissue injuries and fracture. Prevention of traumas with training and regulations established for this purpose is the main goal for all traumas. The main purpose of orthopedic patients' care is to maintain neurovascular status and motor functions at normal levels. Emergency nurse should be sensitive to changes in pain, sensation and movement, especially in

patients with impaired consciousness, should carefully observe the patient for possible complications and prevent damage to the extremities.

Keywords: Orthopedics, Trauma, Emergency Services, Nursing.

Should Historical Places Conserved or Used, Why Not Both?

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Globalisation, technologic improvements, innovations and increased amenities in transportation increased the popularity and accessibility of cities but at the same time added pressure on cultural and natural landscapes. This caused exceeding of carrying capacities in some cases due to urbanisation, fast population growth and increased tourism. Even though urban tourism plays an important role in urban development, it may cause damages to historical sites or places which are generally centre of attraction. Locals can gladly welcome the tourists because of the economic development, on the other hand they can complain about the intense usage and the crowdedness. Istanbul Büyükada, which has a very high visitor potential especially during the summer season, has been chosen as the study area. Büyükada which has been used both as a residential and summer resort area since the Byzantine period, is visited by many domestic and foreign tourists above its carrying capacity because of its historical, cultural and natural beauty. The population of locals on the island is around 7000 and the summer population of the island can rise up to 30.000 in the high season. In this context, problems in the area were determined and a survey study was done. The survey was conducted to local people, tradesmen and domestic / foreign tourists. As a result of the findings obtained, landscape planning proposals has been developed. The study revealed that the intense tourist presence of the island has caused both tourists and local people to be dissatisfied. It is determined that some of the inhabitants of the island have left the island in summer, and that some tourists do not want to come back to the island. It has been determined that transportation is an important problem in the island and many accidents occur every year. It has also been determined that intensive use damages the natural and cultural structure of the island and tourism activities started to shape culture. Almost all commercial activities evolve according to touristic needs and this process result in the reaction of the local people. In this context, the general landscape planning principles for historical places were adopted and developed specified for Büyükada, aiming to provide sustainability of the historical, natural and cultural structure of the island as an attraction area for both local people and tourists.

An Urban Cultural Heritage: Market Gardens of Istanbul

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Contemporary cities are often threatened by urban development. Between 1999 and 2000 most of the European cities at least % 2.8 of lands has been changed in use and urban areas significantly increased. Except mature green lands in a city, we try to create breathing small green areas between luxury buildings and thinking about that this should be the civilization. Unfortunately, it is not! We should conserve the cultural valuable areas to survive them for next generations to give richness to the diversity. It is important for civilization. One of the cultural value areas is market gardens. Planners and political decision makers should carefully consider the role of market gardens in urban contexts, since urban areas are expected to keep growing in the future and threatening agricultural lands. According to Millennium Ecosystem Agency (2005), agriculture supplies all three major categories of ecosystem services; provisioning, regulating and cultural services. Most tangible services provided by agriculture are food, fuel and fibre, a number of other services are also provided; soil fertility, regulation of pollinators, pests, pathogens, wildlife, water quality and supply, greenhouse gas emissions and carbon sequestration. Istanbul is the city that environment, history, culture and heritage concepts gained a meaning and come together. As a trace of traditional heritage from Ottoman and Byzantium, as a cultural heritage those market gardens are very important elements. They should be conserved like an object which presented at a museum to show the past habits and agriculture styles to the future generations. Besides, market gardens in Istanbul contribute to the genetic diversity since they include local tastes. With including those local tastes, they also have a big portion on contributing to the Istanbul folklore and cultural and historical heritage. Those market gardens are also serve as research areas for social and cultural studies. Besides, provide benefits to urban biodiversity and ecosystem services. On the other hand, world starts to give emphasize to the urban agriculture with boutique, local productions. We should appreciate those heritage lands that survived up to present. Those market gardens are also valuable with the feature of being only existing example of traditional agriculture. This study examines current approaches for urban agriculture via comparatively both in Istanbul, London and Bologna. Also well-organized proposals will be clarified in the presentation by considering protect-usage balance for unique Istanbul heritage.

Keywords: Urban Cultural Heritage, Market Gardens, Contemporary Cities.

Identifying and Quantifying Buffering Capacities and Tipping Points for Critical Natural Processes within Windows of Environmental Decision Making

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Since the beginning of industrial revolution human economic activities started to have a growing negative impact on the environment. The second half of the 20th century and the beginning of the 21st century are revealing that humans are becoming the major driver of environmental degradation at all scales: from local to global. During this ongoing century humanity may face existential challenges at local or regional scale in different parts of the world. Mediterranean region might be one of the areas at high risk from the desertification due to climatic changes. Along with this phenomenon, the environmental degradation from the toxic compounds released by different economic activities would make the environment less healthy for all forms of life. These problems make indispensable the coordination of environmental decision making at all levels based on scientific evidence. The concepts we are introducing here aim at establishing a holistic methodology that would focus the research attempts at multidisciplinary approaches which may be the only solution to complex problems created by humans when they interact with the environment. The fundamental basis of this approach is to identify the most critical natural processes which create natural resources for human society and other forms of life. Identification and quantification of Nature`s buffering capacities and their corresponding tipping points would reveal at what extent nature is capable to counterbalance the negative effects caused by humans. At the same time the identification and quantification of environmental degradation at different environmental windows would make possible to compare scientifically both sides of nature-economy interface. As a result of these research attempts, sufficient and sound data and recommendations would be at disposal of decision makers ranging from production units, water catchment areas, and nation or regional level.

Keywords: Nature-Economy Interface, Windows of Environmental Decision Making.

Recurrent Neural Networks for Linear B-Epitope Prediction

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B- and T- Cytotoxic T lymphocyte (CTL) epitopes are potential candidates for subunit vaccine design for various diseases which are caused by viral or bacterial antigens. Most of the existing T cell epitope prediction methods are indirect methods that predict MHC class I binders instead of identifying CTL epitopes directly. In this research work, a using recurrent neural networks, a systematic attempt has been made to develop a direct method for predicting b-epitopes from an antigenic sequence. 262.583 B epitopes are retrieved from iedb database . 99.9% of these epitopes have lengths 6-25 amino acids. For each window size, 11 experts as recurrent neural networks are trained. To train these experts alongside epitopes, non epitopes re needed. Non epitopes are created as random sequences of amino acids of the same length after a filtering process. To distinguish epitopes and non epitopes, the votes of eleven experts are aggregated by majority vote. An overall accuracy of 97.23% is achieved. Then these experts are used to predict the linear b-epitopes of antigens, among them Meningitis, Plasmodium falciparum (malaria), Plasmodium vivax (Malaria), ESAT6 (Tuberculosis). Results obtained compare with the predictions by famous online tools, and it is seen that the success of our experts of recurrent neural networks over scores other online tools.

Economic Impact of Bluetongue Disease in Sheep in Albania - Kosovo Border

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Economics of animal health recently is becoming a new important research area, which is growing rapidly in last two decades. This study calculate general economic impact of bluetongue disease on Albania –Kosovo Border during 2014. The study involve broad economic analyzes of animal direct physically lost, drop milk production and other immediate expenses. The aim of this study was to assess the economic impact of bluetongue disease by converting them in monetary value according above mention aspects. Material and method: The methodology of this study is based on analyzing of data collected from dedicated questioners for this aim. The data were analyzed with ToolPak Excel software. Results: The economic analyses is based on calculation of prevalence, mortality, reducing milk production, expenses for medical treatment and impact on reproduction. The prevalence of bluetongue disease was approximately 18% and mortality rate 5%. The milk production yield dropped 56%. Total direct and indirect lost were calculated around 18434.5 Euro.

Keywords: Bluetongue Disease Outbreak, Milk Production, Economics Of Animal Health And Production.

Agreement between Florescence Polarization Assay, Complement Fixation and Enzyme-Linked Immunosorbent Assay Tests for Diagnosing of Bovine Brucellosis

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Bovine brucellosis is an important infectious disease, which affect animals and humans. Active and passive surveillance plays an important role in its control. Several serological tests are useful for screening and confirming of diagnosis. Confirmatory tests such as complement fixation test (CFT) and competitive enzyme-linked immunosorbent assay (cELISA) test required good laboratory infrastructure, training personnel and relatively time consuming. Recently, we transferee and validate a new method named florescence polarization assay (FPA) as an alternative, reliable, screening and confirmatory method for diagnosing of bovine brucellosis. The aim of this study was to assess the agreement between FPA and CFT or ELISA results for diagnosing of bovine brucellosis. In this study we used 73 sera blood samples tested either by ELISA or CFT. The data were analyzed and kappa value was calculated. The results of florescence polarization test were expressed in ΔmP and the cut-off value was set 10 ΔmP. There was a very strong agreement between FPA and CFT and FPA and ELISA test results. These was assessed based on Cohen's kappa value calculation. The titer of positive samples ranged from 19.1 to 201.9 ΔmP.

Keywords: Florescence Polarization Assay, Cut-Off, Kappa Coefficient, Confirmation Test.

Blood Profile in Bitches with Pyometra – Cystic Endometrial Hyperplasia (CEH): Preliminary Data

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Canine pyometra is an inflammatory disease of the uterus typically occurring in adult. It affects intact bitches during or immediately after the luteal phase of the estrous cycle. Bitches with pyometra and cystic endometrial hyperplasia (CEH) are included in our study. They are presented at "Pets & partners" Veterinary hospital during 2015-2016 period. In the present study blood biochemical and hematological data were measured in 16 bitches with this complex pathology of uterus. Blood samples from these bitches with uterine diseases showed hematological and biochemical changes. These included higher total WBC counts and granulocytes. Usually, a moderate to heavy leukocytosis accompanies pyometra-CEH complex. The serum ALP, AST, and ALT levels were slightly higher in these bitches affected with this uterine disorder. Four animals (25%) have changed leukograma relating to theses reproductive tract diseases. Mean age of affected animals is 8.6-9.9 years, whereas in our study it is 6.8 years old age. It is important mean interval from last heat to first clinical signs; on the average it is 7.1 weeks, but in our study it was 4 weeks from last heat. Anorexia, vomiting, vaginal discharge, polyuria, polydipsia, and gastrointestinal signs were the most common clinical signs noted in the study. A combination of more of three of these clinical signs was significantly associated with pyometra. Final diagnosis (pyometra or CEH) will be determined by histopathology.

Matroid

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Matroid was presented for the first time by Whitney in 1935 to represent the merger of some mathematical structures, using abstract notions of independence. Matroid is defined as a structure M =(G,I) that consists of a finite set of G and a collection of independent subsets of G that satisfies the axioms:

- $\mathcal{I}$ is not empty, ($\emptyset \in I$)
- Each subset in an independent community is independent (If $X \in I$ and $Y \subseteq X$ then $Y \in I$)
- If X and Y are independent and $|X|=|Y|+1$ then there is an element $x \in X-Y$ is such that the $Y \cup x$ is a independent set.

Matroid provides a connection between graph theory, linear algebra, theory of numbers and combinational optimization. In this article we shall treat matroid interpretations in different lines of mathematics, showing that matroids can be defined even in an algebraic group showing a link between a combinatorial structure and an algebraic structure.

Keywords: Matroid, İndependence of Matroids, Matroid Groupal, Graphic Matroid.

Application of Mathematics in Genetics

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This article gives a brief overview of the features of how linear algebra, combinatorics and statistics can be applied to genetics. More specifically, we will focus entirely on the phenomena of autosomal inheritance. Our goal is to show how mathematics can be used to predict the genotype distribution of a particular trait in a population after any number of generations from only the genotype distribution of the initial population. In order to perform such an analysis, we will use several critical concepts from linear algebra.The importance of mathematics and statistics in genetics is well known. Perhaps less well known is the importance of these subjects in evolution. The main problem that Darwin saw in his theory of evolution by natural selection was solved by some simple mathematics. It is also not a coincidence that the re-writing of the Darwinian theory in Mendelian terms was carried largely by mathematical methods. In this article we discuss these historical matters and then consider more recent work showing how mathematical and statistical methods have been central to current genetical and evolutionary research.

Keywords: Linear Algebra, Combinatorics, Statistics, Genotype Distributions.

Designing and Construction of Ecolodge Facilities in Protected Areas of Montenegro

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Existence of receptive factors, such as facilities for accommodation, nutrition, entertainment and recreation, represent one of the basic prerequisites for the development of any ecotourism destination. Ecotourists seek accommodation which is ecologically acceptable, modest but cozy at the same time and provides unique experience in natural surroundings. In accordance with these demands protected areas all around the world offer its visitors high quality Ecolodge facilities, which are fully submerged into nature. During their construction and management strict criteria of protection of the environment are followed with optimal waste and energy management,. Montenegro has enviable spacious potential for this kind of accommodation in protected areas, especially in its five national parks, so this form of accommodation has to find its place in the future development of tourism. Designing and construction of ecotourism facilities has to be strategically planned and the fact, that it is not enough just to have attractive location but also specific content it has to offer, has to be respected. Ecolodge facilities should be designed and built in accordance with traditional architecture and surrounding materials, to influence as little as possible on the environment and to use alternative energy sources. In other words, it is necessary to provide sustainability of these facilities.

Keywords: Ecotourism, Protected Areas, Ecolodge, Montenegro.

Implementation of Cellular Automata Labeling of Connected Components in 3D Binary Lattices

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Implementation of a cellular automata based algorithm for labeling of connected components in 3D binary latices is presented. The general description of the algorithm, for n-dimensional binary lattices is presented in [1]. Here, the implementation of the algorithm with its extensively evaluation on various test cases for different size of grids and percolation probabilities is given. The experiments are made in NetLogo programming environment. We calculated the average time steps for different grid size. Also, different types of connectivities, 6-connectivity and 26-connectivity, are presented.

The role and Cooperation of Think-Tanks in the Mediterranean

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Independent research and policy institutions, in the first place think tanks, have crucial role in spreading the ideas of economic freedom and development and pressuring governments to implement them in the practice. They also significantly contribute to the stock of knowledge and scientific results. In this process joint and cooperative initiatives are very important as they present very efficient facility for the exchange of knowledge and ideas. These initiatives have become more evident during the last several years in the Mediterranean region. This work aims to analyze the role of those organization as well as types and subjects of cooperation among them with the special focus on the cooperation with the natural scientific institutions.

Fractal Analysis of Biomedical Images

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Fractal as a scientific term was introduced to the mathematical world thanks to Mendelbrot Benou in his work: "How long is the coast of Britain? Statistical Self-Similarity and Fractional Dimension" back in 1967 in the journal Science Magazine. Fractals can be used to describe many natural phenomena and shapes, such as tree trunks, river raining, blood vessel trunks, disarming routes, neural network. The main characteristic of a fractal is self-similarity, which actually represents an infinite repeat of a structure on a different scale of measurement. Best known examples of fractals built according to strictly defined rules are Koch curve, Sierpinski carpet, and Cantor set. There is a large number of examples in nature, which are not constructed by mathematical definitions, but do have a feature of self-similarity (foliage). One of the most common fractal structures that can be artificially generated is Brownian tree. In addition to the characteristics of self-similarity, fractals are characterized by their lack of integrity and lack of a precisely defined length or unit of measure. Fractal analysis is applied in many scientific areas, given that fractal structures are found everywhere in nature. In addition to meteorology, geography and other areas, fractal analysis is expected to play an important role in medicine. Current research conducted to accelerate and automate analysis of biomedical images offers promising results in pathology and automated diagnostics. Fractal Dimension, as the primary result of fractal analysis represents the index (measure) of curvature, the complexity of the line in the image. For example, it has been shown that, in the case of analyzing human eye retina images, it is possible to identify images of healthy and pathological cases by evaluating fractal dimensions of the shapes of blood vessels. By further analysis, using multifractal analysis and determination of lacunarity, the classification of pathological images by disease can also be performed. Fractal analysis has given promising results in early detection of cancer, diabetes, and heart disease. This paper will illustrate an application of fractal analysis to digital images of human retina. Images used for the analysis are obtained from the publicly available data sets. The analysis entails pre-processing of the images of retina in oder to extract the blood vessels structure and then estimation of the fractal dimensions in order to quantify the characteristics of the vessels. Illustration of the results and discussion will be provided at the end.

Towards an IOT Solution for Anti-Counterfeiting Protection in Wine Industry

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Counterfeiting of wine is a massive issue for wine producers. Estimating counterfeit wine market is challenging topic and various studies gave different estimates or the total wine market and percentages of wines that are counterfeit. Some estimates fall in range 0.2-1%, while some went up to 4 and 5% for specific scenarios. This problem affects producer's reputation and it can also have an impact on the health of consumers. Not dealing with this issue may have a bad influence on tradition and economy of a whole region. In this paper, an Internet of Things (IoT) solution for anti-counterfeiting protection in wine industry is considered. The main idea is to utilize smart tags on each bottle of wine together with the IoT platform and two-way communication with end-user using mobile devices. Smart tags will be implemented using Quick Response (QR) codes, Near-field Communication (NFC) sensors, and advanced tags printed with functional inks. By combining these technologies an anti-counterfeiting solution will be implemented. Beside this, tracking of bottles through the supply chain is possible since each bottle can be uniquely identified. With great potential to dramatically improve transport, storage, and distribution control, the proposed solution may push further improvement of the quality of wine based on user reviews and desires. With mentioned features, wine producers will benefit not only from counterfeiting prevention and brand protection but also from market research abilities of the platform. The paper describes the proposed architecture for the solution, the selection of technology, and a description of test pilot that will be implemented and executed in cooperation with an actual wine producing company. The purpose of the pilot implementation is to evaluate the technology capabilities as well as to assess the business aspects and potential of such solutions for brand protection and wine anti-counterfeiting and similar industries. Finally, the paper outlines future work on the improvements and feature expansion.

Fermat's Last Theorem and Rise of Algebraic Number Theory

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This paper discusses the incredible mathematical journey of more than 350 years that started with Fermat's 'conjecture' in 1637 that became known as Fermat's Last Theorem, up until its proof by Andrew Wiles in 1994. Fermat's Last Theorem states that there are no non-zero integer solutions to the equation $a^n + b^n = c^n$ for exponents greater than two. Besides giving historic perspective of developments and essential mathematical contributions that have led to the final proof, this paper discusses how Fermat's Last Theorem influenced developments in algebraic number theory, the concept of non-unique factorization into primes in various domains, Kummer's invention of "ideal numbers" and Dedekind's theory of ideals.

The Climatology of the Aerosol Load over Shkodra Lake; Assessment of the Main Sources and Inter-Annual Trends Based on Remote Sensing Technologies and Model Outputs

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It's a well-known fact that aerosols have a direct and indirect impact on the radiative budget. Moreover, aerosol particles play a key role on air quality levels, especially in urban and industrial centers. The most important natural aerosol comes from the deserts. Mineral dust intrusions are very frequent over the South European domain and in particular over the Mediterranean region. Furthermore, Balkan Peninsula (BP) is frequently affected by desert dust events. Here, principal aerosol optical/microphysical properties like aerosol optical depth (AOD500), Absorption Aerosol Optical Depth (AAOD500), Angstrom exponent (AE), are taken into the analysis. Analyses are based on the observation databases on the Aerosol Robotic Network (AERONET) and European Aerosol Lidar Network (EARLINET), models like BSC-DREAM8b and trajectory model (NOAA-HYSPLIT), and satellite imagery of MODIS-NASA. Analyses consist of an assessment of the climatology of AOD, identification of the main sources of aerosol which affect BP and the distribution of aerosol load over this region. Overall estimations give worthy information about the patterns and variations of aerosol load over this region.

Optimal Control in Growth Theory

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The focus is on a comprehensive analysis of different methods and mathematical techniques used for solving optimal control problems (OCP) in growth theory. Most important methods for solving dynamic non-linear infinite-horizon growth models using optimal control theory are presented and a critical view of the limitations of different methods is given. The main problem is to determine the optimal rate of growth over time in a way that maximizes the welfare function over an infinite horizon. The welfare function depends on capital-labor ratio, the state variable, and the per-capita consumption, the control variable. Numerical methods for solving OCP are divided into two classes: direct and indirect approach. How the indirect approach can be used is given in the example of the neo-classical growth model. In order to present the indirect and the direct approach simultaneously, two endogenous growth models, one written by Romer and another by Lucas and Uzawa, are studied. Advantages and efficiency of these different approaches will be discussed.

Experts on The Complex Desıgn of Curved Glass Envelope

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Despite the increasing research on architectural structures of curvilinear forms and technological and practical improvement of the glass production in the past years, there is still a lack of comprehensive codes and standards, recommendations and experience data linked to real-life curved glass structures applications regarding design, manufacture, use, performance and economy. However, more and more complex buildings and structures with large areas of glass envelope geometrically complex shape are built every year. The aim of the presented research is to collect data on the existing design philosophy on curved glass envelope cases. Moreover, the purpose of collected data will be to define and map the complex process of design and construction of geometrically complex form of building envelopes. How the geometry represents theoretical assumption and defines the process of design and manufacture regarding the forms and curvature, maximum and minimum dimensions, physical and mechanical properties, the typology of the glass panels has been proposed according to their geometry curvature type and generating mode of the surface. The investigation includes a survey about how architects and engineers deal with different design aspects of curved glass envelopes with a special focus on design and construction process, glass types and structural and fixing systems. It was made a proper balance between the number and kind of questions on one hand and the relevance and usefulness of the response on the other. This resulted in an eight question survey. The survey was distributed among architects, engineers and researchers known to have experience with the use of structural glass and glass facades, more specifically the members of several professional institutions, companies and glass manufacturers. The paper gives a brief overview about the findings of the survey.

Keywords: Curved Glass, Free form Architecture, Experts, Survey.

Nano Coating for Historical Stone Monuments

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Preparation techniques of water repellent fabrics have several methods such as coating with paraffin wax, treating fiber surface with pyridinium compounds, silicone resin or fluorocarbon. The fluorochemicals are at present the most favorable due to their excellence with respect to water repellency. Typically, the water contact angles between 120° and 130° are obtainable with treatment using the fluorochemicals. Surface hydrophobicity modification using sol-gel method has been introduced as an alternative approach. In this present work, it is aimed to protect some historical stone monuments with nano coating. Nano glass SiO2 solutions produced by silicon-based nano- powder are covered on the stone surface by using spray method. Stone surfaces were coated at the room temperature in air with the different spray nozzles. Surface analysis of the coated stone was performed by using Contact Angle and SEM pictures. According to the Contact Angles measurements, the coated stone surfaces showed hydrophobic character between 123 and 145 degrees, and the SiO2 particles sticked into the stone surfaces as seen from SEM picture.

Keywords: SiO2 Nano Glass, Nano Coating, Nanotechnology, Advanced Materials, Historical Stone Monuments And Stone Parts.

Investigation of Spatial Variation of Air Pollution in Dilovasi-Turkey

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Air quality is very low in areas where industrial use and poor quality fuel use is high. Contaminants are transported from these regions by transportations. The flow of daily life is negatively affected both in the area where the source is located and in the surrounding regions. In this study, the effect of air pollution that is emitted from Dilovası region how impact on Düzce, Bolu and Karabük provinces is investigated by using HYSPLIT model. PM10, NO2, and CO values, which constitute problems for human health when exceeding the limit values, is evaluated for the period of 6 January 2017-12 February 2017. The data used belong to Marmara Clean Air Center Dilovasi station (Kocaeli- Dilovası-İMES OBS1- MTHM).

Keywords: Dilovası, Düzce, Bolu, Karabük, HYSPLIT, PM10, SO2, CO.

Evaluation of Air Pollution in Karabuk City, Turkey

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Air quality is at the top of the most important problems affecting human health in regions where industrialization and poor quality fuel use are high. In this study, air pollution analyzes for the Karabük province, which is the center of the iron and steel industry in particular, were examined from actual observations and model results. In particular, the pollutant values of SO2, PM10 and NO2, which are very important effects on the border values in terms of human health, have been evaluated for the period of 6 January 2017-12 February 2017 within the scope of the study. It has been determined how they have a harmony by comparing the model results with the National Air Quality Monitoring Station data. Synoptic evaluations were also examined within the selected period.

Keywords: WRF, NO2, PM10, Karabük.

Flow Structure in the Annular Region of Perforated Shroud*

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Perforated shrouds have been used as a passive flow control technique in order to control of vortex shedding downstream of cylinder. However, annular region where is between cylinder to perforated shroud has not been studied extensively so far. In this study, it was aim to investigate flow structure annular region of perforated shroud. Experimental study was carried out in water channel using particle image velocimetry technique at Reynolds number Re=5000 which is based on the cylinder diameter, D. Perforated shrouds have a cylindrical shape with diameter Ds=100 mm. Diameter ratio which was defined as the cylinder diameter to the perforated shroud, D/Ds was kept constant as D/Ds=0.5 during the experiments. The main parameter was determined as porosity of shroud and experiments were conducted for five different porosity (β=0.3, 0.4, 0.5, 0.6 and 0.7) in order to investigate the effect of porosity on the flow structure the annular region. The results indicate that the recirculation zone of the cylinder and corresponding location of the generated foci and saddle points are significantly affected by perforated shrouds compared to the bare cylinder. The recirculation zone of the cylinder is restricted by the perforated shroud. The vortex formation length of the cylinder is short compared to the bare cylinder case due to the fact that the shear layers on the both side of the cylinder are restricted in the annular region by internal surface of the perforated cylinder at the

porosity value of $\beta \leq 0.6$. On the other hand, the magnitude of vorticity increases with the increasing the porosity. It should also be point out that even for the porosity value of $\beta=0.7$, it is observed that the elongated vorticity pair appears in the near-wake region.

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Klaster Za Predikciju Zavisnosti

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Osnovni cilj dva velika epidemiološka istraživanja je bio da ispitamo koje zavisnosti od psihoaktivnih supstanci i bihevioralne zavisnosti čine klaster koji najbolje korelira sa ostalim zavisnostima od psihoaktivnih supstanci i bihevioralnim zavisnostima i da takve korelacije pokušamo da objasnimo sa teorijskog i kliničkog stanovišta. Istraživanje je izvršeno na stratifikovanim, kvotnim i slučajnim uzorcima od 3003 ispitanika u Srbiji i 1469 ispitanuika u Crnoj Gori. Primenjen je isti instrumentarijum od 11 upitnika za 11 bihevioralnih zavisnosti, a sa odpštim sociodemografskim podacima instrumentarijum je sadržao 242 pitanja, sa odgovorima pretežno u binarnoj formi. Na oba uzorka primenjena su potpuno identična pitanja. Procenti ispitanika koji imaju dve i više zloupotreba i/ili zavisnosti od psihoaktivnih supstanci u oba uzorka je veoma visok; u crnogorskom 84,9%, a u uzorku iz Srbije čak 94,1%, značajno veći u Srbiji, dok u pogledu zavisnosti od supstanci nisu nađene statistički značajne razlike.Takođe,značajno izraženije zloupotrebe aktivnosti takođe su nađene u uzorku iz Srbije; u uzorku iz Srbije bilo je samo 3,7% ispitanika bez ijedne zloupotrebe aktivnosti, au uzorku iz Crne Gore 11,6%. Bez ijedne bihevioralne zavisnosti u uzorku iz Srbije bilo je 29,3% ispitanika, a 34,4% u uzorku iz Srbije. Ponovo među uzorcima nisu nađene statistički značajne razlike. U našem istraživanju klaster čine zavisnost od alkohola, seksa, kocke i Interneta (Internet seksa). Ove zavisnosti najbolje koreliraju međusobno, a zatim sa ukupnim skorom za grupu zavisnosti iz koje je jedna od ove tri, sa ukupnim skorom za drugu grupu, kao i sa pojedinačnim zavisnostima iz obe grupe, sa malim izuzecima. Zavisnost od kocke najbolje korelira sa hemijskim zavisnostima posebno sa alkoholom i duvanom Budući da zavisnost od kocke prema nalazima pojedinih istraživača značajno pozitivno korelira sa Internet seksom i seksom uopšte onda nije slučajno da i zavisnosti od psihoaktivnih supstanci relativno visoko pozitivno koreliraju sa ovim bihevioralnim zavisnostima. Sa malim odstupanjima, svi navedeni rezultati upućuju na jedinstven zaključak da u oba uzorka alohol, seks, kocka i Internet – seks predstavljaju kompozit koji se izdvaja od svih ostalih zavisnosti od psihoaktivnih supstanci i bihevioralnih zavisnosti. Ovom klasteru je zajedničko da su relativno manje raširene od gotovo svih drugih

zavisnosti, jer je svima zajedničko da imaju veliku potenciju stvaranja zavisnosti i jaku zajedničku biološku osnovu.

Ključne reči: Multiple Zavisnosti, Klaster, Alkohol, Seks, Kocka, Internet Seks.

On the Road to Dual Education –An Example of A New Bachelor Study Program (Designed in Line with the Current State of the Relevant Industry Branch in The Local And Regional Area)

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A parodox unfolds: on the one side, wood processing companies operating in Bosnia and Herzegovina can not find workers, what has a negative impact on their development, production and export and, on the other, already high rate of the unemployed increases on a daily basis. Therefore, a question emerses on establishing a new bachelor study program on design and technologies in wood processing. The Faculty of mechanical engineering of the University of Zenica (UNZE) engaged itself on this issue and, if relevant analyses support, it would be interested in having a such study established. Prior to establishing, a great deal of data on industry branch has to be processed and, also, a design of this new study has to be considered in a broad way. These data will be summed up and presented in the following paper. Since the Faculty is placed and operates in Zenica-Doboj Canton, the economic indicators and wood processing enterprises from the Canton were mainly taken into account. In the end, based on all abovementioned, the structure of a new bachelor program on wood processing is proposed.

Morfološke karakteristike masline (Olea europea L.) udomaćene sorte "Masnjače" na području mjesta Briševo u Zadarskoj županiji (Hrvatsk)

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Maslina je jedna od najstarijih uzgajanih kultura što potkrepljuju različiti dokazi o njenom uzgoju još za vrijeme stare Grčke. Areal uzgoja joj je Mediteran koji pruža povoljne agroekološke uvjete za njen uzgoj. Cilj rada je bio opisati morfološke karakteristike autohtone sorte 'Masnjača' prema međunarodnom pravilniku za morfološku karakterizaciju masline(IOC), a svrha rada okarakterizirati sortu te dobivenim podacima obogatit literaturu. Jednogodišnje istraživanje je obuhvatilo 100 uzoraka s pet stabala masline sorte 'Masnjača' na području mjesta Briševo u Zadarskoj županija (Hrvatska). U istraživanju opisane su morfološke karakteristike plodova, koštica, listova i cvatova po metodologiji za primarnu karakterizaciju sorata masline prema IOC-u. Masa plodova kretala se od 2,44 ± 0,23 do 3,07 ±0,34 grama, a odnos duljine i širine ploda je bio između 1,19 ± 0,05 i 1,26 ± 0,06, što ukazuje da se radi o okruglim plodovima. Masa koštice je varirala između 0,82 ± 0,10 i 0,96 ± 0,13 grama, a odnos duljine i širine koštice je bio između 1,58 ± 0,12 i 1,69 ± 0,13 što nam ukazuje da se radi o jajolikim košticama. Listovi su prosječnih dužina između 53,40 ± 5,31 i 60,70 ± 7,16 mm, te prosječnih širina između 10,95 ± 1,16 i 11,61 ± 1,33 mm, dok im je odnos dužine i širine između 4,87 ±0,77 i 5,29 ± 0,80 na temelju čega zaključujemo da su listovi eliptično kopljasti. Prosječne dužine cvatova su u rasponu od 25,25 ± 5,55 do 29,34 ±7,25 mm s prosječnim brojem

cvjetova između 11,34 ± 3,31 i 13,09 ± 4,10. Postotak funkcionalno muških cvjetova je između 11% i 19% dok je postotak hermafroditnih cvjetova između 81% i 89%. Naši jednogodišnji rezultati ukazuju na niže vrijednosti mase ploda i dužine lista te je potrebno i dalje nastavit s morfološkom identifikacijom ove sorte masline.

Ključne riječi: Autohtona Sorta,Briševo, Maslina, IOC Metoda, Morfologija Ploda,Koštice, Lista, Cvata.

Morphological characteristics of olive (Olea europaea L.) of native variety "Masnjača" in the area of Briševo in the Zadar county (Croatia)

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Olive is one of the oldest cultivated cultures, which is supported by various evidence of its breeding in ancient Greece. It is cultivated in the Mediterranean area, which offers favourable agro-ecological conditions for its cultivation. The aim of this research paper was to describe morphological characteristics of the autochthonous variety Masnjača according to the International Olive Council (IOS) methodology and use the obtained results to enrich the existing literature. The one-year research covered 100 samples of Masnjača variety from five olive trees located in the area of Briševo in the county of Zadar (Croatia). The research describes morphological characteristics of fruits, pits, leaves and inflorescence according to the IOC methodology for primary characterization of olive varieties. The weight of the fruit ranged between 2,44 ± 0,23 and 3,07 ± 0,34 grams, and the ratio of fruit length and width was between 1,19 ± 0,05 and 1,26 ± 0,06, indicating a spherical shape of fruits. The pit mass ranged between 0,82 ± 0,10 and 0,96 ± 0,13 grams, and the length and width of the pit was between 1,58 ± 0,12 and 1,69 ± 0,13, which indicates an ovoid. The leaves were of an average length, measuring between 53,40 ± 5,31 and 60,70 ± 7,16 mm, and of an average width, measuring between 10,95 ± 1,16 and 11,61 ± 1,33 mm; while the ratio of lengths and widths was between 4,87 ± 0,77 and 5,29 ± 0,80. Based on this data, we can conclude that the leaves are an elliptical

anceolata. The average inflorescence lengths ranged between 25,25 ± 5,55 and 29,34 ± 7,25 mm, with an average number of flowers ranging between 11,34 ±3,31 and 13,09 ± 4,10. The percentage of functional male flowers was between 11% and 19%, while the percentage of hermaphrodite flowers was between 81% and 89%. The results obtained over the one-year reference period showed lower values for the fruit mass and leaf length, suggesting that a further work on morphological identification of this olive variety is warranted.

Keywords: Autochthonous Varieties, Briševo, Olive, IOC Method, Morphology Of Fruit, Pit, Leaf, Inflorescence.

Mogućnosti poboljšanja kvaliteta miješanog ražanog hljeba dodatkom kiselog tijesta

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Sa nutricionističkog stanovišta raženi miješani hljeb ima bolje karakteristike od pšeničnog hljeba, ali u našoj zemlji proizvodnja ovog hljeba svedena je na minimum. Bolji kvalitet raženog miješanog hljeba se dobije ukoliko se pri proizvodnji dodaje kiselo tijesto. U ovom radu se dokazuje da se kvalitetan raženi miješani hljeb dobija uz primjenu kiselog tijesta i da se može bez većih problema proizvoditi u našim industrijskim pekarama. To je posebno značajno s obzirom da bi moglo doprinijeti da se ova vrsta hljeba nalazi češće na trpezi naših potrošača i značajno doprinese obogaćivanju njihove svakodnevne ishrane važnim nutritijentima.

Ključne riječi: Hljeb, Raž, Kiselo Tijesto, Kvalitet.

Possibilities of improving the quality of mixed rye breadby adding an acidic dough

From a nutritional point of view, roasted mixed bread has better characteristics than wheat bread, but in our country the production of this bread is reduced to a minimum. Better quality of grated mixed bread is obtained if sour dough is added during production. In this paper, it is proven that quality rye mixed bread is obtained with the application of acid dough and that it can be produced in our industrial bakeries without major problems. This is especially important given that it could contribute to this type of bread more often on the table of our consumers and significantly contribute to enriching their daily diet with important nutrients.

Keywords: Bread, Rye, Sour Dough, Quality.

Poyrazlar Gölü İhtiyofaunası (Sakarya, Türkiye)

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Bu araştırma Ağustos 2016-Ağustos 2017 tarihleri arasında Poyrazlar Gölünde yaşayan balık türlerini belirlemek amacıyla yürütülmüştür. Araştırma alanından toplam 116 balık numunesi farklı göz açıklığına sahip balık ağları, balık kepçeleri ve olta kullanılarak yakalanmıştır. Bu çalışmada 5 familyaya ait (Cyprinidae, Esocidae, Gobiidae, Percidae, Poecilidae) 9 tür (*Blicca bjoerkna, Carassius carassius, Rutilus rutilus, Scardinius erythtrophtalmus, Tinca tinca, Esox lucius, Proterorhinus marmoratus, Perca fluviatilis, Gambusia holbrooki*) teşhis edilmiştir. *Carassius carassius, Gambusia holbrooki* Dünyada, Türkiye'de ve Sakarya'da içsularda hızla çoğalan ve yayılan işgalci balıklardır.

Anahtar Kelimeler: Sakarya, Poyrazlar Gölü, Fauna, İşgalci Balık.

Ichthyofauna of Lake Poyrazlar (Sakarya, Turkey)

This research was conducted to find out the fish species inhabiting in Lake Poyrazlar between August 2016 and August 2017. Totally 116 fish specimens were caught from the research area using by fishing nets with different scales, dip nets and fishing lines. In this study, 9 species (*Blicca bjoerkna, Carassius carassius, Rutilus rutilus, Scardinius erythtrophtalmus, Tinca tinca, Esox lucius, Proterorhinus marmoratus, Perca fluviatilis, Gambusia holbrooki*) belonging to 5 families (Cyprinidae, Esocidae, Gobiidae, Percidae, Poecilidae) have been identified. *Carassius carassius, Gambusia holbrooki* is rapidly rising and spreading as invasive fish in freshwater of World, Turkey, also Sakarya.

Keywords: Sakarya, Lake Poyrazlar, Fauna, Invasive Fish.

Türkiye'nin Endemik Su Keneleri (Acari; Hydrachnidia) ve Ekolojileri Üzerine Genel Bir Değerlendirme

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Su keneleri çok çeşitli sucul ekosistemlerde yaşayabilen canlılardır. Akarsu, göl, gölet, geçici ve kalıcı birikintiler, bataklık, yeraltı suları, sıcak su kaynakları ve tuzlu su ortamında bulunabilirler. Dünya'da 8 üstfamilya, 57 familya, 400'den fazla cins ve 6000'den fazla türle temsil edilmektedirler. Türkiye'de ise 7 üstfamilya, 25 familya, 58 cins ve 320 tür kaydedilmiştir. Bu türlerden 52 tanesi endemiktir. Türkiye'de şimdiye kadar kaydedilen türlerdeki endemizim oranı %16.25'tir. Endemik türlerin familyalara dağılımı; Acherontacaridae 1, Hydryphantidae 13, Sperchontidae 5, Anisitsiellidae 5, Lebertiidae 5, Pontarachnidae 1, Hygrobatidae 8, Feltriidae 1, Aturidae 3 ve Arrenuridae 10 şeklindedir. Endemik türlerin 38'i sadece tip locatilitesinden, 14'ü ise birden fazla localiteden kaydedilmiştir. Ayrıca bu türlerin 12'i durgun sulardan, 40'ı kaynak ve akarsulardan toplanmıştır.

Anahtar Kelimeler: Türkiye, Su Kenesi, Yayılış, Endemik.

The Endemic Water Mite (Acari, Hydrachnidia) Species of Turkey and A General Assessment on Their Ecology

The water mites can inhabit in various aquatic ecosystems. They can be found in stream, lake, pool, temporary and permanent ponds, ground water, hot water source and saltwater. In the world, they are represented with 8 superfamily, 57 family, more than 400 genera and more than 6000 species. In Turkey, 7 superfamily, 25 family, 58 genera and 320 species were recorded. 52 of the total species are endemic. So far, the endemisizm range of the recorded species in Turkey is 16.25%. Distiribution to the family of the endemic species are following; Acherontacaridae 1, Hydryphantidae 13, Sperchontidae 5, Anisitsiellidae 5, Lebertiidae 5, Pontarachnidae 1, Hygrobatidae 8, Feltriidae 1, Aturidae 3 and Arrenuridae 10. 38 of endemic species are recorded only from type locality and 14 are recorded from more than one locality. Further, 12 species are collected from standing waters and 40 species are collected from spring and stereams.

Keywords: Turkey, Water Mite, Distribution, Endemic.

Havalı Güneş Kolektörlerinde Farklı Bağlantı Şekillerinin Isıl Performansa Etkisinin Deneysel Analizi

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Güneş enerjili mahal ısıtma ve kurutma sistemlerinde temel eleman havalı güneş kolektörleridir. Bu çalışmada, 4 adet havalı güneş kolektörünün farklı şekillerde (2 seri 1 paralel, 2 paralel 1 seri, 4 paralel ve 4 seri) bağlantısı yapılarak oluşturulan kollektör gruplarının ısıl performansı deneysel olarak araştırılmıştır. Deneysel sistem üzerinde hava sıcaklığı, hava hızı ve güneş ışınım miktarı ölçülerek kolektör gruplarının ısıl verimi hesaplanmıştır. Yapılan ölçümler sonucunda, kolektör ısıl performansının güneş ışınımı, hava debisi ve bağlantı şeklin bağlı olduğu görülmüştür. Güneş ışınımının ve hava debisinin yüksek olduğu durumlarda kollektör ısıl veriminin yüksek olduğu belirlenmiştir. Bağlantı şekillerine göre, en yüksek günlük ortalama kolektör verimi 2 seri 1 paralel bağlantı şeklinde 7.5 m/s hava akış hızında % 82 olarak gerçekleşmiştir. Paralel bağlantılarda kolektör çıkış sıcaklığının çok fazla değişmediği sadece kullanılan kolektör alanı arttığı için sistem veriminin düştüğü görülmüştür. Belirtilen kolektörler için en ideal bağlantı şeklinin seri bağlantı olduğu, paralel bağlantı şeklinin kollektör performansına çok fazla bir katkısının olmadığı ve ideal hava akış hızının 7.5 m/s olduğu tespit edilmiştir.

Anahtar Kelimeler: Havalı Güneş Kolektörü, Isıl Verim, Güneş Işınımı, Bağlantı Şekli.

Experimental Analysis of the Effect of Connection Configurations on Thermal Performance in Solar Air Collectors

One of the basic elements in solar-powered space heating and drying systems is the solar air collector. In this study, the thermal performances of four solar air collectors which were connected in different configurations (2 series 1 parallel, 2 parallel 1 series, 4 parallel and 4 series) in order to form the collector groups were investigated experimentally . The air temperature, the air velocity and the amount of solar radiation were measured in the experimental system and the thermal efficiency of each collector and configuration was calculated. As a result of the measurements made, it is seen that the thermal performance of the collector depends on the solar radiation, air flow and connection configuration. It has been determined that the thermal efficiency of the collector is high when the solar radiation and air flow are high. According to the connection configuration, the highest daily average collector efficiency was realized as 82 % in 2 series 1 parallel configuration at 7.5 m/s air velocity. In parallel connections, the collector output temperature does not change very much, but the system efficiency decreases due to increase in collector surface area. It has been determined that the ideal connection configuration for the specified collectors is a series connection, the parallel connection does not contribute much to the collector performance, and the ideal air flow rate is 7.5 m/s.

Keywords: Solar Air Collector, Thermal Efficiency, Solar Radiation, Connection Configuration.

Okul Tipi Yapıların Çelik Yapıların Tasarım, Hesap ve Yapım Esasları 2016 Yönetmeliğine Göre Değerlendirilmesi

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Bu çalışmada; okul binası olarak tasarlanmış mevcut bir çelik yapının, 2016 yılında yürürlüğe giren çelik yapıların tasarım, hesap ve yapım kuralları yönetmeliğinin öngörmüş olduğu kriterlere göre tekrar irdelenmesine yönelik çözüm yapılmıştır. Ele alınan örnek yapı yönetmelikte belirtilmiş olan Güvenlik Katsayıları ile Tasarım (GKT) ve Yük ve Dayanım Katsayıları ile Tasarım (YDKT) kriterlerine göre ayrı ayrı analiz ve tasarımı yapılmıştır. Tasarım sonuçlarının mevcut yapıdaki durumu ile kıyaslanarak yeni yönetmeliğin çelik yapıların tasarımı konusunda getirmiş olduğu farklılıklar irdelenmiştir. Ele alınan yapının analiz ve tasarımı için sonlu elemanlar yöntemi ile geliştirilmiş SAP 2000 V18.0 programı kullanılmıştır. Yapının birleşim noktalarının tümüyle bulon tipi birleşim yapılacağı öngörülerek tasarımı gerçekleştirilmiştir. Elde edilen sonuçlar neticesinde yeni yönetmeliğin kriterlerinin uygulanması ile yapı ağırlıkların ve bina yapım maliyetlerinin farklılıkları hususunda bir değerlendirme yapılması düşünülmüştür.

Anahtar Kelimeler: GKT (Güvenlik Katsayıları ile Tasarım), YDKT (Yük ve Dayanım Katsayıları ile Tasarım), Çelik Tasarım.

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Evaluation of School Buildings According to Design, Calculation and Construction Principles of Steel Structures by 2016 Regulation*

In this study; a solution has been made to re-evaluate an existing steel structure designed as a school building according to the criteria stipulated in the regulation of design, calculation and construction rules of steel structures entered into force in 2016. The analyzed sample structure is analyzed and designed according to the criteria of Allowable Stress Design (ASD) and Load and Resistance Factoral Design (LRFD) specified in the regulation. The differences in the design of the steel structures by the new regulation are discussed in comparison with the current state of the design results. SAP 2000 V18.0 program developed by using the finite element method is used for the analysis and design of the structure. The design has been carried out by foreseeing that the junction points of the construction will be entirely bolted. As a result of the results obtained, it is considered that the application of the criteria of the new regulation and an assessment of the differences in building weights and building construction costs.

Keywords: ASD (Allowable Stress Design) , LRFD (Load and Resistance Factoral Design), Steel Structures.

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Kütahya Hava Kirliliği Verilerinin Meteorolojik Açıdan Değerlendirilmesi

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Kütahya Ege Bölgesinin İç Batı Anadolu bölümünde yer alan tarihi bir şehirdir ve denizden ortalama 969 m yükseklikte bulunmaktadır. Yüzölçümü 11.977 km² olan ilin 2016 yılı verilerine göre nüfusu 573.642'dir. Önemli bir porselen merkezidir ve termal kaynakları oldukça fazladır. İklimi İç Anadolu'nun karasal, Ege ve Marmara'nın ılıman iklimi arasındadır. Doğal bitki örtüsü Akdeniz, Karadeniz ve İç Anadolu bölgelerinin özelliklerini taşır. Bir bölgede kaynağından çıkan kirlilik miktarı günden güne önemli bir değişiklik göstermiyor fakat bölgedeki kirletici yoğunluğu zamanla çok değişiyor ise bunun önemli bir nedeni meteorolojik şartlar olabilir. Örneğin yüksek basınç alanı, düşük rüzgarlar, sıcaklık terselmesi veya sahradan toz taşınımı vs olabilir. Bu çalışmada 2010-2016 yılları arası saatlik PM10 ve SO2 hava kirliliği ile Meteoroloji Genel Müdürlüğünden alınan rüzgar hız ve yönü, sıcaklık, basınç verileri kullanılmıştır. Kütahya'da SO2 yönünden sınır değerler veya hava kalitesi indeksi yönünden herhangi bir olumsuzluk söz konusu değildir. Bununla birlikte PM10 değerlerinin bilhassa ısınma döneminde arttığı görülmüştür. 2016 yılı verilerine göre PM10 değerlerinin % 32'si iyi, % 49'u orta, % 18'si hassas ve % 1'i sağlıksız çıkmıştır. PM10 konsantrasyonunun 80 µg/m³ olan günlük sınır değerin üzerinde olduğu günler için rüzgar ve kirlilik günleri oluşturularak rüzgar hız ve yönüne bağlı olarak kirliliklerin geldiği hakim yönler belirlenerek olası kaynaklar irdelenmiştir. Ayrıca kirlilik seviyesinin yüksek olduğu günler için sıcaklık ve basınç arasındaki ilişkiler incelenmiştir. Olası kirlilik kaynağı güzergâhının belirlenmesine katkı sağlamak amacıyla kirlilik verilerinin 3 günlük

kayan ortalamaları alarak episod günleri için yörünge analizleri yapılarak veriler değerlendirilmiştir.

Anahtar Kelimeler: Kütahya, Hava Kirliliği, Meteoroloji, Yörünge Analizi.

Meteorological Evaluation of Kütahya Air Pollution Data

is a historical city located in the inner western Anatolian part of Aegean Region and it is located at an altitude of 969 m on the sea. The population is 573.642 according to the year 2016 of the province with an area of 11.977 km². It is an important center of porcelain and its thermal resources are quite high. The climate is between continental of Central Anatolia, temperate climate of Aegean and Marmara. The natural vegetation covers the features of the Mediterranean, Black Sea and Central Anatolia regions. The amount of pollution from a source in a region does not change significantly from day to day, but if the concentration of pollutants in the region changes greatly over time, this can be an important meteorological condition. For example, the high pressure area may be low winds, temperature reversal, or dust transfer, etc. In this study, wind speed and direction, temperature, pressure data taken from PM10 and SO2 air pollution and General Directorate of Meteorology for hourly 2010-2016 years were used. In Kutahya, there is not any negativity with respect to SO2 in terms of boundary values or air quality index. However, PM10 values were observed to increase during the warm-up period. According to the year 2016, 32% of the PM10 values are good, 49% are moderate, 18% are sensitive and 1% is unhealthy. For the days when the PM10 concentration is above the daily limit value of 80 µg / m³, winds and pollution days are determined and possible sources of contamination are determined according to wind speed and direction. In addition, the relationship between temperature and pressure has been examined for days when the level of pollution is high. In order to contribute to the determination of the potential pollution source route, pollution data were evaluated by taking 3-day floating averages of the data and conducting orbit analysis for episode days.

Keywords: Kutahya, Air Pollution, Meteorology, Orbital Analysis.

Erzurum İli Piona Koch, 1842 (Acari; Hydrachnidia) Türleri ve Türkiye Faunası için İki Yeni Kayıt

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Bu çalışmada Erzurum İli, Doğu Anadolu'dan toplanan *Piona* cinsine ait su keneleri değerlendirilmiştir. *Piona (Piona) ambigua* (Piersig, 1894), *P. (Dispersipiona) conglobata* (Koch, 1836), *P. lacerata* Sokolow, 1928 ve *P. (Piona) pusilla* olmak üzere toplam dört tür tespit edilmiştir. Bu türlerden *P. (Piona) ambigua* ve *P. (Piona) lacerata* Türkiye faunası için yeni kayıttır. Yeni türlerin morfolojik özellikleri, çeşitli organlarının çizimleri ve ölçümleri ve dünyadaki yayılışları verilmiştir.

Anahtar Kelimeler: Su kenesi, *Piona*, Yeni Kayıt, Erzurum.

Species of the Genus Piona Koch, 1842 (Acari, Hydrachnidia) of Erzurum Province and Two New Records for the Turkish Fauna

In this study, it has been evaluated water mites of the genus *Piona* collected from Erzurum Province, Eastern Turkey. In totally four species were idenfied; *Piona (Piona) ambigua* (Piersig, 1894), *P. (Dispersipiona) conglobata* (Koch, 1836), *P. lacerata* Sokolow, 1928 and *P. (Piona) pusilla*. Of these, *P. (Piona) ambigua* and *P. (Piona) lacerata* are new records for the Turkish fauna. The morphological characters, measurements and drawings of various organs and distributions in the world of these two species were given.

Keywords: Water Mite, *Piona*, New Record, Erzurum Province.

Eğitimde Hizmet Kalitesinin Servqual Yöntemi İle Ölçülmesi

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Teknolojinin ve küreselleşmenin hızlı bir gelişim göstermesi sonucu hizmet kalitesinin önemi artmıştır. Küreselleşmenin yaratmış olduğu rekabet koşulları ve artan tüketici beklentileri, işletmeleri kaliteli ürün ve hizmetler sunmaya zorlamaktadır. Gelişen kaliteli hizmet anlayışı ve hizmetin ölçülebilmesi, hizmet sektöründeki tüm işletmeleri etkilediği gibi eğitim kurumlarını da etkilemiştir. Bu çalışmada, daha kaliteli bir fakülte, öğretim elemanı kadrosu, daha bilgili bir öğrenci kitlesi ve daha başarılı bir üniversite eğitiminin gerçekleştirilmesine katkı sağlamak amacıyla üniversite öğrencilerinin öğretim elemanlarından beklentileri ve bu beklentilerin önem derecelerinin belirlemesi amaçlanmıştır. Bu amaçla, Sakarya Üniversitesi Fen Edebiyat Fakültesi öğrencilerinin, öğretim elemanlarına ve fakültenin fiziksel özelliklerine yönelik kalite beklentileri belirlenmeye çalışılmıştır. Analizlerde SPSS 22 programında faydalanılmıştır.

Anahtar Kelimeler: Hizmet Kalitesi, Hizmet Kalitesi Ölçümü, SERVQUAL.

Dengesiz ve Yüksüz bir Senkron Generatörde Faz-Faz Hatası için Kısa Devre Analizi

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Senkron generatörlerde hata analizinin yapılması generatörlerin ve güç sisteminin korunması açısından oldukça önemlidir. Bu çalışmada, yüksüz senkron generatörde faz-faz kısa devre hatası analizi sunulmuştur. Benzer çalışmalardan farklı olarak bu çalışmada senkron generatörün dengesiz çalışma koşullarında olduğu kabul edilmiştir. Bu amaçla, senkron generatör için yeni simetrili bileşen devreleri elde edilmiştir. Böylece, dengesiz ve yüksüz senkron generatörde oluşacak faz-faz hatasına ait kısa devre analizi için, elde edilen simetrili bileşen devrelerden oluşan yeni bir kısa devre eşdeğer devresi elde edilmiştir. Önerilen yaklaşım örnek bir hata sistemine uygulanmış ve elde edilen sayısal sonuçlar sunulmuştur.

Anahtar Kelimeler: Kısa Devre, Faz-Faz Hatası, Senkron Generatör, Simetrili Bileşenler.

Aluminum Moulding and Simulation in Chill Mould

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In case of aluminum alloy products manufactured by chill moulding method, there are many mistakes when proper mold and casting conditions are not used. Casting mistakes must be minimized so that the product can be of good quality. Today, some computer software is used to predict the errors that may occur later in the mould design phase. In this study, casting simulations of the selected product were made using AnyCasting software. Mould design and production were performed and sample castings were made. Data obtained from the simulation and product were then analyzed.

Keywords: Moulding, Thermal Analysis, Porosity.

Meme Kanserinde Güncel Yaklaşımlar

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Giriş ve Amaç: Dünyada ve Türkiye'de kadınlarda en sık görülen ve kanser ölümlerinin %20'sini oluşturan meme kanseri insidansının gelişmiş ülkelerde yaşayan kadınlarda, az gelişmiş/gelişmekte olan ülkelerde yaşayanlara göre daha düşük olma eğiliminde olduğu bilinmektedir. Bu derleme, meme kanseriyle ilgili güncel gelişmeleri incelemek, önemini vurgulamak ve farkındalığı artırmak amacıyla geliştirildi.

Gereç-Yöntem: Major veri tabanları (Pubmed, ScienceDirect vb.) tarandı ve elde edilen bilimsel yayınlar kapsamlı bir şekilde incelendi.

Bulgular

Risk faktörleri: Literatürde kanıtlanmış meme kanseri risk faktörlerinin yanı sıra henüz kanıtlanmamış risk faktörlerinden bahsedilmektedir. Özellikle son yıllarda yapılan çalışmalarda, gece vardiyasında çalışanlarda sürekli ışığa maruz kalmaya bağlı melatonin salgılanmasındaki azalmayla ilişkili risk artışının, alkol kullanan ve geç doğum yapan gruplarla aynı olduğu (Erol ve Bilik 2014); düşük selenyum ve D vitamini düzeyinin meme kanseri riskini artırdığı belirtilmiştir (Koçak ve ark. 2011; Mohr ve ark. 2014).

Risk Belirleme ve Korunma: Günümüzde, bilinen risk faktörlerine farklı test sonuçlarının eklenmesiyle risk saptayan programlar (IBIS, MYRIAD II, BRCA-PRO, BIODICEA vb.) kullanılarak mutasyon varlığı ve kanser gelişme riski hesaplanabilmekte; böylece birincil önlemler kapsamında risk azaltıcı ilaç tedavisi ya da cerrahi tedavi uygulamasına karar verilebilmektedir.

Evreleme: Gen ekspresyon profillerine bakılarak oluşturulan yeni moleküler sınıflama kapsamında, farklı patolojik ve klinik özellikler gösteren Luminal A, Luminal B, Triple Negatif ve HER-2 Overekspresyonu gibi 4 grup tanımlanmış; böylece bireye özgü tedavi yönteminin belirlenmesi sağlanmıştır.

Tanı: Tanıya yardımcı uygulamalar, invaziv ve non-invaziv yöntemler olarak ele alınır. Pace ve ark.'nın (2014) mamografinin yarar/zararları ile bireysel çektirme durumlarını sistematik olarak değerlendirdiği çalışmasında, mamografi taramasının

meme kanseri mortalite oranını 40'lı yaşlarda %15; 60'lı yaşlarda %32 ve genel popülasyonda ise yaklaşık %19 azalttığı saptanmıştır.

Tedavi ve Bakım: Yirmi yıldan fazla izleme süresi olan çalışmalar, meme koruyucu cerrahinin mastektomiye eşdeğer sağ kalım sağladığını göstermiş ve bağlı olarak, radikal mastektominin yerini meme koruyucu cerrahi almıştır. Lenf ödemin önlenmesine yönelik farklı bir yöntem olarak 'Koltuk Altının Tersten Haritalandırılması' isimli yeni bir teknik geliştirilmiştir. Son yıllarda HER-2 geninin meme kanserindeki öneminin ortaya konulması ile birlikte, HER-2 pozitif meme kanserinde kemoterapiye ek olarak, yeni hedefe yönelik tedavi ajanları olan trastuzumab ve pertuzumab kullanılmaktadır.

Yeni Trendler: Nano-elmasların, triple negatif meme kanserinin tedavisinde kullanılan ilaçların istenilen etkisini anlamlı olarak iyileştirdiği (Deng ve ark. 2014); yüksek DOCK1 protein düzeylerinin kötü prognoz ve rekürrens ile ilişkili olduğu (Laurin ve ark. 2013) ve kanser hücrelerinin genetik parmak izini çıkaran 'genetik fingerprint' ve tümörün seyrine yön veren ana gen 'driver/sürücü' mutasyonunu saptayan ve tedavi edebilen yöntemler üzerinde çalışmalar olduğu bildirilmiştir (Demir 2015).

Sonuç: Meme kanserinde prognozun önemli belirleyicilerinden biri olan erken tanı odaklı çalışmalarla korunma önlemlerine ilişkin farkındalık oluşturacak programların yaşama geçirilmesi sağ kalım süresine ve yaşam kalitesine katkı sağlayabilir.

Anahtar Kelimeler: Meme Kanseri, Tanılama, Tedavi Yöntemleri, Güncel Gelişmeler, Yeni Yaklaşımlar.

Kansere Bağlı Yorgunluk

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Giriş: Yorgunluk, hastaları fiziksel, bilişsel ve duygusal yönden etkileyen çok boyutlu bir kavramdır.

Amaç: Bu derleme, kanser hastalarında günlük olarak yorgunluğun değerlendirilmesinin önemini vurgulamak ve ulusal ve uluslararası alanlarda kullanılan değerlendirme araçlarını incelemek amacıyla gerçekleştirildi.

Gereç-Yöntem: Major veri tabanları (Pubmed, ScienceDirect, CINAHL vb.) taranarak elde edilen ulusal ve uluslararası bilimsel yayınlar kapsamlı bir şekilde değerlendirildi.

Bulgular: Ulusal Kapsamlı Kanser Ağı (National Comprehensive Cancer Network-NCCN) kansere bağlı yorgunluğu, her zaman yapılan işlevleri engelleyen, kanser veya kanser tedavisi ile ilişkili olan, yaygın, sürekli ve subjektif yorgunluk hissi olarak tanımlamaktadır. Hastaları güçten düşüren ve hastalar tarafından halsizlik, enerji kaybı veya kırıklık olarak hissedilen, yorgunluk fizyolojik ve psikolojik değişikliklere ve genellikle öz-bakım gereksinimlerini karşılamada yetersizliğe neden olmaktadır. Literatürde, kansere bağlı yorgunluk yaşayan hasta oranları değişmekle birlikte genel olarak tüm kanserli hastaların %40 ile %100'ü bu semptomun kendilerini etklediğini belirtmektedir. Bu oranların birbirinden uzak olmasının nedeni, yorgunluğu, sadece hastalık evresi ve durumunun etkilemediği aynı zamanda yaygın olarak kabul edilen tanı kriterleri ve değerlendirme araçlarının yetersiz olmasının da hastayı fiziksel ve ruhsal olarak zorladığı gerçeğidir (Usta Yeşilbalkan 2015; ONS 2017). Ekibin etkin bir üyesi olan sağlık bakım profesyoneli, NCCN'nin kansere bağlı yorgunluk klinik rehberinde yer alan genel yorgunluk algoritmasını kullanarak, hastanın yorgunluk durumunu düzenli olarak değerlendirebilir ve yorgunluk düzeylerine ilişkin hemşirelik girişimlerini planlayabilir. Bu algoritma tarama, birincil değerlendirme, girişimler ve yeniden değerlendirme olmak üzere 4 aşamadan oluşmaktadır. İlk aşamada sağlık bakım profesyonelleri yorgunluğun olup olmadığını değerlendirmeli ve yorgunluk varsa 0 ile 10 puanlı sayısal ölçek üzerinde şiddetini belirlemelidir. Bu tek boyutlu ölçek dışında yorgunluğun şiddetini değerlendirmek için Kısa Yorgunluk Envanteri,

Kanserle İlişkili Yorgunluk Distres Ölçeği, Kanser Yorgunluk Ölçeği, Çok Boyutlu Yorgunluk Semptom Envanteri, Çok Boyutlu Yorgunluk Envanteri, Piper Yorgunluk Ölçeği vb. ölçekler de kullanılabilir. Hastanın yorgunluk düzeyi orta veya şiddetliyse; hemşire yorgunluğa neden olan faktörlerin değerlendirilmesini kapsayan ayrıntılı tıbbi öykü almalı ve fiziksel muayene yapmalıdır. Tanı sürecinde yorgunluğa neden olabilecek anemi, ağrı, emosyonel stres, uyku bozukluğu, ilaçların yan etkileri ve eşlik eden hastalıkları gibi yorgunluğa neden olabilecek tedaviyi etkileyebilir, herhangi bir faktörün olup olmadığının belirlenmesi önemlidir. Değerlendirme aşamasından sonra hastanın klinik durumuna göre yorgunluğu iyileştirecek nedene yönelik farmakolojik ve farmakolojik olmayan girişimler uygulanmalıdır. Uygulanan girişimlerin etkinliği mutlaka değerlendirilmelidir.

Sonuç: Kansere bağlı yorgunluğun değerlendirilmesi ve yönetimine ilişkin henüz bir fikir birliğinin olmaması ile birlikte NCCN, yorgunluğun yönetiminde temel nedenin araştırılmasının önemi üzerinde durmaktadır. Yorgunluğun yönetiminde sağlık profesyonellerinin, hasta ve ailesi ile birlikte ulaşılabilir hedefler belirleyerek, hastanın bireysel aktivite ve egzersiz programına katılımını sağlaması, yorgunluğa neden olan aktiviteleri belirlemesi ve bunları değiştirmeye yönelik stratejiler geliştirmesi gerekmektedir. Ek olarak, sağlık profesyonelinin yorgunluk girişimlerinin etkinliğini düzenli ve sistematik olarak değerlendirmesi gerektiği vurgulanmaktadır.

Anahtar Kelimeler: Kanser, Kansere Bağlı Yorgunluk, Tanılama, Semptom Yönetimi.

Mesleki Yeterlilik Test Merkezlerinin Etkinlik Değerlendirmesi (Assessing the Effectiveness of Vocational Qualification Test Centers)

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Ekonomik şartların gün geçtikçe ağırlaşması ve kurumlar arası rekabetin artması ile çalışanların mesleki becerilere sahip olabilmeleri, teorik bilgilerini pratik bilgilerine dönüştürüp mesleki yetkinliği kazanmaları ve bunu en iyi şekilde uygulayabildiklerini belgelendirmeleri istenmektedir. Ülkemizde son yıllarda nitelikli iş gücü ihtiyacının karşılanması ve yaşanan iş kazalarından sonra gereken önlemlerin alınması ve buna yönelik denetimlerin arttırılması amacı ile mesleki belgelendirme çalışmalarına hız verilmiştir. Bu çalışmaları teşvik ve denetlemek üzere görevlendirilen Mesleki Yeterlilik Kurumu (MYK) ilgili yönetmelikleri ve belgelendirme mevzuatını oluşturulmuştur. Bu sayede işverenler, uzmanlığını belgelendirmiş nitelikli çalışanları istihdam edebileceklerdir. Hatta bazı alanlarda yeterlilik belgesi olmayanları çalıştıramayacaklardır. Mesleki yetkinliğin belgelendirilmesi, işverene olduğu gibi ülke ekonomisine de dolaylı olarak fayda sağlayacağı için ülkemizde yeterlilik belgesine sahip çalışanları olan işverenlere, devlet tarafından sigorta primlerinde muafiyet gibi çeşitli teşvikler sağlanmaktadır. Ülkemizde mesleki yeterlilik belgelendirme amaçlı bir çok sınav merkezi (VOC Test Merkezleri) açılmış/açılmakta olup MYK ve TÜRKAK (Türk Akreditasyon Kurum) tarafından ya da Avrupa Akreditasyon Birliği bünyesinde çok taraflı tanıma anlaşması imzalamış diğer kurumlarca yetkilendirilmektedirler. Bu kurumların TS EN ISO/IEC 17024 standardına göre faaliyet göstermelerine özen gösterilmektedir. Ülkemizde 50'nin üzerinde yetkilendirilmiş sınav merkezi olmasına rağmen, perakende sektöründe çalışan BT Satış elemanı, BT Satış Sorumlusu ve BT Çözümleri Uzmanı Mesleki Yeterlilikleri için henüz sınav yapılamamaktadır. Bu açığı gidermek üzere Perakende Yeterlilik Geliştirme ve Belgelendirme Merkezi Projesi (PERAVOC[1]) başlatılmıştır. Bulut Bilişim altyapısına sahip Sabit ve Mobil sınavları yapacak bu merkezin yaklaşık 800 bin kişinin istihdam edildiği organize

[1] PERAVOC projesi İstanbul Kalkınma Ajansı tarafından Desteklenmekte Marmara Üniversitesi ve KMD tarafından yürütülen bir projedir.

perakende sektöründeki firmaların BT alanında insan kaynagı kapasitelerinin gelistirilmesi ve uluslararası standartlarda mesleki yeterliliklerinin belgelendirilmesi hedeflenmektedir. Bu makalenin amacı, BT alanında yapılacak olan mesleki yeterlilik sınavı etkinliğinin çeşitli yöntemler kullanarak izlenmesi ve ölçülmesine yönelik model önerisi sunmaktır. Yürütülecek mesleki yeterlik sınavlarının etkinliğini belirleyen ve aşağıda örnekleri verilen faktörler incelenmiş ve bu faktörlerin nasıl ölçüleceği konusu irdelenmiştir.

- MYK mevzuat değişikliklerinin izlenebilmesi
- Uygulamalı sınavların yapıldığı alanların günün koşullarına iyileştirilebilme kabiliyeti
- Sınav sorularının ilgili yetenek ve kabiliyetleri ölçebilir düzeyde olması,
- Soru setlerinin tüm yetenekleri ölçebilecek alan bilgisi bazında uygun dağılımları,
- Adayların sınav öncesinde yeterli düzeyde bilgilendirilmeleri,
- Görevlilerin tarafsızlık ilkesine uymaları için yürütülen çalışmalar
- Sınavın planlandığı gibi ve MYK ölçütlerinde yürütülmesi
- Sınav sonrası değerlendirme ve bilgilendirmelerin zamanında ve etkin yürütülmesi

Test merkezleri ilk açıldıklarında TÜRKAK tarafından akredite edilip, MYK tarafından onaylandıktan sonra yukarıda belirtilen konularda kendilerini sürekli en güncel durumda tutmak, gelişmeleri izlemek ve sınav sistemlerini gelişmelere uygun hale getirmek durumundadırlar. Bu çalışma kapsamında yukarıdaki alanlarda ilgili değerlendirmeleri yapacak kriterler belirlenmiş ve Test Merkezi Etkinlik Değerlendirme Süreci tanımlaması gerçekleştirilmiştir.

Teşekkür:

PERAVOC projesi kapsamında çalışmalarımızı yürütürken bizlere verdikleri destekten dolayı Mühendislik Fakültesi Dekanımız Prof. Dr. Murat Doğruel, KMD Genel Sekreteri Füsun Tavus, PREAVOC projesi ekip üyeleri Duygu Sayın, Filiz Bülbül ve Egemen Sayraç'a teşekkür ederiz.

Genç ve Yaşlı Olgularda Yürüyüş Özellikleri ve Etki Eden Faktörler

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Giriş ve amaç: Yaşla vücut sistemlerinde ve yapılarında meydana gelen fizyolojik değişikliklere bağlı olarak yürüyüş özellikleri değişmektedir. Bu çalışmanın amacı yaşlı (65-75 yaş) olguların, genç (20-30yaş) olgulara göre yürüyüş özelliklerindeki kayıp yüzlerini belirlemek ve her iki yaş grubundaki bu özelliklere etki eden faktörleri araştırmaktır.

Yöntem: Çalışmaya yaş ortalaması 22,1 olan (20-30 yaş) ve yaş ortalaması 71,6 olan (65-75 yaş arası) olan toplam 52 olgu dahil edilmiştir. Olguların yürüyüş özelliklerinden, kadans, yürüme hızı ve yürüme döngüsü, adım uzunluğu, adım genişliği, ve yürüyüş fazları G-Walk cihazı ile değerlendirilmiş aritmetik ortalamaları belirlenmiş, gençlere göre meydana gelen değişikliklerin yüzdeleri hesaplanmıştır. Her iki yaş grubunda değerlendirilen özelliklere etki eden faktörleri belirlemek için korelasyon analizi yapılmıştır.

Sonuçlar: Genç ve yaşlı bireylerdeki antropometrik ölçümlerden BMI yaşlı bireylerde %21,7 ve yürüme periyodu durasyonu %4.8 oranında artmıştır. Yaşlı bireylerde yürümeye ait diğer özelliklerden kadansta %3.8, yürüme hızında %18.3, adım uzunluklarında %14,7 azalma tespit edilmiştir. Yürüme özelliklerindeki değişikliklere sebep olabilecek alt ekstremite kas kuvvetlerine ait değerlendirmelerde de yaşlı olgular aleyhine Kuadriseps kas gücünde (R) %34,3 ve (L) %28 oranlarında, benzer şekilde tibialis anterior kas gücünde (R) %27,1 ve (L) %22,8 oranlarında kayıp belirlenmiştir. Yürümedeki değişikliklere etki eden faktörler incelendiğinde yaşlılarda yürüme hızı ile BMI (r=0,488) ve Tibialis anterior kas kuvveti (r= 0,409) arasında orta düzey ilişki, benzer şekilde adım uzunluğu ile BMI (r=0,561) ve Tibialis anterior kas kuvveti (r=0.453) arasında ilişki bulunmuştur.

Tartışma: Sonuçlarımız, yaşlı olgularda (65-75yaş) alt ekstremite kas kuvveti kayıp yüzdesinin yürüme özelliklerindeki kayıp yüzdesinden fazla olduğunu ve kas kuvvet kaybının fonksiyona etkisinin beklenenden daha az olduğunu göstermiştir. Ayrıca yaşlı olgularda kuadriseps kas kuvvetindeki azalma yürüme özelliklerine etki etmezken, tibialis anterior kas kuvvetindeki azalma yürüme hızını ve adım uzunluğunu olumsuz etkilemiştir.

Anahtar Kelimeler: Geriatri, Yürüme, Kas Kuvveti.

The Effects of Vibration and Packaging Variations on Quality Losses in Agricultural Products in Road Transport

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During the period from production to consumption in agriculture and food sector; it can be possible to prevent the losses that occur, to evaluate the products outside of the seasons, to be successful in fruit and vegetable exports but by the development or dissemination of products and food preservation methods. In Turkey, 30% of fruit and vegetable production loses its economic value without being consumed, and only 3% of that production can be exported even though it has a significant potential. In particular, fruits and vegetables are easily damaged during shipment because they have a high percentage of water in their fresh form and continue to mature during transportation due to their physiological functions through postharvest respiration. Fruit and vegetable injuries caused by vibrations during long-distance transportation come into play. As a result of the vibrational effect, bruises on fruits and vegetables cause the quality drops and even product losses. During the transportation of fruits and vegetables, the mechanical vibrations of the vehicle and road conditions are adverse effects and there are academic studies on the precautions to be taken in order to reduce the worst. In this study, the effects of factors such as vibration frequency, acceleration, size and pile height were investigated in transportation of the most important vegetable tomatoes produced in many parts of the world.

Keywords: Road Transport, Agricultural Products, Vibration, Packaging.

Değişken Kondenser Sıcaklığına Sahip Bir Klimanın Karşılaştırmalı Performans Analizi

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Bu çalışmada, soğutma modunda kullanılan sabit (klasik) ve değişken kondenser sıcaklığına sahip iki özdeş klimanın, değişen dış hava sıcaklıklarına bağlı performansı teorik olarak analiz edildi. Konya iklim şartlarında oturum alanı 110 m^2 olan örnek bir dairenin haziran, temmuz ve ağustos aylarına ait değişken dış hava sıcaklık farkından kaynaklı ısı kazancı, son 5 yılın sıcaklık ortalamaları esas alınarak, saatlik olarak hesap edildi. Klasik sistem için, üretici firma katologlarında bulunan çalışma sıcaklıkları esas alınarak, kondenser sıcaklığı sabit 50°C olarak kabul edildi. Değişken kondenser sıcaklığına sahip klima için, dış hava sıcaklığı ile kondenser sıcaklığı arasındaki sıcaklık farkı hep 10°C olacak şekilde sıcaklık farkını hep sabit tutacak bir değişken hızlı kompresör kullanıldığı varsayıldı. Hesaplamalarda çalışma akışkanı R410A için EES (Engineering Equation Solver) programından faydalanıldı. Dış hava sıcaklıklarına bağlı olarak her iki sistemin saatlik COP (Coefficient of Performance) değerleri, ısı kazancı ve bu ısının klima ile atılması için harcadıkları elektrik enerji değerleri hesap edildi. Hesaplar sonucunda, klasik sisteme sahip klimanın, değişken kondenser sıcaklığına sahip klimaya göre yaklaşık 1,5 kat daha fazla enerji harcadığı görüldü.

Anahtar Kelimeler: Klima, Değişken Kondenser Sıcaklığı, Değişken Hızlı Kompresör, İnvertörlü Klima.

Opere Ön Çapraz Bağ Yaralanması Geçirmiş, FTR Ünitesinde Tedavi Gören ve Sadece Ev Egzersiz Programı Alan Hastaların Kuadriseps Kas Kuvvetinin Karşılaştırılması

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Ülkemizde ve dünyada diz yaralanma prevelansının günden güne arttığı ve maliyetin yüksek olduğu bilinmektedir . Ön çapraz bağ yaralanması sonrası cerrahi geçiren hastalar bazen ev programıyla takip edlmekte, bazen de fizik tedavi ve rehabilitasyon (FTR) ünitesinde rehabilite edilmektedir. Bu çalışmanın amacı; ön çapraz bağ yaralanması nedeniyle opere olan hastaların cerrahi sonrası ev programıyla takip edilenlerin FTR ünitesinde rehabilite edilen hastalara göre durumunun karşılaştırılmasıdır. Mustafa Kemal Üniversitesi Fizik Tedavi Ünitesine gelen 20 hasta değerlendirmeye alındı. 10 birey ev programıyla, 10 bireyde FTR ünitesinde takip edildi. Subjektif yakınmaları, aktivite düzeyi ve memnuniyet derecesinin belirlenmesi için Lysholm diz skoru, Ouadricep femoris kas kuvveti için manuel kas testi kullanıldı. FTR ünitesindeki bireylere 18 seans boyunca elektroterapi ve opere ön çapraz bağ protokolüne uygun egzersiz programı uygulandı. Ev programı alan bireylerin yaş ortalaması 33.5, FTR ünitesinde tedavi görenlerin yaş ortalaması 36.6 idi. FTR ünitesinde tedavi görenlerin %20 si kadın, %80'i erkek, ev programında %20 kadın %80 erkek idi. FTR ünitesinde tedavi alan ile ev programı alan bireylerin Lysholm diz skorunda anlamlı fark bulundu. Kas testi değerlendirmesi tedavi sonrasında tedavi öncesine göre FTR ünitesinde tedavi görenlerde anlamlı fark bulunurken, ev programıyla takip edilenlerde anlamlı fark bulunmadı. Yaptığımız çalışmada ev programı alan hastaların FTR ünitesinde tedavi

alan hastaya göre farklı bulunmasında hastanın takip sürecinin önemli olduğu düşünülmektedir. FTR ünitesinde uygulanan elektro ajanlarının ağrıyı azalttığı ve hastanın fizyoterapist tarafından takibinin önemli olduğunu düşünmekteyiz.

Anahtar Kelimeler: Ön Çarpraz Bağ, Quadriceps, Egzersiz, Rehabilitasyon.

Comparison of Quadriceps Femoris Muscle for Treatment of Physical Therapy and Rehabilitation and Their Only Home Exercise Program for Patients with Anterior Cruciate Ligament Injury

It is known that the prevalence of knee injury in our country and in the world increases day to day and is costly(1). Patients who undergo surgery after anterior cruciate ligament injury are sometimes followed by a home program, sometimes rehabilitated at physical therapy and rehabilitation (FTR) unit. The purpose of this study is; comparison of the postoperative home follow-up of patients with anterior cruciate ligament injuries according to rehabilitated patients in the FTR unit. Twenty patients who came to Mustafa Kemal University Physical Therapy Unit were evaluated. 10 individuals were followed by home program and 10 individuals were followed by FTR unit. Lysholm knee score was used to determine subjective complaints, level of activity and satisfaction, and manual muscle test for Ouadricep femoris muscle strength. Individuals in the FTR unit were subjected to electrotherapy and opereal anterior cruciate protocol exercise program during 18 sessions. Individuals followed up with the home program showed a home exercise program in accordance with the opaque anterior cruciate ligament protocol. The average age of the subjects receiving the home program 33.5 was the average age of those receiving treatment 36.6. Patients who FTR unit treatment were 20% female, 80% were male,patients who home program were 20% were female, 80% were male. There was a significant difference in the Lysholm knee score of the subjects receiving treatment with home program in the FTR unit. Post-treatment to pre-treatment according that there was no significant difference in follow-up with home program compared while there was significant difference in FTR unit. It is thought that the follow-up period of the patient is important when the patients who take the home program are different according to the patients receiving treatment in the FTR unit. We think that electrical agents applied in the FTR unit reduce pain and follow-up by the patient physiotherapist.

Sigara İçen ve İçmeyen Genç Bireylerde Egzersiz Farkındalığının Arttırılması

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Sigara kullanım alışkanlığının bireylerde emosyonel durum, yaşam kalitesi, yorgunluk, aerobik kapasite üzerine olumsuz etkileri bilinmektedir. Dispnesi bulanan ve sigara içen gençlerle sigara içmeyen sağlıklı bireylerde egzersiz farkındalığının artırılması amacıyla çalışma planlanmıştır. Sigara kullanımı sonucu solunum fonksiyonları bozulmuş ve dispne şikayeti olan 20 bireyle, herhangi bir sağlık problemi olmayan kontrol grubuna dahil edilen gönüllü 20 birey ile çalışma planlandı. Çalışma öncesi ve sonrası fiziksel, kognitif fonksiyonlar ve emosyonel durum Beck depresyon anketi ile, yorgunluk seviyeleri Checklist İndividual Strength'nin Türkçe (CIS-T) versiyonu ile, uyku kalitesi Pitsburg anketi ile, yaşam kalitesi SF-36 anketi ile, aerobik kapasite 20 m mekik testi sonucu hesaplanan VO2max (maximum oksjen hacmi) ile grup içi ve gruplar arası değerlendirildi. Sigara içen grubun ayrıca nikotin bağımlılığı Fagerström nikotin bağımlığı testi ile değerlendirildi. Her iki gruba düz bir zeminde haftada en az 3 gün, en az 40 dk olmak üzere toplamda 6 hafta aerobik egzersiz eğitimi (orta düzey şiddette yürüme) ev programı şeklinde uygulandı. Akıllı telefonlarda bulunan adımsayar programı ile bireylerin attıkları adım sayısı tele-rehabilitasyon kapsamında telefon görüşmesi ile kaydedildi. Çalışma sonucunda sigara grubunda dispne durumunda, depresyon düzeyinde, nikotin bağımlılığında, uyku kalitesinde, yaşam kalitesi anketinin genel sağlık alt parametresinde istatiksel açıdan anlamlı farklılık bulunmazken SF-36'nın sağlık ve günlük aktiviteler, ve duygular bölümünde, yorgunluk düzeyinde ve atılan adım sayısında istatiksel açıdan anlamlı farklılık saptandı. Kontrol grubunda çalışma sonucunda uyku kalitesinde, depresyon düzeyinde, yorgunluk düzeyinde, atılan adım sayısında ve yaşam kalitesinin duygular bölümünde anlamlı farklılık saptanmışken VO2max düzeylerinde istatiksel farklılık saptanmadı. Her iki grupta günlük atılan adım sayısında artış gözlenirken, gruplar arasında anlamlı farklılık bulunmadı ancak VO2max düzeylerinde istatiksel açıdan anlamlı fark bulundu. Her iki grupta da kolay ve masrafsız olan yürüyüş sonrası yorgunluğun azalması,

emosyonel durumun düzelmesi, özellikle dispnesi bulanan gençlerde aerobik kapasitenin artışı ile birlikte yaşam kalitesinin değişmesi günlük yaşamda egzersiz farkındalığını arttırmıştır.

Anahtar Kelimeler: Depresyon, Egzersiz, Sigara, VO2max,Yorgunluk.

Increasing Exercise Awareness among Smoking and Non-Smoking Young Individuals

Smoking habits are known to have negative effects on emotional status, quality of life, fatigue, aerobic capacity in individuals. The study was planned to increase the awareness of exercise in young people with dyspnea and smokers and healthy non-smoker individual. 20 individuals with impaired respiratory function and 20 who had complaints of dyspnea were included in the study. Twenty volunteers were included in the control group without any health problems. Before and after the study, physical, cognitive functions and emotional status were assessed by Beck depression questionnaire, fatigue levels Checklist with the Turkish (CIS-T) version of Individual Strength, sleep quality with the Pitsburg questionnaire, quality of life with SF-36 questionnaire, aerobic capacity with VO2max (maximum oxygen volume) calculated at 20 m shuttle test result were evaluated.within the group and between groups before and after the study. The smoker group was also assessed for nicotine dependence by the Fagerström nicotine addiction test. Both groups were administered aerobic exercise training (moderate violent walking) as a home program for a total of 6 weeks, with a minimum of 3 days and a minimum of 40 minutes per week. With the "step-by-step"U program available on smartphones, the number of steps taken by individuals was recorded via telephone interview within the scope of tele-rehabilitation. As a result of the study, there was no statistically significant difference in the general health subparameter of dyspnea, depression level, nicotine dependence, sleep quality, quality of life questionnaire in cigarette group but there was a statistically significant difference in SF-36 between health and daily activities, emotional part, fatigue level and footstep number. In the control group, there was a significant difference in the sleep quality, depression level, fatigue level, footstep number and emotional quality of life quality but there was no significant difference in VO2max levels. While an increase in the number of daily footsteps was observed in both groups, there was no significant difference between the groups but VO2max levels were statistically significant. In both groups, the decrease of fatigue after walking, the improvement of emotional condition, the increase of aerobic capacity in young people with dyspnea especially, increased the awareness of exercise in daily life.

Keywords: Depression, Exercise, Smoking, VO2max, Fatigue.

Hemiparetik Serebral Palsili Bireylerde Kardiyorespiratuar Durumun Değerlendirilmesi

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Özel Eğitim ve Rehabilitasyon merkezlerinde tedavi gören 20 hemiparetik serebral palsili (SP) ve kontrol grubu için 20 sağlıklı bireyin dahil edildiği bu çalışmanın amacı; SP'li çocuğun motor gelişim düzeyi ve fonksiyonel seviyesinin çocuğun kardiyorespiratuar durumu üzerine etkilerini incelemek ve sonuçları sağlıklı çocukların sonuçlarıyla karşılaştırmaktır. Ayrıca hemiparetik serebral palsili bireylerle sağlıklı bireyler arasında kardiyorespiratuar durumu karşılaştırmak ve fizyoterapinin (FTR) kardiyorespiratuar durum üzerine etkisi ile ilgili objektif veriler elde etmektir. Çalışmaya katılmayı kabul eden 40 bireyin demografik bilgileri vücut kitle indeksi ve fizyoterapi alma sıklığı, süresi sorgulandıktan sonra, kaba motor fonksiyon sevileri Kaba Motor Sınıflama Sistemi (GMFCS) ile esneklikleri otur-uzan testi ile, kardiyorespiratuar endurans 6 dakika yürüme testi ile, günlük yaşam aktivitelerinde bağımsızlıkları WeeFIM anketi ile değerlendirildi. Oksijen satürasyonu, solunum frekansı, kalp hızı değerlendirme öncesi ve sonrası ve toparlanma sürecinde sorgulandı. Çalışmaya 20 (%55 kız,%45 erkek) hemiparetik serabral palsili birey ve 20 (%65 kız,%35 erkek) kontrol grubu dahil edildi. Katılımcıların hepsi normal vücut ağırlığında ve fizyoterapi alma süresi en fazla 6 (%25) ve 7 yıl (%25) şeklinde idi. 6 dakika yürüme test analizine göre hasta ile kontrol grubu arasında oksijen satürasyonu, solunum frekansı ve kalp hızı parametrelerinde test öncesinde, sonrasında anlamlı bir fark görülmedi. Hasta ile kontrol grubu arasında yürüme mesafesinde ve WeeFIM toplam skorunda ve esneklik testinde istatiksel açıdan anlamlı bir fark görüldü. Hemiparatik grupta FTR alma süresi ile kardiyovasküler endurans, esneklik, yaşam kalitesi arasında ilişki tespit edildi ancak istatiksel açıdan anlamlı bulunmadı. GMFCS ile WeeFIM, esneklik testi ve sağ el kavrama kuvveti arasında istatiksel açıdan anlamlı ilişki bulundu. Her iki grup için esneklik testi 6 dakika yürüme testi ve WeeFIM ile istatiksel açıdan anlamlı ilişkili bulundu. Sonuç olarak serebral palsinin kardiyorespiratuar durum üzerine etkisi bulunmakta olup bu sorunlar çocuğun

fiziksel, ruhsal ve sosyal gelişimine engel olmakta ve yaşam kalitesini düşürmektedir. Alınan fizyoterapi sıklığı kardiyorespiratuvar durumu etkilemektedir. Bu nedenle bu konu hakkında daha fazla çalışma yapılması ve aerobik eğitim konusunda ailelerin bilgilendirilmesi gerekmektedir.

Anahtar Kelimeler: 6 Dakika Yürüme, Esneklik, GMFCS, Serebral Palsi, WeeFIM.

Assessment of Cardiorespiratory Condition in Hemiparetic Cerebral Palsy

20 individuals with hemiparetic cerebral palsy (CP) and 20 healthy individuals were included the study. the purpose of this study; To examine the effects of motor development and functional level of the children with CP on cardiorespiratory status and to compare the results with healthy children. It is also necessary to compare cardiorespiratory status among healthy individuals with hemiparetic cerebral palsy individuals and to obtain objective data on the effect of physiotherapy (FTR) on cardiorespiratory status. 40 people who agreed to participate in the study were questioned for demographic information, body mass index and the frequency and duration of physiotherapy. Gross motor function with Gross Motor Classification System (GMFCS), the flexibility with sit-down test, cardiorespiratory endurance with a 6 minute walk test, independence in daily life activities,with WeeFIM questionnaire were evulated. Oxygen saturation, respiratory frequency, heart rate were recorded before and after evaluation and recovery process. 20 (55% female, 45% male) hemiparetic cerebral palsy individuals and 20 (65% female, 35% male) and control group were included in the study. Participants were all normal body weight the maximum duration of physiotherapy was 6 (25%) and 7 (25%) years. There was no significant difference in oxygen saturation, respiratory frequency and heart rate parameters before and after the 6 minute walking test between patient and control group. There was a statistically significant difference between the patient and control group at walking distance and WeeFIM total score and flexibility test. The relationship between the duration of physiotherapy and cardiovascular endurance, flexibility, quality of life was determined but not statistically significant were found in hemiparatic group. There was a statistically significant relationship between the GMFCS and WeeFIM, flexibility test and right hand grip strength. Flexibility test for both groups was statistically significant with 6 min walking test and WeeFIM. As a result, cerebral palsy has an effect on the cardiorespiratory state, which obstruct the child's physical, mental and social development and decrease the quality of life. The physiotherapy frequency affects the cardiorespiratory status. For this reason, parents need to be informed about further study and aerobic training on this topic.

Keywords: 6 Minute Walking, Flexibility, GMFCS, Cerebral Palsy, WeeFIM.

Yeniden Mühendislik Yaklaşımı İle 3-Boyutlu Yazıcılarda Performans Artırımı

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3-boyutlu (3D) yazıcıların üretim teknolojilerinde kullanımları gün geçtikçe artmakta ve bu alanda yapılan çalışmalar ile kullanım alanları ve bu cihazlarla üretilen ürünler yaygınlaşmaktadır. 3-boyutlu yazıcıların üretim maliyetlerinin düşmesi ile günümüzde artık birçok cihaz ve makine parçaları çok daha kolay ucuz ve kısa sürede üretilebilmektedir. Kullanım alanları ve duyulan ihtiyaç arttıkça 3 boyutlu yazıcı teknolojisinde gelişmekte ve dolayısı ile günlük hayatımızda kullandığımız birçok ürünün üretilmesi mümkün olabilmektedir. Henüz daha gelişme aşamasında olan 3-boyutlu yazıcıların performanslarının artırılması için bu alanda birçok çalışmanın yapılmasına devam edilmektedir. Bu kapsamda yapılan bu çalışmada, tersine mühendislik, iş metodu teknikleri (Doğrudan Zaman Etüdü, Malzeme Listesi, vb.) ve ileri mühendislik teknikleri kullanarak yazıcıları parçalarına ayırmak, iyileştirmeler yapmak ve yeniden birleştirme süreçlerini tekrarlayarak 3 boyutlu yazıcının üretim aşamalarını hızlandırmak ve en verimli çalışma standardının belirlenmesi amaçlanmıştır. Çalışma sırasıyla, 3-boyutlu yazıcı parçalarını öğrenmek ve malzeme listesini oluşturmak için tersine mühendislik kullanmak, parçaların söküm sürelerini oluşturmak, cihazda pratik çalışma eksikliğini tespit etmek ve gerekli parçaları eklemek, son olarak makinenin parçalarını yeniden birleştirmek için ileri mühendislik süreçlerinin yürütülmesi olarak planlanmıştır. Tüm veriler tersine mühendislik ve ileri mühendislik aşamasında 3-boyutlu yazıcı üzerinden gözlem sonucu elde edilmiştir. Veriler ana eleman ve alt elemanlar olarak sınıflandırılarak sonrasında bu elemanların sökme ve birleştirme süreleri için ayrıntılı tablolar oluşturulmuştur.

Anahtar Sözcükler: 3-Boyutlu Yazıcı, Tersine Mühendislik, İleri Mühendislik, Doğrudan Zaman Çalışması.

The Effects of Temperature and Pressure on Some Physical Properties of Calabrian Pine Wood

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While increased usage areas of wood materials day by day, it has been inevitable that using suitable and long duration of them due to the difficulties in supplying raw material. For these reasons, there are many processes that reduced the biodegradation and mechanical abrasions of solid wood exposed in usage area. The main aim of this study is to investigate the effects of various thermal and compressive processes on its physical properties such as density and shrinkage of solid calabrian pine specimens. For this purpose, tests were carried out on the samples supplied from the Calabrian pine logs obtained from Kahramanmaraş province in Eastern Mediterranean region of Turkey. Test specimens were formed in six different ways explained by: control samples (CS), control immersed in water (S1), treated with autoclave at 105°C (S2) and 135°C (S4), and pressed with 20 atm pressure for 30 minutes at 90°C (S3 and S5). Firstly, the obtained results were statistically evaluated by using the analysis of variance (ANOVA) and Duncan's mean separation test, according to these results the oven-dry and fully wet densities calculated after drying and immersed in water did not constitute a significant difference statistically between the groups. Besides, obtained data showed that temperature application in autoclave at 105°C and 135°C during 1 hour has significant effect (p0.000) on density, it was also indicated that applying at the temperature of 90°C as well as pressure at 20 atm during 30 minute on same specimens was also statistically different. Besides, it was determined that there is a significant difference on radial dimensions applied pressure process of specimens. While the highest percentage of radial shrinkage was measured in the samples of group S3 (22.4%), the lowest radial shrinkage was in S2 group (0.45%).

Keywords: Calabrian Pine, Thermal Treatment, Pressure, Density, Radial Shrinkage.

Social Impact during Bluetongue Disease Outbreak in Sheep in Northern Part of Albania

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Economics of animal health recently is becoming a new important research area, which is growing rapidly in last two decades. This study calculate general economic impact of bluetongue disease on Albania –Kosovo Border during 2014. The study involve broad economic analyzes of animal direct physically lost, drop milk production and other immediate expenses. The aim of this study was to assess the economic impact of bluetongue disease by converting them in monetary value according above mention aspects. Material and method: The methodology of this study is based on analyzing of data collected from dedicated questioners for this aim. The data were analyzed with ToolPak Excel software. Results: The economic analyses is based on calculation of prevalence, mortality, reducing milk production, expenses for medical treatment and impact on reproduction. The prevalence of bluetongue disease was approximately 18% and mortality rate 5%. The milk production yield dropped 56%. Total direct and indirect lost were calculated around 18434.5 Euro.

Keywords: Bluetongue Disease Outbreak, Milk Production, Economics Of Animal Health And Production.

Hipertermik Intraperitoneal Kemoterapi (HİPEK) Uygulamasında Bakım

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Hipertermik Intraperitoneal Kemoterapi (HİPEK), peritoneal boşluğa yayılmış bazı kanser türlerinin tedavisinde sitoredüktif cerrahiden hemen sonra kullanılan bir yöntemdir.Tümörün mümkün olduğunca tamamını çıkarmak amacıylauygulanan sitoredüktif cerrahi girişimden sonra (sitoredüksiyon), ısıtılan kemoterapi ilaçlarını içeren bir solüsyon (42°C'ye ısıtılmış yaklaşık 3 litre kemoterapötik solüsyon), drenler yolu ile kalan tüm kanser hücrelerini hedeflemek için batına verilerek, peritoneal perfüzyon yapılır. HİPEK, transekoelomik metastaz ile karın ve peritoneal boşluğa yayılan çeşitli peritoneal ve appendikse ait malignitelerde, kolorektal, gastrik ve ovaryel malignitelerde, uzak organ metastazı olmayan hastalarda sitoredüktif cerrahi ile kombine olarak uygulanabilmektedir. HİPEK'in uygulanmasında açık ve kapalı abdomen yöntemi olarak iki yöntem tanımlanmıştır. Bu iki yöntem dışında, farklı gruplar tarafından kullanılan karışık yöntemler (hibrid yarı açık veya yarı kapalı) de bildirilmektedir.HİPEK uygulamasında perfüzyon süreleri, sitostatik ajanlar, kombinasyonlar ve konsantrasyonlar konusunda da standart bir yöntem bulunmamaktadır. En sık kullanılan ilaçlar mitomisin-c, doksorubisin, oksaliplatin, irinotekan ve sisplatintir. HİPEK uygulanacak hastaların ameliyat öncesi döneme ilişkin bakımında en önemli nokta hasta eğitimidir. Cerrahi onkoloji kliniklerinde, cerrahi girişim zamanı ve bilgilendirilmiş izin ile ilgili hasta ve yakınlarıyla görüşülüp, hastanın fiziksel değerlendirmesi yapıldıktan sonra hasta eğitimine başlanmalı; eğitim, ağrı kontrolü, spirometre kullanımı ve erken ambulasyon gibi temel konular üzerine odaklanmalıdır. Hastaların %25'ine ameliyat sonrası dönemde stoma açılabileceğinden, bu süreçte stoma hemşiresinden destek alınabilir. Ameliyat sırası dönemde HİPEK uygulaması sırasında, hipertermi ve intraabdominal basınç artışına bağlı kardiyak disfonksiyon, metabolik hızda ve oksijen tüketiminde artış, akut böbrek hasarı ve kemoterapötik ajanlara bağlı sitotoksik etkiler gibi sorunlar görülebilmektedir. Cerrahi girişim sırasında bu sorunlar açısından hasta sürekli izlenmeli, santral venöz basınç ölçümü yapılmalı, intraarteriyel kan basıncı, idrar çıkışı, kan gazı ve saatlik elektrolit değerleri

izlenmeli, sıvı kayıpları karşılanmalıdır. Hastalarda koagülopatisöz konusuysa, normovolemiyi sağlamak için taze donmuş plazma replasmanı yapılabilir. Ameliyat sonrası erken dönemde hastalar yoğun bakımda izlenir. Ameliyat sonrası dönemde hasta, gastrointestinal sistem perforasyonu, anastomoz kaçağı, safra kaçağı, fistül oluşumu, pankreatit, ameliyat sonrası kanama, ileus, derin ventrombozu ve pulmoneremboli açısından izlenmelidir. Budönemde bakım olası komplikasyonların yönetimi, ağrı yönetimi ve konforun sağlanması, mobilizasyon, laboratuvar bulgularının ve cerrahi drenlerin izlemi, beslenme, yara bakımı gibi konuları içerir. Hastaya stoma açılmışsa stoma bakımı ve eğitimi de yapılmalıdır. Sonuç olarak, çok yönlü ve kompleks bir işlem olan sitoredüktif cerrahi ve HİPEK uygulaması sırasında meydana gelebilecek değişiklikler, hastanın dikkatle ve titizlikle izlenmesini gerektirir. Bu amaçla, ön hazırlıkların yapılması, gerekli eğitim ve bilgilendirmenin sağlanması, uygun monitorizasyon, gereken ilaç, kan ürünü ve ekipmanların önceden hazırlanması, nitelikli hemşirelik bakımı için önemlidir.

Analysis of Business Cycle Synchronisation in Western Balkan Countries and Turkey

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Article analyses business cycle in Western Balkan countries such as Croatia, Macedonia and Serbia with a special focus on business cycle synchronisation in Montenegro and Turkey. In the analysis most recent empirical method of business cycle measurement was used. More precisely, wavelet analysis of time series is applied in order to examine presence of business cycles and level of their synchronization. Based on the data for Montenegro and Turkey from 1992 until 2013, two business cycle components can be observed, first that last from one to two years and second of the duration from four to six years. However, Turkish economy was faced with much more business fluctuations during the observed period. The highest level of synchronization between cyclical components is observed during the past global financial crises.

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