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BIOSCIENCE, BIOTECHNOLOGY, AND BIOCHEMISTRY

OCTOBER 24-25

2022

VALENCIA, SPAIN

Hosting Organization:
Eurasia Conferences, Kemp House, 152-160 City Road, London, EC1V 2NX

SCIENTIFIC PROGRAM

09:50-10:00 @ **Introduction, Welcome note and Conference Inauguration**
Conference Room: Hera

DAY 1
October 24, 2022

Keynote Sessions

10:00-10:30
Title: The Environment and the Earth do not have to kill in a banal way – the fall

Roman Maciej Kalina, Independent Scientist/Piwniczna-Zdrój, Poland

10:30-11:00
Title: The role of climate proactivity in improving the competitiveness of European regions

Urszula Bronisz, Institute of Socio-Economic Geography and Spatial Management, Faculty of Earth Sciences and Spatial Management, Maria Curie-Skłodowska University, Lublin, Poland

Tea and Refreshments Break 11:00-11:20

11:20-11:50
Title: Trace metals bioreduction and response of bacterial communities in soils near a smelting plant

Prof. Yi Huang, Professor of Geochemistry, State Key Laboratory of Geohazard Prevention and Geoenvironment Protection, Chengdu University of Technology, P.R.China

11:50-12:20
Title: BIOCEMENTATION OF SOILS, A SUSTAINABLE SOIL IMPROVEMENT TECHNIQUE

Rafaela Cardoso, Instituto Superior Técnico, University of Lisbon, Portugal

12:20-12:50
Title: Reduction Mechanisms of V^{5+} by Vanadium-Reducing Bacteria in Aqueous Environments: Role of Different Molecular Weight Fractionated Extracellular Polymeric Substances

Prof. Dan Zhou, College of Ecology and Environment, Chengdu University of Technology, Chengdu, China

Session Wrap 12:50-13:00

Lunch Break 13:00-14:00

Keynote Speaker Sessions

14:00-14:30
Title: Valorisation of Agricultural Wastes as an Approach to a Better Management

Dr. P.A.M. Mourão, Department of Chemistry and Biochemistry, MED-Mediterranean Institute for Agriculture, Environment and Development, University of Évora, Évora, Portugal

14:30-15:00
Title: The Contribution of Food Chemistry to the World of Cosmetics

Dr. Irene DINI, Pharmacy Department, Federico II University of Naples, Italy

Tea and Refreshments Break+Poster Presentations 15:00-15:15

Speaker Sessions

15:15- 15:35	**Title: Grow-out culture of Magallana bilineata: A comparison of growth and survival of wild and hatchery-bred spat** **Ma. Junemie Hazel L. Lebata-Ramos,** Aquaculture Department, Southeast Asian Fisheries Development Center, Tigbauan, Iloilo 5021, Philippines
15:35- 15:55	**Title: How can we enhance abiotic stresses tolerance in plants? A physiological approach** **Lidia López-Serrano,** Institute for Mediterranean and Subtropical Horticulture 'La Mayora' (IHSM-UMA-CSIC), Campus de Teatinos, Avda. Louis Pasteur, 49, 29010 Málaga, Spain
15:55- 16:15	**Title: Effect of halogenated compounds on the anaerobic digestion of marine seaweed and resulting products** **Lydia Rachbauer,** Deconstruction Division, Lawrence Berkeley National Lab, Berkeley, CA, USA
16:15- 16:35	**Title: Microneutralization assay for the detection of neutralizing antibodies against SARS-CoV-2** **Enrique Noa Romero, AIDS Research Laboratory / Mayabeque, Cuba**

Poster Presentation 16:35-16:50

Poster 1	**Title: Microbiological characteristics of the deer meat during various storage conditions** **Anda Valdovska,** Latvia University of Life Sciences and Technologies, Faculty of Veterinary Medicine, Jelgava, Latvia
Poster 2	**Title: The Generation of Neurosphere from Bone Marrow Mesenchymal Stem Cells** **Farhaneh Anbarestani,** Department of Science, Science and Research Branch IAU, Tehran, Iran
Poster 3	**Title: Protection of Cuban vaccines against SARSCoV-2 variants of concern in the vaccinated population** **Juliet Maria Enriquez Puertas,** AIDS Research Laboratory / Mayabeque, Cuba

Closing Ceremony 16:50-17:00

DAY 2

October 25, 2022

Virtual Session | Central European Time (CET)

09:50-10:00 @ Session Introduction

Keynote Sessions

10:00-10:30	**Title: Tracing environmental changes in the past using faunal and geological data** **Kamilla Pawłowska,** Department of Palaeoenvironmental Research, Institute of Geology, Adam Mickiewicz University in Poznań, Poznań, Poland

10:30-11:00	**Title: Simulations of the concentrations of pollutant particles PM10 and PM2.5 for the sea breeze** **Tanja Trošić Lesar,** Croatian Meteorological and Hydrological Service, Zagreb, Croatia

Refreshments Break 11:00-11:10

11:10-11:40	**Title: Global and national air quality variations based on air quality index (AQI) associated with the COVID-19 lockdown measures** **Aytac Perihan AKAN,** Environmental Engineering Department, Hacettepe University, Ankara, Çankaya, Turkey
11:40-12:10	**Title: "Aquaponic. Present and future".** **Dr. Panagiotis Berillis, S**chool of Agricultural Sciences University of Thessaly, Hellas (Greece)
12:10-12:40	**Title: A Scientific Story from Humanities: Climate Change and Its Impacts in History based on the Archives of Societies** **Dr. Qing Pei,** Department of Department of Social Sciences, Education University of Hong Kong, Hong Kong
12:40-13:10	**Title: How High Temperature Affects Vegetable Bioactive Compounds and Nutritional Value: Example of Broccoli** **Dr. Ivana Šola, Assist. Prof.** Department of Biology, Faculty of Science, University of Zagreb, Zagreb, Croatia.

Lunch Break 13:10-14:00

14:00-14:30	**Title: Reconstruction of average daily flows by a flow ratio method in the Sanaga watershed in Cameroon** **Noudja Terturin,** Department of Earth Sciences, Faculty of Sciences, The University of Yaoundé I, P.O.Box 812 Yaoundé, Cameroon
14:30-15:00	**Title: Tube Wells Pouring of Rare Gas in Rocks Of Vindhyan Super Group Around Sagar, South Ganga Basin, Bundelkhand Region M.P. India.** **Prof. Arun K Shandilya, D**eptt.of Applied Geology, Dr.HSG University, SAGAR (M.P.), INDIA.

Tea and Refreshments Break 15:00-15:10

15:10-15:30	**Title: The Effects of ICT and FDI on CO2 emissions in China** **Fangyuan Chi,** School of Economics and Management, Northeast Normal University, Changchun, Jilin, China
15:30-15:50	**Title: Air pollution, Climate Change and Public Health: A Study of Kathmandu Valley** **Dr. Subash Khadka,** Department of Pollution, ATTF Nepal/Tribhuvan University, Kathmandu, Bagmati, Nepal
15:50-16:10	**Title: Evaluating the Topsoil and Subsoil Physical Quality Using Relative Bulk Density in Urmia Plain** **Hossein Asgarzadeh,** Department of Soil Science, College of Agriculture, Urmia University, Iran

Session Wrap 16:10 16:20

Closing Ceremony 16:20-16:40

Note: For Virtual sessions on October 25, 2022, the participants are requested to follow central european summer time

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October 24-25, 2022 | Valencia, Spain

KEYNOTE PRESENTATIONS | DAY 1

Roman Maciej Kalina[1]

[1]Independent Scientist/Piwniczna-Zdrój, Poland

The Environment and the Earth do not have to kill in a banal way – the fall

I argue that in public debate lacks the courage to clearly separate responsibility for fulfilling the social mission of science. If I am wrong (i.e. it's not necessary), then I have wasted 50 years of my adult life exploring (in a scientific and didactic sense) the problem of SFI that has been allegedly unsolvable for thousands of years. SFI is an abbreviation of the phenomenon of the susceptibility of the body injuries during a fall – although it is neither a disease nor a pandemic, applies to everyone throughout ontogenesis. The two phenomena taken together, the inevitability of a fall and the organic basis of SFI (limited resistance of soft and hard tissues to the effects of a collision) will be a growing public health problem for the aging population of Planet Earth – the number of premature deaths (695 771 annually) and people years lived with a disability (19 252 699). Therefore, it is incomprehensible to ignore the recommendations of science (no common implementations): empirically proven methods to safely diagnose degree of SFI and radically reduce the effects of unintentional falls. In fact, making people immune to the phenomenon of SFI that is highly destructive to health and life. Since the truth is on my side, then the entities responsible for giving an unequivocal answer are those charged with the obligation to implement in various spheres of public life scientific achievements of global significance – without excluding any human being. The question is seemingly simple – when will the breakthrough occur?

Biography:

Full Professor Roman Maciej Kalina is the founder of innovative agonology (applied science, dedicated to evidence-based complementary cognitive-behavioural: promotion, prevention and therapy of all dimensions of health, and ennoblement of activities enhancing the ability to survive). He showed (with promoted PhD and PT students) that age, gender, physical fitness, and health (limb amputations, blindness and eye disorders, morbid obesity, intellectual disability etc.) do not limit the effective learning of safe falls. Since 2005 founder & editor-in-chief journal 'Archives of Budo' and indexed by WoS Core Collection, from V.1 2005, focus on Sports Science & Medicine. Awarded Grand Officer by CISM.

Urszula Bronisz[1]

Institute of Socio-Economic Geography and Spatial Management, Faculty of Earth Sciences and Spatial Management, Maria Curie-Skłodowska University, Lublin, Poland

The role of climate proactivity in improving the competitiveness of European regions

With the advancing climate change, the paradigm of competitiveness is shifting. The limitations related to climate change are an important factor for the development opportunities and for achieving and maintaining a competitive advantage (WEF, 2020). It is therefore necessary to perceive the environmental factor as a driving force of regional competitiveness, while emphasizing the region's adaptive and proactive activities in terms of adaptation to the inevitable, human-induced climate changes (Karman et al., 2021). Climate proactivity is considered to be a response strategy to anticipate and deal with impacts that cannot be avoided in different climate change scenarios. Mitigating the negative effects of climate change is also expected to improve the competitiveness of regional units. The study attempts to define regional climate proactivity by means of a set of various variables concerning institutional (e.g. climate policy, environmental protection expenditure), economic (e.g. intensity of economic emissions, eco-innovation, green market) and social (e.g. pro-ecological awareness, attitudes pro-ecological) factors. EU regions have been grouped according to their level of climate proactivity. This made it possible to show the regional differentiation in terms of climate proactivity and to distinguish several groups of regions according to their level of climate proactivity. The outcomes of the climate proactivity were compared with the results of regional competitiveness. This allowed to evaluate the importance of the climate proactivity as a factor improving the regional competitiveness in Europe.

Biography:

Karman, A., Miszczuk, A., Bronisz, U., (2021). Regional Climate Change Competitiveness—Modelling Approach. Energies, MDPI 14 (12), 1-17.

Schwab, K., Zahidi S. (2020). The Global Competitiveness Report Special Edition 2020: How Countries are Performing on the Road to Recovery, World Economic Forum.

Yi Huang[1], Qing Luo[3], and Xue Tang[2]

[1]State Key Laboratory of Geohazard Prevention and Geoenvironment Protection, Chengdu University of Technology, Chengdu 610059, Sichuan, China

[2]College of Ecology and Environment, Chengdu University of Technology, Chengdu, China

[3]College of Geosciences, Chengdu University of Technology, Chengdu 610059, Sichuan, China

Trace metals bioreduction and response of bacterial communities in soils near a smelting plant

Soil contamination with multiple heavy metals has always been a pressing issue, but little attention has been given to V and Cr and their chemical fractions' impacts on microorganisms because Cr2O3 usually occurs as an associated mineral in vanadium mines. To investigate this issue, samples (N1-N6) less affected by anthropogenic activities were selected for microbial analysis. The area near the refinery was heavily contaminated according to the PLI (pollution load index). Actinobacteriota, Proteobacteria, and Chloroflexi were the dominant phyla in the soil. The diversity of bacteria was positively influenced by V and Cr and negatively influenced by pH, while the abundance was positively correlated with soil nutrients. Interestingly, the influence of heavy metals in the residual fraction on the microbial community structure and functional metabolism was higher than that in the oxidizable fraction, which may be due to the relatively low heavy metal valence of the oxidizable fraction, suggesting that low valence binding forms of multivalence elements have little effect on microorganisms in the soil. Ultimately, two strains with great efficiency in reducing V and Cr were screened, and co-occurrence network characteristics with significant positive interactions suggested that Bacillus can coordinate community structure in the same niche. This research will help to explore the bioavailability of heavy metals and further achieve the bioremediation of heavy metal contamination in soil.

Biography:

Yi Huang is a Professor in College of Geosciences at Chengdu University of Technology, China. She is a Principal Investigator at Mining Area Environment, State Key Laboratory of Geohazard Prevention and Geoenvironment Protection (SKLGP). She obtained her PhD in 2007 from Chengdu University of Technology. She did her postdoctoral research at Chengdu University of Technology. Her main research areas are studies on the migration and transformation of trace metals in soil, water, air and other environmental media near the earth surface, stable isotope geochemistry, as well as the heavy metal pollution prevention and control techniques.

Rafaela Cardoso
Instituto Superior Técnico, University of Lisbon, Portugal

BIOCEMENTATION OF SOILS, A SUSTAINABLE SOIL IMPROVEMENT TECHNIQUE

Biocementation, or Microbially Induced Calcite Precipitation, MICP, consists in using non-pathogenic bacteria to produce calcium carbonate (biocement). This biocement clogs the soil pores and bonds its grains, and for this reason the soil properties change with the treatment. This can be a sustainable way to replace the application of hydraulic binders such as Portland cement, therefore reducing carbon footprint. Several are the applications of the treatment, such as soil strengthening and soil improvement for foundations, prevention of internal erosion in earth dams, and resistance to erosion. The main experience on this technique is being earned in laboratorial tests, where bacteria species and dosages to use are optimized and treatment protocols are defined, but there are already some large scale and field tests showing the viability of this technique, which is being already explored by some companies. Laboratorial tests continue to be fundamental for the field application of this technique, to study durability, improve the efficiency of the treatment, define quality control protocols and provide data to calibrate design tools. The use of experimental tests to provide data directly related with field application is explored in this presentation, after a brief introduction to biocementation, challenges, advantages and limitations.

Biography:

PhD in Civil Engineering, Associate Professor with Habilitation at Instituto Superior Técnico (IST), Lisbon University, Portugal. Has 26 papers in international ISI/Scopus journals, 4 book chapters in international publications and more than 50 international conference papers (Scopus h_index=13). Invited for 16 lectures (4 national and 12 international). PI of 3 National Research Projects (2 ongoing) and member of several national research projects. Participation in several consultancy projects for companies. Main research interests are unsaturated Soils and soil-atmosphere interaction, structured soils, artificially cemented soils, biocementation, coupled hydro-mechanical, electro-hydro-mechanical and chemo-hydro-mechanical behaviour of clayey soils.

Dan Zhou[1], Mengmeng Liang[2], and Yi Huang[3]

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[2]College of Ecology and Environment, Chengdu University of Technology, Chengdu, China
[3]College of Ecology and Environment, Chengdu University of Technology, Chengdu, China

Reduction mechanisms of V5+ by vanadium-reducing bacteria in aqueous environments: Role of different molecular weight fractionated extracellular polymeric substances

Extracellular polymeric substances (EPS) are high-molecular polymers secreted by microbes and play essential roles in metallic biogeochemical cycling. Previous studies demonstrated the reducing capacity of the functional groups on EPS for metal reduction. However, the roles of different EPS components in vanadium speciation and their responsible reducing substances for vanadium reduction are still unknown. In this study, the EPS of Bacillus sp. PFYN01 was fractionated via ultrafiltration into six components with different kDa (EPS>100, EPS100-50, EPS50-30, EPS30-10, EPS10-3, and EPS<3). Batch reduction experiments of the intact cells, EPS-free cells, pristine and fractionated EPS with V5+ were conducted and characterized. The results demonstrated that the extracellular reduction of V5+ into V4+ by EPS was the major reduction process. C-N, N-H, C-O, C=O, and P=O of the pristine EPS were involved in the extracellular reduction. The intracellular reduction was via translocating V5+ into the cells and releasing V4+ by the intracellular reductases. The reducing capacity of the fractionated EPS followed a sequence of EPS<3 > EPS10-3 > EPS50-30 > EPS100-50 > EPS30-10 > EPS>100. The small molecules of fulvic acid-like substances and amino acids were responsible for the high reducing capacity of EPS<3. EPS>100 had the lowest reducing capacity due to its macromolecular structure decreasing the exposure of the reactive sites. In addition to reduction, those intermediate EPS components may also have supporting functions, such as connecting protein skeletons and increasing the specific surface area of EPS. Therefore, the diverse effects of the EPS components cannot be neglected in vanadium biogeochemical cycling.

Biography:

Dr. Dan Zhou is an associate professor at the College of Ecology and Environment, Chengdu University of Technology. He acquired his BSc, MSc, and PhD degree in Anhui University (2010, China), Sun Yat-sen University (2013, China), and Technical University of Berlin (2018, Germany), respectively. His research interests focus on colloidal chemistry, emerging nanoparticles, metallic biogeochemical cycling, and pollution hydrogeology.

P.A.M. Mourão[1]

[1]Department of Chemistry and Biochemistry, MED-Mediterranean Institute for Agriculture, Environment and Development, University of Évora, Évora, Portugal

Valorisation of agricultural wastes as an approach to a better management

The report published by the United Nations in July 2022 indicates it is expected that the world population will cross the 8 billion barrier this year and it is estimated to reach 8.5 billion by 2030. This scenario leads to an enormous pressure on food systems, in particular, on the agricultural and forest systems. As a direct result of the demands associated to the production, transformation, transport and consumption of food products from the agricultural domain, large amounts of wastes are generated.

This reality, generator of enormous problems as a result of the nature and quantity of the waste and by-products involved, is also a field of opportunities that should be explored. There are essentially two types of wastes, natural and synthetic. Among the natural ones, those of lignocellulosic origin, like branches and barks, are the most promisor, while among the synthetic ones we have essentially plastics. This communication discusses their use as precursors for the production of carbon-based materials with a potential adsorption application in systems involving liquids and gases. This approach is intended as a way of valorising this waste, therefore contributing to a new perspective on how waste, particularly waste of natural origin, can be managed.

The structural and chemical properties, namely, the apparent surface chemistry and chemical nature of the produced adsorbents, will be discussed in detail as the different types of applications, with particular focus on the adsorption of probe molecules (e.g. pesticides) from liquid phase.

Biography:

P.A.M. Mourão is a Researcher (permanent position) from University of Évora, Portugal. He has a Physics and Chemistry graduation, a master in Physics, and a PhD in Chemistry, in the Materials and Surface area. In the last years, he has consolidated his research in the fields of preparation, characterisation, development and application of porous materials, with the focus on the recovery and valorisation of different raw materials and waste, from natural and/or synthetic sources, by its transformation into adsorbents with potential application in the liquid (e.g. dyes, pesticides, pharmaceuticals, metals) and gas phases (e.g. CO2), guided by a circular economy perspective.

Irene DINI
Pharmacy Department, Federico II University of Naples, Italy

The contribution of food chemistry to the world of cosmetics

The use of food supplements to avoid any deficiency and sub-deficiency states of valuable nutrients and to take bioactive molecules which permit the well-being of the skin, nail, and hair care are a new trend in the beauty market. Food supplements are food products able to improve the everyday diet. They are a concentrated source of nutrients, such as minerals and vitamins, or other substances having a nutritional or physiological effect (i.e., amino acids, fibers, essential fatty acids, and extracts of vegetable origin). The food supplements can be sold in single, multi-compound, and pre-dosed forms. The great demand for nutricosmetics products across the world has been driven by consumers who are more attentive than in the past to skin changes (i.e., wrinkles, aging), and hair loss problems due to stress and age, the growth of health costs which have prompted consumers to prevent diseases to avoid treating, and the desire for natural ingredients believed to be safer than synthetic ones. Food chemistry can significantly contribute to the growth of this market not only by supplying nutrients and bioactive molecules obtained from extracts from food, agricultural waste, household, and food chain waste. This attractive new market sector could see food chemists and cosmetic chemicals united in transforming waste into resources for an increasingly circular economy.

Keywords: Nutricosmetic, food supplement; circular economy

Biography:

Irene DINI graduated in Chemistry and Pharmaceutical Technology and completed his Ph.D. at 30 years from the University of Naples Federico II (Italy). She is Food Science Specialist. She is a researcher in Food chemistry. She has served on the board of directors of CIRANAD (Interuniversity Centres of Excellence on food, nutrition, and digestive system). She teaches as Research Professor of: "Food chemistry", "Laboratory of spectroscopic techniques for food analysis," and "Food supplements" at the Federico II University of Naples. She has published more than 50 papers in reputed journals and chapters of scientific and didactic books and served as an editorial board member of internationally reputed journals. Prof. Dini's scientific activity is aimed at studying natural substances. It has mainly developed on four themes:
a) chemical study of primary and secondary metabolites of food interest
b) nutraceutical and nutricosmeceutical study of phytochemicals from food plants
c) development of analytical methods for the dosage of metabolites of food and nutricosmeceutical interest d) study of environmentally friendly agronomic techniques capable of improving the nutraceutical interest of food products.
The results of her studies have been published in the most prestigious food chemistry journals and discussed in national and international conferences as oral communications and posters.

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SPEAKER PRESENTATIONS | DAY 1

Grow-out culture of *Magallanabilineata*: A comparison of growth and survival of wild and hatchery-bred spat

Ma. Junemie Hazel L. Lebata-Ramos
Aquaculture Department, Southeast Asian Fisheries Development Center, Tigbauan, Iloilo 5021, Philippines

Oyster farming is an important industry both in developed and developing countries. The high demand for oysters has caused the overexploitation of natural stocks. This led to dwindling spat fall and unstable production. To sustain the industry and to have a steady supply of oysters, other sources of spat must be explored, and dependence on natural sources minimized. This study compared the growth and survival of wild and hatchery-bred spat of the oyster Magallana bilineata in grow-out culture. Results of the experiment revealed that growth rates of wild and hatchery-bred oysters did not differ significantly at 5.69±0.88 mm shell length (SL) and 8.85±1.07 g body weight (BW) mo-1 and 6.88±1.33 mm SL and 8.26±1.15 g BW mo-1, respectively. Meat yield was almost the same at 16.41±0.57% for wild oysters and 15.59±0.37% for the hatchery-bred ones. The proximate composition of dried whole flesh oyster samples also showed the same amount of crude protein, crude fat, crude fiber, nitrogen-free extract, and ash in wild and hatchery-bred oysters. Moreover, mean survival at harvest did not significantly differ at 85.03±1.09% for wild oysters and 85.31±1.40% for the hatchery-bred ones. The results of this study showed the potential of hatchery-bred oyster spat as seeds for grow-out culture to address the declining number of spat fall in natural oyster beds. Producing the same quality of oysters, it can be inferred that the hatchery-bred spat are just as competent as their wild conspecifics.

Biography:

Ma. Junemie Hazel L. Lebata-Ramos is a Scientist at the Aquaculture Department of the Southeast Asian Fisheries Development Center in Iloilo, Philippines. She earned her Ph.D. in Ocean Sciences at the University of Wales, Bangor, United Kingdom. Her areas of interest include the biology and culture of crustaceans (Scylla spp. and penaeids) and mollusks (abalone, oyster, giant clam), mangrove ecology, and the environmental impacts of aquaculture. She has published papers on these aspects of aquaculture and is currently working on the grow-out culture of abalone using different feeds and culture containers at different water depths.

How can we enhance abiotic stresses tolerance in plants? A physiological approach

Lidia López-Serrano[1,2], Ángeles Calatayud[2], Salvador López-Galarza[3], Edurne Baroja-Fernández[4], Alberto Férez-Gómez[1], Javier Pozueta-Romero[1]

[1]Institute for Mediterranean and Subtropical Horticulture 'La Mayora' (IHSM-UMA-CSIC), Campus de Teatinos, Avda. Louis Pasteur, 49, 29010 Málaga, Spain

[2]Center of Citriculture and Vegetal Production, Department of Horticulture, Valencian Institute of Agriculture Research, CV-315, Km 10.7, 46113 Moncada, Valencia, Spain

[3]Department of Vegetal Production, CVER, Politechnic University of Valencia, Camí de Vera s/n 46022, Valencia, Spain

[4]Instituto de Agrobiotecnología (CSIC/Gobierno de Navarra), Iruñako etorbidea, 123 31192 Mutiloabeti, Nafarroa, Spain

One of the major issues of present global concern is the climate change as a consequence of raising atmospheric CO2 concentration, which causes global warming, drought and soil salinity. They are by far the leading environmental stress factors in agriculture that limit the global productivity of major crops by directly reducing plant potential yield. Thus, it is mandatory to urgently develop new and efficient strategies to minimize the negative effect of the climate change on crop productivity in a sustainable and eco-friendly manner. One of them is based on the use of the graft technique. Grafting enhances drought and salt tolerance and growth of pepper plants through complex mechanisms including enhanced photosynthesis, increased levels of proline, hydrogen peroxide and phenols, reduced abscisic acid levels and better Na+/K+ balance (Lopez-Serrano et al 2017, 2018, 2019, 2020.). Another strategy to overcome the deleterious effect of climate change on crops is based on the use of plant biostimulants. Recent evidence has been provided that soil application of microbial-based biostimulants improves plant growth and yield of pepper plants through mechanisms that promote interactions between plants and beneficial soil microbiota (Baroja-Fernández et al. 2021). In this presentation I will present and discuss main recent advances on crop productivity and stress tolerance promoted by grafting and application of microbial metabolites. In addition, I will identify unanswered questions and offer suggestions for future work.

References

López-Serrano, Lidia; Penella, Consuelo; San Bautista, Alberto; López-Galarza, Salvador; Calatayud, Ángeles. 2017. Physiological changes of pepper accessions in response to salinity and water stress. Spanish Journal of Agricultural Research. 15, pp. 1-10.

López-Serrano, Lidia; Canet-Sanchis, Guillermo; Vuletin-Selak, Gabriela; Penella, Consuelo; San Bautista, Alberto; López-Galarza, Salvador; Calatayud, Ángeles. 2019. Pepper Rootstock and Scion Physiological Responses Under Drought Stress. Frontiers in Plant Science. 10, pp. 1-13.

López-serrano, Lidia; Canet-Sanchis, Guillermo; Vuletin-Selak, Gabriela; Penella, Consuelo; San Bautista, Alberto; López-Galarza, Salvador; Calatayud, Ángeles. 2020. Physiological characterization of a pepper hybrid rootstock designed to cope with salinity stress. Plant Physiology and Biochemistry. pp. 207-219.

López-serrano, Lidia; Calatayud, Ángeles; López-galarza, Salvador; Serrano, Ramón; Bueso, Eduardo. 2021. Uncovering salt tolerance mechanisms in pepper plants: a physiological and transcriptomic approach. BMC Plant Biology. pp. 169.

Baroja-Fernández, E., Almagro, G., Sánchez-López, A.M., Bahaji, A., Gámez-Arcas, S., De Diego, N., Dolezal, K., Muñoz, F.J., Sanz, E.C., Pozueta-Romero, J. (2021) Enhanced yield of pepper plants promoted by soil application of volatiles from fungal cultures is associated with activation of the beneficial soil microbiota. Front. Plant Sci. doi: 10.3389/fpls.2021.752653..

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MCIN/AEI/10.13039/501100011033 and, by the “European Union”. Lidia López-Serrano was beneficiary of a doctoral fellowship (FPI-INIA) associated with the project funded by INIA RTA2017-00030-C02-00 and the European Regional Development Fund (ERDF).

Biography:

Lidia López Serrano is PhD in Agriculture, developed at the Valencian Institute of Agriculture Research and the Polytechnic University of Valencia. During this time she studied the tolerance mechanisms of grafted pepper subjected to water and salt stress. She also collaborated with the University of Viterbo (Italy) and the Institute for Adriatic Crops and Karst Reclamation (Croatia) to investigate the tolerance mechanisms of grafted pepper under suboptimal calcium conditions and Bemisia tabaci infection. Actually, she is working in the biostimulation group of the Institute for Mediterranean and Subtropical Horticulture, in collaboration with the Agrobiotecnology Institute (Navarra, Spain).

Effect of halogenated compounds on the anaerobic digestion of marine seaweed and resulting products

Lydia Rachbauer[1], Michael R. Schuppenhauer[2], Marion L. Russell[3], Randy L. Maddalena[3], and Steven W. Singer[1,2]

[1]Deconstruction Division, Lawrence Berkeley National Lab, Berkeley, CA, USA
[2]Joint Bioenergy Institute, Emeryville, CA, USA
[3]Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Lab, Berkeley, CA, USA

Almost complete inhibition of methane production in livestock rumen by 99% has been reported for Asparagopsis taxiformis, a type of red seaweed. The biochemical mechanism behind this inhibition is thought to be associated with secondary metabolites, especially bromoforms and dibromochloromethane. These halogenated compounds serve as a natural defense mechanism against herbivores and marine microbes and were identified as the most abundant metabolites for Asparagopsis seaweeds. However, other marine seaweeds are not known to specifically inhibit methanogenic archaea.

Dietary seaweed of Kyphosis species, a type of herbivorous reef fish, such as Agardhiella and Sargassum contain similar secondary metabolites at lower concentrations and thus might contribute to the absence of methanogenic Archaea in the gut communities. The low abundance of archaeal 16S sequences recovered from Kyphosids' gut samples is consistent with the absence of methane formation during anaerobic degradation of seaweed for these gut communities. Interestingly, the initial steps of anaerobic degradation of organic matter towards volatile fatty acids were not affected by these secondary metabolites.

This study will report on how various marine seaweed species affect the digestion efficiency and product formation by two different anaerobic sludges: a) a terrestrial sludge, and b) an adapted consortium of marine origin. A comparison of mcrA gene sequences for both inocula will shed light on why the terrestrial sludge could overcome an initial inhibition even at 100x bromoforms concentrations, whereas no methane formation was observed for the adapted marine consortium although methanogenesis was not negatively impacted for either sludge at low bromoforms content.

Biography:

Lydia Rachbauer is a Postdoctoral Researcher at the Lawrence Berkeley National Laboratory in Berkeley, California, as part of the Deconstruction Division at the Joint Bioenergy Institute.

She holds a master's degree in Biotechnology and got her Ph.D. from the University of Natural Resources and Life Sciences, Vienna, in the field of microbial gas conversion concepts with a focus on anaerobic mixed consortia. Currently, Lydia works on the microbial mechanisms for deconstruction and conversion of the complex polysaccharide structures in marine seaweed.

Microneutralization assay for the detection of neutralizing antibodies against SARS-CoV-2

Enrique Noa Romero, Juliet María Enriquez Puertas; María Teresa Pérez Guevara; Anamary Suárez Batista; Marta Dubed Echevarría; Nibaldo Luis González Sosa; Dayamí Martín Alfonso; Yanin Hernández Rodríguez; Greter Susana Pérez Bartutis; Mireida Rodríguez Acosta; Danay Carrillo Valdés; Yanicet Rosell la Rosa; Otto Cruz Sui

AIDS Research Laboratory / Mayabeque, Cuba

The epidemiological situation created by SARS-CoV-2 imposed the challenge of developing vaccines as one of the strategies to control the COVID-19 pandemic. The viral neutralization assay is considered the most sensitive and specific serological test capable of evaluating and detecting neutralizing antibodies developed by vaccine candidates. In this work, the standardization of a microneutralization assay for the detection of neutralizing antibodies against SARS-CoV-2 is presented. We developed a microneutralization assay using the D614G strain of SARS-CoV-2, GISAID: EPI_ISL_7495115|2020-06-05. We evaluated the performance of this assay using different panels of sera from subjects convalescing from COVID-19 and samples the patients with other infectious agents (retrovirus, hepatitis virus and respiratory diseases); as well as serum samples from animals included in the different preclinical study protocols of Cuban vaccine candidates. The neutralization assay was correlated with the Umelisa SARS-CoV-2 anti-RBD assay. The ability of the assay to detect neutralizing antibodies against SARS-CoV-2 variants of concern was determined. It was possible to standardize a microneutralization method with adequate performance, which has allowed the evaluation of neutralizing antibody titers in animal and human samples involved in the studies of Cuban vaccine candidates. The results of the correlation between the neutralization assay and the Umelisa SARS-CoV-2 anti-RBD assay showed an adequate association. A microneutralization system was standardized that has made it possible to estimate the neutralizing antibody titers of the subjects involved in the clinical trials of Cuban vaccine against the different variants of SARS-CoV-2, including those of concern.

Biography:

Limonta-Fernández M, et al. The SARS-CoV-2 receptor-binding domain expressed in Pichia pastoris as a candidate vaccine antigen. New BIOTECHNOLOGY 2022; 72: 11–21.

Toledo-Romaní ME, et al. Safety and immunogenicity of anti-SARS CoV-2 vaccine SOBERANA 02 in homologous or heterologous scheme: Open label phase I and phase IIa clinical trials. Vaccine 2022; 40: 4220–4230

Lemos-Perez G, et al. Elevated Antibody Titers in Abdala Vaccinees Evaluated by Elecsys® Anti-SARS-Cov-2 S Highly Correlate with UMELISA SARS-Cov-2 ANTI RBD, ACE-2 Binding Inhibition and Viral Neutralization Assays. Journal of Biotechnology and Biomedicine 2022; 5: 151-157

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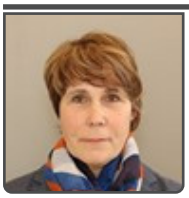
POSTER PRESENTATIONS | DAY 1



Microbiological characteristics of the deer meat during various storage conditions

Anda Valdovska[1, 2], Liga Proskina[3]

[1] Latvia University of Life Sciences and Technologies, Faculty of Veterinary Medicine, Jelgava, Latvia, Anda.
[2]Latvia University of Life Sciences and Technologies, Research Laboratory of Biotechnology, Jelgava, Latvia,
[3]Latvia University of Life Sciences and Technologies, Faculty of Economics and Social Development, Jelgava, Latvia

Dietary properties of deer meat, low fat content and mild taste are attracting more and more people around the world. The food chain for meat from wild game differs from that of farm animals and conditions at primary production level are poorly standardized which may explain the wide range in bacterial count. However, the use of deer meat in the production of high-quality foods makes it necessary to ensure high standards of microbiological safety for meat throughout the full storage period. The aim of this work was assessment of the microbiological characteristics of meat of the captive deer during storage. Samples for microbiological testing of deer meat were taken from the musculature of the hind legs. The study showed pH values of the deer meat in range from 5.47 (at 1st day) to 4.9 to 5.46 – at 45th storage day. The microbial loads in deer meat are increasing rapidly when the meat is washed before vacuum packaging and when packaging is delayed to more than one day. At the 45th storage day average counts (cfu/g) of PVC packed deer meat were 7.61 x 106 (total aerobic counts (TAC), determined at 30 degrees C) and 1.14 x 106 (psychrotrophs), but 2.39 x 105 (TAC) and 1.4 x 105 (psychrotrophs) of packed deer meat with reduced oxygen (CO2 and N2, respect.,70/30). In tested samples no organisms of the group Escherichia coli, Staphylococcus spp., Streptococcus spp. and Clostridium spp. were founded. Acknowledgement: the research funding -EU EAFRD Project No. 19-00-A01612-000002.

Biography:

Anda Valdovska is the director of Scientific laboratory of Biotechnology and professor in the Faculty of Veterinary Medicine. Valdovska is the author and co-author of 90 research papers, incl. 42 indexed by Scopus (h-index = 7) and co-author of six patents. Research areas are related to bacterial contaminants, their antimicrobial resistance and reduction possibilities.

Liga Proskina researcher, assistant professor is the author and co-author of 91 research papers, incl. 20 indexed by Scopus (h-index=3), one monograph and a co-author of three national patents. Līga Proskina has researched the market aspects of non-traditional agricultural products, consumer demand in local food markets.

The Generation of Neurosphere from Bone Marrow Mesenchymal Stem Cells

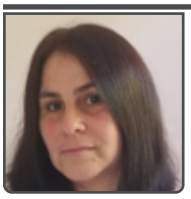
Farhaneh Anbarestani[1]

[1]Department of Science, Science and Research Branch IAU, Tehran, Iran

In this study, we have reported that rat MSCs in long-term culture shows spontaneous transformation to neurosphere. These transformations are present without supplement of growth factors or specific chemicals, and express dopaminergic neural genes such as TH and Nurr1. Our study demonstrates that MSCs have the ability to differentiate into neural cells spontaneously in long term culture, and suggests an appropriate cellular source for neurological disease treatment. Key words: Bone Marrow Mesenchymal Stem Cells, Long-term Culture, Spontaneous differentiation, Neurosphere.

Biography:

After fullfilment of my BS in Cell and Molecular Biology in May 2019, I started my MS in the same filed and at the same year. I have started cooperating with Resalat Lab and Pathology since then.



Protection of Cuban vaccines against SARS CoV-2 variants of concern in the vaccinated population

Juliet María Enriquez Puertas[1]; Enrique Noa Romero[1]; Yanin Hernández Rodríguez[1]; Danay Carrillo Valdés[1]; Yanicet Rosel de la Rosa[1]; SOBERANA Research Group[2]; ABDALA Research Group[3]

[1]AIDS Research Laboratory / Mayabeque, Cuba
[2]Finlay Institute of Vaccines/Havana, Cuba
[3]Center for Genetic Engineering and Biotechnology/Havana, Cuba

The appearance of multiple worrying variants of SARS-COV-2 harboring mutations in the spike protein, the main target of neutralizing antibodies, has raised questions about the possibility of reducing the protective efficacy of humoral responses elicited by vaccination. The objective of this work is to determine the neutralizing capacity of antibodies against SARS-COV-2 variants of concern in individuals immunized with the Cuban vaccines SOBERANA® and ABDALA®. To evaluate the neutralizing activity of the antibodies generated by the Cuban vaccines against the SARS-COV-2 variants, the microneutralization method with the live virus standardized in the AIDS Research Laboratory was used. The levels of neutralizing antibodies in serum of individuals immunized with the Cuban vaccines against SARS-COV-2 variants: B.1.351 (beta) and B.1.617.2 (delta) and Omicron BA1.21K; which were compared with the neutralizing antibodies with the D614G strain, applying the Friedman statistician and Dunn's multiple comparison test. The highest percentages of neutralization were achieved against the B.1.617.2 and BA.1 variant, without significant differences with D614G strain. A marked reduction in mean beta variant viral neutralization titer relative to D614G was observed in sera from subjects immunized with two vaccines. Comparison with the D614G variant highlights a similar neutralizing potential against B.1.617.2 and BA.1 variant, while B.1.351 showed greater resistance to neutralization in sera from vaccinated subjects. These results demonstrate that the antibodies generated by the Cuban vaccines are capable of neutralizing the concern variants of SARS-COV-2.

Biography:

Chang Monteagudo A, et al. A single dose of SARS-CoV-2 FINLAY-FR-1A vaccine enhances neutralization response in COVID-19 convalescents, with a very good safety profile: An open-label phase 1 clinical trial. The Lancet Regional Health-Americas 2021 [citado 26 de diciembre 2021]; 4: 100079. Disponible en: https://www.sciencedirect.com/science/article/pii/S2667193X21000752.

Toledo-Romaní ME, et al. Safety and immunogenicity of anti-SARS CoV-2 vaccine SOBERANA 02 in homologous or heterologous scheme: Open label phase I and phase IIa clinical trials. Vaccine 2022; 40: 4220–4230

Limonta-Fernández M, et al. The SARS-CoV-2 receptor-binding domain expressed in Pichia pastoris as a candidate vaccine antigen. New BIOTECHNOLOGY 2022; 72: 11–21.

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KEYNOTE PRESENTATIONS | DAY 2

Kamilla Pawłowska[1]

[1]Department of Palaeoenvironmental Research, Institute of Geology, Adam Mickiewicz University in Poznań, Poznań, Poland

Tracing environmental changes in the past using faunal and geological data

Many aspects of the environment are approached in research, including the natural environment, the social environment, the depositional environment, and others. Understanding environmental conditions is key to understanding many processes which, with regard to animals, involve the presence of animal populations, their adaptations, biodiversity, and extinction.

This paper is intended to demonstrate the use of faunal and geological resources from paleontological and prehistoric sites to trace environmental conditions and changes in the past. One of the key taxa discussed will be the woolly rhinoceros (grant from the National Science Center, Poland, 2021/43/B/ST10/00362 awarded to Kamilla Pawłowska), a major herbivore of the Pleistocene environment.

Factors affecting environmental change—which may include climate change, human influence, and their interaction—will also be considered. The latter may entail social, cultural, and economic transformations, as best seen in the first proto-urban settlements. This wide and comprehensive perspective on the environment will a provide contextual framing for much of the multidisciplinary research.

Biography:

Kamilla Pawłowska is currently an associate professor at the University of Adam Mickiewicz, Poland, where she cocreates paleoenvironmental research. Her research interests include Paleolithic Europe, Neolithic Near East, human–animal relations, the relationship between climate and cultural change, the study of disease in past animal populations, worked bone study, and taphonomic studies, including depositional practices. Pawłowska is an enthusiastic advocate of contextual zooarchaeology and paleontology, which she uses in her research. She has just begun research on unraveling the chronological, geographical, and taphonomic complexities of the occurrence of the woolly rhinoceros in the Pleistocene contexts of Poland (WOOLRHINOPOLI) and Europe.

Tanja Trošić Lesar[1] and Anita Filipčić[2]

[1]Croatian Meteorological and Hydrological Service, Zagreb,Croatia

[2]Department of Geography, Faculty of Science, Zagreb,Croatia

Simulations of the concentrations of pollutant particles PM10 and PM2.5 for the sea breeze

The statistical prediction models are rarely focusing on pollutant concentrations modelling in hourly values, as well as their application in local winds. In this case a multiple linear regression (MLR) model is applied for the hourly concentrations simulation of pollution with PM2.5 and PM10 particles for sea breeze cases in Split, Croatia. A novel predictor characteristic for the daily and nightly part of the coastal circulation is found to be significant for both PM10 and PM2.5 particles for the sea breeze. The hourly simulations show very good agreement with an agreement index of IA=0.9 during the sea breeze and IA=0.8 for the land breeze. Numerical simulation with the Hybrid Single-Particle Lagrangian Integrated Trajectory model (HYSPLIT) from four point sources showed the main source of pollution in Split for the extreme case with the concentration of PM10 particles that reached the limit value for human health.

Biography:

I was born in Zagreb on 13 August 1978, finished high school in Split, Croatia in 1996, and graduated in physics, majoring in geophysics in 2002 at the Faculty of Science in Zagreb. I was employed at the Ruđer Bošković Institute, Zagreb, Croatia, from 2003 to 2007 and at the Croatian Meteorological and Hydrological Service in Zagreb, Croatia, since 2007. Master's degree in Atmospheric and marine physics was in 2007, and doctorate in interdisciplinary sciences, Physical Geography in 2012 at the Faculty of Science, Zagreb, Croatia. I received the Young Science travel award at the EUMETSAT conference in 2005.

Aytac Perihan AKAN
Environmental Engineering Department, Hacettepe University, Ankara, Çankaya, Turkey

Global and national air quality variations based on air quality index (AQI) associated with the COVID-19 lockdown measures

Countries have taken many measures from time to time, especially on a national scale, to reduce the spread of the COVID-19 pandemic, which caused the death of 6,358.899 people globally until July 15, 2022, according to the data of the World Health Organization. Full or partial lockdown measures implemented by the decision-makers of countries usually contain severe restrictions or suspensions in public transport, including public transit, trains, airlines and major highways, and the closure of non-essential companies containing manufacturing facilities, such as iron-steel, cement factories known as significant contributors to the CO2 concentrations in the atmosphere. Previous studies have shown that restrictions on activities that contribute significantly to air pollution improve air quality. In this regard, the current study aims to compare the air quality index data, which gives an idea about whether the air quality of a region can be accepted in terms of public health, considering 56 countries from 6 continents with an average data of 2018 and 2019 representing the pre-pandemic period and the data for the period of pandemic 2020 and 2021, on a national and global scale to explain how air quality has changed with lockdown measures. The results showed that the maximum decrease in AQI values among the countries studied was 223% and 149% for 2020 and 2021 compared with the pre-pandemic period, respectively, in Puerto Rico from the North American continent. It is expected that this study will pay the way for understanding the importance of the measures required for combating climate change.

Biography:

Aytac Perihan Akan obtained her BSc, MSc and Ph.D. in Environmental Engineering from Trakya, Bogazici, and Hacettepe Universities, Turkey, in 2008, 2014 and 2019 respectively. She worked as visiting Ph.D. student in the Materials Engineering Department at Universite Catholique de Louvain, Belgium, in 2018 and in the Chemical Engineering Department at the New Jersey Institute of Technology, USA, between 2018 and 2019. She was a postdoctoral researcher in Chemical Engineering at Middle East Technical University, Turkey, 2020-2021. She is a teaching assistant in Environmental Engineering at Hacettepe University, working on air pollution control, life cycle assessment, and renewable energy systems.

Dr. Panagiotis Berillis
Associate Professor
Microscopy and Image Analysis in Histology and in Aquatic Organisms
Department of Ichthyology and Aquatic Environment
School of Agricultural Sciences University of Thessaly, Hellas (Greece)

Aquaponic. Present and future

Agricultural production systems are being affected by unsustainable management practices and changing climatic conditions. Therefore, research on alternative food production methods for reducing the environmental load by using innovative and alternative food production systems is necessary. Aquaponics combines the culture of aquatic animals and the cultivation of plants in recirculating systems, integrating aquaculture and hydroponics in a soil-less system. An aquaponic system consists in the plants hydroponic tank, the fish tank and the filter. Toxic ammonia produced by unutilized feed, fish faeces and excreted urea is oxidized by nitrifying bacteria into vital and usable nitrate for plants. Plants absorb nitrate and other nutrients, permitting purified water to recirculate back to fish tanks. Aquaponics use less than 10% of the water used in conventional farming and promotes an innovating system as a solution to possible environmental impacts of aquaculture, shortage of drinking water, climate change, loss of soil fertility and biodiversity. Aquaponic system vitality and prosperity is based on fish, plant and bacterial interactions and welfare. The interrelatedness between these are highly complex and are in direct association with water quality. Aquaponics food products are chemical-free. In aquaponics however, nutrients which are important for plant growth are often lower than those used in hydroponics and several studies have shown that the addition of fertilizers in aquaponics, such as potassium and iron favors plant growth and yield. Vegetables, herbs, flowers, and small trees have been successfully used in aquaponics systems but aquaponics in the Mediterranean region is still in an embryonic stage.

Biography:

Panagiotis Berillis is Associate Professor at the Department of Ichthyology & Aquatic Environment, University of Thessaly. His research interests are focused on aquaculture, aquaponics, histology/histopathology of aquatic organism, collagen and tissue mechanical properties. He has published more than 100 research articles, reviews, book chapters or conference. He is also the author of the 4 books. He is Chief Editor in 2 international scientific journals and member of the Editorial Board in another 3. He is member of the Hellenic Technology Platform for Aquaculture and of the Hellenic Society for Biological Sciences.

Dr. Qing Pei

[1]Department of Department of Social Sciences, Education University of Hong Kong, Hong Kong

A Scientific Story from Humanities: Climate Change and Its Impacts in History based on the Archives of Societies

Coevolution between human and climate systems has always been one of most attractive themes in academia. Climate history has firmly justified its academic value to understand a long-term connection between climate change and human society in the past, which develops an important field “History of Climate and Society”. Climate history comprises two fundamental themes: the reconstruction of past climate and weather from “archives of societies” (historical climatology), and historical societies under climate change. This multidisciplinary field using archives of societies—normally written records and artefacts—incorporates qualitative and quantitative analyses and methods of the humanities, social sciences, and natural sciences. As a region with rich archives, the practice of climate history in China has provided substantial support to initiate and promote the research on History of Climate and Society. The findings of climate history within Chinese contexts have theoretically and empirically contributed to the understandings on global climate–society interactions. The scientific discoveries from climate history reminds us of the need to link sciences with humanities closer in both theory and methodology, which should be regarded as a new direction in scholarship to look for relevant historical references to meet future social and environmental challenges.

Biography:

Dr. Qing Pei is an Associate Professor in the Department of Social Sciences, Education University of Hong Kong. He has taken several research positions globally, including Fellow of Hughes Hall at the Cambridge University, Swiss National Science Foundation Fellow in Switzerland, Rachel Carson Fellow in Germany, and Fellow of Global Labor Organization. His research interests include historical geography, and climate history. He has published one monograph, and some of his research papers appeared in the flagship journals in geography, social sciences or related disciplines, such as Nature, PNAS, Global Ecology and Biogeography, and Annals of the Association of American Geographers.

Dr. Ivana Šola, Assist. Prof.
Department of Biology, Faculty of Science, University of Zagreb, Zagreb, Croatia

How High Temperature Affects Vegetable Bioactive Compounds and Nutritional Value: Example of Broccoli

The world community is making great efforts to understand the current and potential impacts of global warming on plants and animals. Not only because of the negative effects on crop production and therefore on food supply, but also because of changes in the nutritional value of vegetables that occur as a result of the temperature increase. Plants challenged with high temperature undergo many adaptive mechanisms at molecular levels to keep normal physiology function. They can adapt to different temperatures by changing their transcriptome, proteome and metabolome, or even by activating cell death mechanisms. Such adaptability is due to their intensive shifts in biochemical pathways, which, as a consequence, can significantly change their bioactivity as well. Changes like these could have significant outcome on the plant nutritional value and present serious challenges for global food security. Because of that the objective of our work is to investigate the consequences of environmental increased temperature on vegetable nutritional value. We are trying to assign correlations between temperature shift and plant biochemical traits employing targeted specific metabolomics approach, statistical data analyses and modelling in order to construct a model showing a tentative pattern of environment temperature effect on plant bioactive compounds. As a model plant organism we use broccoli (Brassica oleracea L. convar. botrytis (L.) Alef. Var. cymosa Duch.) in different stage of development.

Biography:

Dr. Ivana Šola, Assist. Prof. works in the Laboratory for Phytochemistry, Faculty of Science. Her main scientific interest is plant specialized metabolism plasticity (bioavailability and bioactivity changes, use of specialized metabolites as indicators of stress in the environment, specific metabolites boosting to produce a value-added plant food, screening of specialized metabolism changes for prediction models). So far, she has published 25 scientific papers. At the moment, she is a leader of two scientific projects, and a collaborator on another two. She teaches plant anatomy, molecular biology of plants, plant bioactive substances, plants in phytotherapy and basics of phytochemistry.

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Reconstruction of average daily flows by a flow ratio method in the Sanaga watershed in Cameroon.

Terturin Noudja [a*], Christophe Wonkam[b], Alain Fouépé Takounjou[d], Romaric Victorien Ntchantcho[d], Donald Hermann Fossi[d], Guy Lahlou Djiken[c], Henri Zobo Mbele[a], Joseph Mvondo Ondoa[a], Mvondo Ondoa Joseph[a]

[a]Department of Earth Sciences, Faculty of Sciences, The University of Yaoundé I, P.O.Box 812 Yaoundé, Cameroon.
[b]Department of Earth Sciences, Faculty of Sciences, The University of Douala, P.O.Box 24157 Douala, Cameroon.
[c]Department of Mathematics and Computer Science , Faculty of Sciences, The University of Douala, P.O.Box 24157 Douala, Cameroon.
[d]Hydrological Research Center, P.O.Box 4110 Yaoundé, Cameroon.
[d]Image Processing Laboratory, Institute of Geological and Mining Research, P.O.Box 4110 Yaoundé-Cameroon

The problem of insufficient hydrometric observation data is recurrent in the banking of several countries in sub-Saharan Africa. These countries with sparse collection networks are irregularly well monitored due to lack of financial means. From there, gaps develop in the chronological series that we record. These voids prevent their exploitation in hydroelectric and agrosilvopastoral energy production activities and require reconstitution. This is what the large watershed of the Sanaga knows, the economic importance of which is no longer to be demonstrated. Our approach to replenishment is a multiple-choice continuous improvement system. It is based solely on the flow ratios for the determination of a better coefficient of restitution for fillings and extension of the chronological series. This new embryonic method represents the main objective of this study. It is carried out over eleven years between eight hydrometric stations (Edéa – Nachtigal -Nanga Eboko – Tibati – Goura – Bafoussam – Magba -Bétaré oya). The Nash Sutcliffe criterion of effectiveness is the main element of the validation of our approach. In the natural period 1959 to 1969, each time over 77 years, the numbers of good simulations are: 30-34-33-43-35-28-39-39-37-37-37-35.

Keywords: Watershed, Sanaga, System, improvement, Continuous, Nash Sutcliffe.

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Tube Wells Pouring of Rare Gas in Rocks Of Vindhyan Super Group Around Sagar, South Ganga Basin, Bundelkhand Region M.P. India

Arun K Shandilya & Anupam Shandilya
Deptt.of Applied Geology, Dr.HSG University, SAGAR (M.P.), INDIA.

The tube wells are pouring the of the Helium gas& petroleum gas in the rocks of the Vindhyan Super Group around Sagar, South Ganga Basin, Bundel khand region, M.P. is carried out in the detail with joint collaboration of Deptt. of Applied Geology and ONGC Energy Centre, Ahmadabad. As Author has already reported the Discovery og Helium has leakages through more than 50 tube wells/e wells excavated in agriculture fields various Villages in Sagar Distt. The geochemical analysis of the soil , gas and water indicates remarkable amount of Helium gas in these tube wells, containing about 0.45 to 0.735 and methane varying from 72 % to 99%. These investigations were done in the long research work (more then 25 years)dedication carried out in this area and research finding published in the Journal of National and International repute, which has attracted the officers/ Scientists of ONGC, Dehradun, CGWB, Faridbad, Atomic Mineral Directorate Hyderabad and Bhabha Atomic Research Centre Mumbai.

The Result of the stable isotopic analysis of Ethane gas in these samples δ C13 value are ranging from -24.9 per mill w.r.t. PDB and -26.9 per mill w.r.t. PDB and the Methane gas are ranging from Isotopic Values -54.0-per mill w.r.t. PDB to -61.5 per mill w.r.t. PDB are indicative that this gas is of thermogenic origin, which must have been formed at very high temperature & pressure condition in the deeper horizon of the great Vindhyan sedimentary basin of late Proterozoic (>500m.y.) period. A reporting of leakages of above mentioned gas from 50 tubewells in the inliers of Vindhyan rocks and even in the Deccan trap rocks ensures that this area must be having a big gas reservoir within Vindhayn rocks around Sagar-Distt. in M.P. The ONGC energy Centre Ahmadabad has started the detail collaborative geophysical work on the drilling exploration upto the depth of 600 m has been carried out and to be carried out in various location from where the leakages of has been earlier reported earlier. In these 600 m deep drill holes detail geophysical logging including the gama ray logging and Neutron logging, lithological an d structural logging will be carried out to know the probable gas reserve and at what depth the, we can get the gas for the exploration and utilization of these ases for industrial purpose and other uses etc . The detail geophysical studies will be very much helpful in the gas reserve calculation and the depth of the gas pockes in the South Ganga Basin in Bundelkhand region in M.P.

Key word-Vindhyan rocks, petroleum gas, helium, proterozoic, stable isotopic, geochemically, leakages, Thermogenic

The Effects of ICT and FDI on CO2 emissions in China

Fangyuan Chi
School of Economics and Management, Northeast Normal University, Changchun, Jilin, China

With the rapid development of information and communication technology (ICT) and counter-cyclical expansion of foreign direct investment (FDI), most foreign-invested companies in China are highly polluting. Meanwhile, new research shows that the impact of ICT on the environment is uncertain. This study is an effort in dividing ICT into hardware and software, aiming to explore its effects on carbon (CO2) emissions from 2003 to 2017 in 31 provinces, autonomous regions, and municipalities in China and further explore the impacts of its application to foreign-invested enterprises on environmental quality. The findings show that ICT software has a significant negative effect on CO2 emissions, but ICT hardware and FDI have significant positive effects on CO2 emissions. However, when ICT software and hardware are applied to foreign-invested enterprises, they can significantly improve the environmental quality. Moreover, the durative innovation of ICT software ensures environmental sustainability. A set of government measures are published to help stimulate the positive effect of ICT software on CO2 emissions, such as taxes and fees cuts, and no-interest loans. This could provide guidelines for other countries.

Biography:

Fangyuan Chi is a doctoral candidate in World Economic from Northeast Normal University, Changchun, China, where she also obtained the B.S. degree in Public Finance and M.S. degree in Finance. She worked at Bank of Communications from 2016 to 2018. Her research fields include green economy, information and communication technology, and environmental protection.

Air pollution, Climate Change and Public Health: A Study of Kathmandu Valley

Dr. Subash Khadka[1]

[1]Department of Pollution, ATTF Nepal/Tribhuvan University, Kathmandu, Bagmati, Nepal

Climate change and air pollution are intimately related. The other factor lowering the quality of our planet is the climate. The amount of sunlight that enters the atmosphere is impacted by pollutants such aerosols, methane, black carbon, and tropospheric ozone. As a result, the Earth's temperature is rising, which causes glaciers, icebergs, and ice to melt. The World Health Organization provides information on six main air pollutants: lead, nitrogen oxides, Sulphur oxides, ground-level ozone, and particle pollution. Groundwater, soil, and air are just a few of the elements of the environment that can be severely harmed by air pollution. Furthermore, it seriously endangers all living things. Studies that concentrated on either short-term (acute) or long-term (chronic) particular matter exposure have demonstrated a link between particulate matter and unfavorable health outcomes. Typically, chemical reactions between the various pollutants result in the formation of particulate matter in the atmosphere. The size of the particles has a significant impact on how deeply they penetrate. This study will identify the nexus of air pollution, climate change, and public health issue particularly in context to Kathmandu valley of Nepal.

Biography:

Subash Khadka is the co-founder of ATTF Nepal—A federation that works towards linking public health, person with disabilities, through the medium of sports, research and public policy, and entrepreneurship. He has completed Masters in Public Health in specialization with air pollution, climate change from Tribhuvan University, Kathmandu. As a research and data enthusiast he has been actively publishing and working on pollution data of Kathmandu and major cities of Nepal. Furthermore, his work focuses on building sustainable and beneficial relationships for organizations and individuals—also focusing on entrepreneurship and person with disability. He enjoys hiking and playing sports in his leisure time.

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Evaluating the Topsoil and Subsoil Physical Quality Using Relative Bulk Density in Urmia Plain

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This study was conducted to evaluate the topsoil and subsoil physical quality using relative bulk density (RBD) in Urmia plain in Iran. Undisturbed samples were collected from two layers (topsoil and subsoil) of thirty agricultural soils. Categories of 0.72 ≥ RBD (low degree of compactness), 0.82 > RBD > 0.72 (moderate/optimum degree of compactness), and RBD ≥ 0.82 (high degree of compactness) were used to evaluate soil physical quality (SPQ). Two topsoils had a low degree of compactness, fourteen topsoils had an optimum degree of compactness, and the rest (i.e., fourteen topsoils) had a high degree of compactness. Only one subsoil had an optimum degree of compactness, and twenty-eight subsoils (i.e., 93%) had a high degree of compactness, indicating poor SPQ of the subsoil layer in the studied region. It seems that conventional tillage in the past decades destroyed the pore system in the majority of studied subsoils. The high degree of compactness would reduce soil aeration and increase soil penetration resistance which could restrict root and plant growth. Conversely, a low degree of soil compactness is expected to reduce the root-soil contact.

Key words: Compactness, Relative bulk density, Soil physical quality, Subsoil

Biography:

This is Hossein Asgarzadeh from the Department of Soil Science, Urmia University. My research field is soil water availability to plants, compaction and soil physical quality.

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