The 6th International Conference on Agricultural and Biological Sciences (ABS 2020) & (ABB 2020)
The 3rd International Conference on Applied Biochemistry and Biotechnology

August 23 - 26, 2020

Online conference

Conference Program

TABLE OF CONTENTS

Part I Welcome Speeches 1

Welcome Speech by Prof. Machito Mihara 1

Welcome Speech by Prof. Xuqiao Feng 2

Part II Plenary Speeches 4

Plenary Speech 1: Field Research Challenging for the Sustainable Development in the 21st Century 4

Plenary Speech 2: Integrative Transcriptomics Reveal Sexually Dimorphic MicroRNA Control of the Cholinergic/Neurokine Interface in Schizophrenia and Bipolar Disorder 6

Part III Video Presentation Sessions 8

Video Session 1_ Plant and Crop Biology 9

Abstracts of Video Session 1 10

Video Session 2_ Food Science and Animal Biology 20

Abstracts of Video Session 2 21

Video Session 3_ Soil Ecology and Agricultural Economics 27

Abstracts of Video Session 3 29

Part IV Acknowledgements 38

Part I Welcome Speeches

Welcome Speech by Prof. Machito Mihara

Distinguished Delegates, Distinguished Guests, Ladies and Gentlemen, and All Friends,

Please allow me to introduce myself at first, I am Machito Mihara from Tokyo University of Agriculture, Japan. It is my pleasure to give a welcome speech at this international conference in this special period.

The outbreak of COVID-19 in late 2019 has brought great changes in all aspects of our daily lives. The "Social Distancing" and "Quarantine" policies making labor-oriented agriculture trap in the dilemma of migrant labor shortage and sharp increase in daily wages for some farming activities. Meanwhile, the supply chains in agriculture have been disrupted because of issues in transportation and market operation policy, farmers have to decline the price for wheat, crops and vegetables, but consumers need to pay more at markets. Agriculture around the world will undergo a difficult transition period to change production mode if the coronavirus-driven consumption patterns continue. In the meantime, large-scale of social distancing, the rupture of cargo logistics chains, and production shutdowns around the world have alleviated the pressure on the environment. The most obvious of these is that the emissions of carbon and nitrogen dioxide are reduced significantly, resulting in better air quality and clearer rivers and lakes. Besides, as people stay at home, animals have more room to roam.

ABS 2020 was scheduled to be held at Tokyo University of Agriculture, Japan from August 23rd-26th, and lots of works were done since late 2019. However, due to the COVID-19, we have to change it to online conference. I hope you will enjoy the videos presented and get yourself enlightened at ABS 2020!

After discussion and consideration, we are happy to hold ABS conference at Tokyo University of Agriculture, Japan in near future after the worldwide pandemic ends. I hope by that time, we can gather around freely, no more mask to wear.

Wish all of you stay safe and sound!

Wish you had a nice time with your families!

Lastly, I do hope you have meaningful time during online conference of ABS 2020.

Prof. Dr. Machito MIHARA
General Chair of ABS2020,
Department of Bioproduction and Environment Engineering,
Faculty of Regional Environment Science,
Tokyo University of Agriculture, Japan

Welcome Speech by Prof. Xuqiao Feng

Speech URL: http://www.academicconf.com/Video/Details?paperId=32289

Distinguished Delegates, Distinguished Guests, Ladies and Gentlemen, and All Friends,

Thanks for the welcome speech presented by Prof. Machito Mihara on behalf of Tokyo University of Agriculture, Japan.

I am Prof. Xuqiao Feng, Chair of Technical Program Committee of ABS conference. I am from Bohai University; Institute for Science and Technology of Fruits and Vegetables, China.

It is really nice to know you are fine, and it is our great honor to have you join the 6th international online conference on Agricultural and Biological Sciences (ABS 2020) and the 3rd International online Conference on Applied Biochemistry and Biotechnology (ABB 2020). On behalf of the Organizing Committee of ABS/ABB 2020, we would love to express our sincere acknowledgement to your support and cooperation in watching and sharing the videos of the online conference. Thank you very much for your participation and watching.

First of all, let me introduce our distinguished guests participated in ABS/ABB 2020 online conference.

Prof. Hisayoshi Hayashi
Biosphere Resource Science and Technology Program, Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan
He is the plenary speaker of ABS 2020. He has spent more than 20 years on studying the crop and environmental sciences. He joined ABS conference since 2017, and provided many valuable suggestions and make great contributions to the organizing of ABS conferences.

Prof. Hermona Soreq
Department of Biological Chemistry, The Alexander Silberman Institute of Life Sciences, The Hebrew University of Jerusalem, The Edmond J. Safra Campus, Jerusalem, Israel
She is a founding member of the Edmond and Lily Safra Center for Brain Science, and authored hundreds of publications. She will deliver a plenary speech on the transcriptomics application on medical sciences.

Prof. Moniruzzaman Khondker
Department of Botany, University of Dhaka, Dhaka, Bangladesh

Prof. Md. Abdul Karim
Laboratory of Microbiology, Department of Botany, University of Dhaka, Bangladesh

Two Professors from University of Dhaka joined ABS conference since 2015, and made great contributions to the organizing of ABS conferences. Now they are the permanent TPC members of ABS conferences.

ABS/ABB is an annual conference, which aims to promoting the exchange of latest research achievements. The past five events were held in Beijing, Shanghai, Qingdao, Hangzhou and Macau successfully with more than 600 participants form more than 30 countries. Thank you very much for the attention and participation.

There are about 39 videos this year, covering a wide range of branches on animal, crop sciences, food, irrigation, biochemistry, agricultural economics and ecological sciences. The online videos were divided into three parts:
2 plenary speeches delivered by Prof. Hisayoshi Hayashi and Prof. Hermona Soreq;
9 Invited Presentations delivered by Prof. Moniruzzaman Khondker, Prof. Md. Abdul Karim, Prof. Anna Maria Duszewska, Prof. Tsair-Wang Chung, Prof. Cigdem Savaskan, Prof. Hiromasa Saitoh, Prof. Dr. Woo-Kyun LEE, Dr. Anas Sarwar Qureshi and Dr. Paco Romero.
And 28 Video Presentations by Dr. Stalis Norma Ethica, Mrs. Leila Mohammadi etc.

I wish all of you benefit yourself from the exchange. Wish all of you enjoy the conference and enjoy the great and happy time staying with your families during this special period of time.

Now I would like to conclude my speech by declaring the conference open and wishing it a complete success.

Thank you.

Prof. Xuqiao Feng
Chair of Technical Program Committee of ABS 2020
Full-professor, College of Food Science and Engineering, Bohai Univerisity
Head of Institute for Science and Technology of Fruits and Vegetables, China

Part II Plenary Speeches

Plenary Speech 1: Field Research Challenging for the Sustainable Development in the 21st Century

Speech URL: http://www.academicconf.com/Video/Details?paperId=32271

Plenary Speaker: Prof. Hisayoshi Hayashi

Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan

Biography: Dr. Hisayoshi Hayashi graduated from the University of Tsukuba in 1980. After working as an extension officer for a year in Nagano Prefecture he moved to Chushin Agricultural Experiment Station (CAES), where he was a member of the station's department of field crop cultivation for six years. He then moved to the University of Tsukuba, where he is a professor and head of the Crop Production Systems laboratory, now. His research focuses on the development and evaluation of sustainable, environmentally friendly production systems for both major crops and regional specialty crops, for example buckwheat (*Fagopyrum esculentum* Moench). He has also been a principal of the Junior and Senior High School at Komaba, University of Tsukuba, since 2014.

Abstract: There are several types of agronomic research, each of which is important for developing efficient, sustainable agriculture. One is field research, in which various crops are cultivated under varied treatments on universities', experimental stations' or farmers' land. It is relatively large-scale research, so it is generally labor-intensive and the work must be carefully controlled in terms of, *inter alia*, scheduling, participants' roles, and working procedures. Diverse factors, such as soil fertility, drainage, field slope, crop residues, weeds, and both the composition and cover of surrounding vegetation affect crop growth, so it is impossible to ensure that growth conditions are identical in each experimental plot. Thus, sufficient replicates are essential to account for effects of natural variation on crop production and yield, but increases in numbers of replications increase the laboriousness. Thus, there are generally large variations in field research data. Weather also has strong direct effects on various aspects of field research, for example, working schedules, cultivation periods and crop responses, so reproducibility of the results is low. We can often only cultivate target crops once a year (and even less frequently for biennial or perennial crops) because their growth periods are too long for more frequent cultivation. As their growth is affected by the weather, which varies both infra- and inter-annually, in the experimental fields during these periods, field research should be repeated for at least two years. It also takes a long time to master the specialist skills required for field research. However, field research is important for developing and improving cultivation technology because we cannot change the climate and cultivation environment, especially for food crops. Thus, we need to raise young researchers who can conduct field research efficiently in order to improve agricultural technology and increase both the yields and quality of crops.

Long-term experiments are important for evaluating agricultural sustainability and improving management systems. It is also important to develop 'model' experimental fields with stable conditions, and innovative approaches to boost productivity and sustainability. The research team at crop

production systems and crop science laboratories in our university is seeking to contribute to such efforts in several ways. *Inter alia*, we are evaluating effects of major nutrients on yields of upland crops in a four-year eight-crop rotation system. We have also just started a new project to elucidate much more comprehensively our planet's microbial ecosystem. This will involve development of a novel 'post-Koch microorganism isolation technique' that integrates science, engineering, and microbiology to find microorganisms that have not been previously isolated. It is expected that yield responses in long-term fertilization plots will be affected not only by major nutrients but also by intricate associated interactions of diverse macro- and micro-organisms acting not as a collection of a single organisms but as an ecosystem.

Post-Koch Ecology: The next-era microbial ecology that elucidates the super-terrestrial organism system. Grant-in-Aid for Scientific Research on Innovative Areas (Research in a proposed research area) 8106, 19H05687, URL:https://postkoch.jp/.

Plenary Speech 2: Integrative Transcriptomics Reveal Sexually Dimorphic MicroRNA Control of the Cholinergic/Neurokine Interface in Schizophrenia and Bipolar Disorder

Speech URL: http://www.academicconf.com/Video/Details?paperId=31761

Plenary Speaker: Prof. Hermona Soreq

Molecular Neuroscience, The Edmond and Lily Safra Center for Brain Sciences, Department of Biological Chemistry, The Alexander Silberman Institute of Life Sciences, The Hebrew University of Jerusalem, The Edmond J. Safra Campus, Jerusalem, Israel

Biography: Hermona Soreq was trained at The Hebrew University, Tel Aviv University, The Weizmann Institute of Science and the Rockeffeler University, NYC. She joined the faculty of The Hebrew University in 1986, where she holds a University Slesinger Chair in Molecular Neuroscience and is a founding member of the Edmond and Lily Safra Center for Brain Science. Soreq studies the mechanisms controlling acetylcholine functioning; she uses molecular biology and genomics to explore cholinergic signaling, with a recent focus on its short and long non-coding RNA regulators, including microRNAs. Her work spans both basic and biomedical studies on cholinergic signaling in health and disease, particularly on anxiety-related topics and she is the elected President of the International Organization of Cholinergic Mechanisms. Soreq served as the elected Dean of the Faculty of Science (2005-2008), authored hundreds of publications, including 56 published in Science, Nature, PNAS, Neuron and other high-impact journals and has been the recipient of co-recipient of significant funding from US, European and Israeli National and private foundations including an Advanced ERC Award and an Israeli I-Core Center of Excellence on mass trauma. She is a member of The Hebrew University's Board of Governors and scientific advisory boards for national and international bodies with major interests in life sciences. Her honors include Honorary PhDs from the Universities of Stockholm (1996), Ben-Gurion University (2007), and Erlangen (2008), Teva Founders' Award (2006), The Lise Meitner Alexander von Humboldt Award, Germany (2009), a Miller Fellowship at US UC Berkeley (2009), a Berlin NeuroCure visiting fellowship (2015-2021), a Rappaport prize for bio-medical research (2015), an International Psychoneuroimmunology Award (2016), the ILANIT-Katzir Prize for outstanding research achievements in the Life Sciences (2017) and a FEBS keynote lecture award (2020). She also contributes to the Neuro-Cure Center, Berlin, the Immunosensation Center, Bonn and the International Advisory Boards of the UK-Israel Council and BGU's Center of Biotechnology.

Abstract: Background: Recent large-scale genomic and transcriptomic analyses uncovered previously unknown magnitudes of transcriptional correlation and overlap (71%) in individuals suffering from schizophrenia (SCZ) and bipolar disorder (BD). This suggests a shared SCZ/BD spectrum, but leaves the causes for the widely divergent sex-specific manifestations of these clinical pathologies largely unclear. While current research advances enable unprecedented insight into the functional genomic context of a multitude of diseases, RNA-sequencing analyses are often limited to identifying lowest p-value transcripts, which does not address polygenic phenomena.

Results: To overcome these limitations, we developed an integrative approach that combines large scale transcriptomic meta-analysis of patient brain tissues with single-cell sequencing data of CNS

neurons, short RNA-sequencing of human male- and female-originated cell lines, and connectomics of transcription factor and microRNA-interactions with perturbed transcripts. We used this pipeline to analyze cortical transcripts of schizophrenia and bipolar disorder patients. Applying our pipeline enabled disentangling the differences between affected men and women and identified the disease-affected systems of cholinergic transmission and gp130-family neurokine controllers of immune function, interlinked by microRNAs.

Conclusions: Bioinformatically supported high-throughput techniques such as short RNA sequencing can bridge the gap between traditional molecular interaction studies and purely bioinformatics-based prediction paradigms. Using this approach, we identified the miRNA families mir-10 and mir-199 at the center of the cholinergic/neurokine interface. Highlighting the linkage via microRNAs and the differences between the sexes in the complex network of cortical cholinergic neurons supports the hypothesis of sexually dimorphic upstream RNA controllers of mental functioning.

Part III Video Presentation Sessions

The vision of our congress is to engage the participants in meaningful session for the exploration on scientific advancements. In order for this model to succeed, speakers or the participants need to adhere to a set of instructions and guidelines.

✧ You can record a video of PPT presentation, or show your face with high resolution as vivid as face-to-face presentation.

✧ The conference logo should be added to each PPT slide; Title, presenter and affiliation information should be indicated in the first slide; Each slide should be concise, uncluttered and readable from a distance; include only key words and phrases for visual reinforcement.

Duration of Each Presentation (Tentatively):

✧ Invited Video Presentation: 10-15 Minutes of Presentation

✧ Regular Video Presentation: 8-12 Minutes of Presentation

****

Best Video Presentation Selection Procedure

• **One best video presentation** will be selected based on the results from the first and second round of selection;
• This award consists of **a certificate** and an award of **500 USD** (Paid with Paypal);

Selection Criteria

A best presentation will be selected based on the following items:
• Research Quality
• Presentation Performance
• Presentation Language
• PowerPoint Design

Selection Procedure

• All video presentations will be updated on the conference website;
• Audience could select best video presentations by clicking 'Vote for the Best Presentation', and vote from the same IP would be counted only one time for each video presentation;
• First Round of Selection: **Top 5 Video Presentations** will be selected based on the numbers of **'Votes'** till **September 5th, 2020**;
• Second Round of Selection: **1 Best Video Presentation** among the Top 5 Video Presentations from the first round will be selected by TPC members of ABS 2020 (Whose video will not join the selection). Final results will be demonstrated on the website on **September 8th, 2020**;

Video Session 1_ Plant and Crop Biology

Paper ID	Presentation Title	Presenter	Presentation URL
ABS3300 (Invited)	Analysis of antioxidant property of the extract of saponin by experiment design methodology	Tsair-Wang Chung	http://www.academicconf.com/Video/Details?paperId=30041
ABS3305 (Invited)	Morphological observations in durum wheat after embryo manipulations	Cigdem Savaskan	http://www.academicconf.com/Video/Details?paperId=30066
ABS3451 (Invited)	Identification of the high affinity copper transporters family in tomato and the effects of copper availability in their regulation	Paco Romero	http://www.academicconf.com/Video/Details?paperId=30906
ABS3475 (Invited)	RNA-Seq of in planta-expressed Magnaporthe oryzae genes identifies MoSVP as a highly expressed gene required for pathogenicity at the initial stage of infection	Hiromasa Saitoh	http://www.academicconf.com/Video/Details?paperId=31115
ABS3358	Ultrastructural changes in oil bodies accumulation and fatty acids composition during seed development of *Styrax tonkinesis*	Liping Xu	http://www.academicconf.com/Video/Details?paperId=30377
ABS3417	Physiological role of β-carotene monohydroxylase (CYP97H1) in carotenoid biosynthesis in Euglena gracilis	Shun Tamaki	http://www.academicconf.com/Video/Details?paperId=30724
ABS3433	The effect of initial ph variation to the growth of Indonesia Indigenous Synechococcus (Cyanobacteria) HS-7 and HS-9 in CT Medium	Nining Betawati Prihantini	http://www.academicconf.com/Video/Details?paperId=30768
ABS3501	Functional analysis of rhizobial pathogenic-like effector hijacking soybean nodulation signalling	Safirah Tasa Nerves Ratu	http://www.academicconf.com/Video/Details?paperId=31353
ABS3530	Dualistic character of bacteria capable to plastic biodegradation and the growth-promotion of plant and yielding	Grażyna Dąbrowska	http://www.academicconf.com/Video/Details?paperId=31553
ABS3554	Development of grain sorghum cultivars with improved seed protein digestibility by means of modern biotechnology	Lev Elkonin	http://www.academicconf.com/Video/Details?paperId=31751
ABS3564	Euphorbia granulata: a folklore remedy for diabetes; attenuates oxidative stress and modulates Types II Diabetes Mellitus	Ali Sharif	http://www.academicconf.com/Video/Details?paperId=31846
ABS3589	A banana aquaporin gene, *MaPIP;1*, is involved in tolerance to drought stress	Yi Xu	http://www.academicconf.com/Video/Details?paperId=31966
ABS3636	Study on Anti-fungal mechanism of Bacillus amyloliquefaciens BA-16-8	Ruimin Fu	http://www.academicconf.com/Video/Details?paperId=32310

Abstracts of Video Session 1

ABS3300 (Invited): Analysis of antioxidant property of the extract of saponin by experiment design methodology

Speech URL: http://www.academicconf.com/Video/Details?paperId=30041

Invited Speaker: Tsair-Wang Chung

Professor, College of Engineering, Chung Yuan Christian University

Biography: Dr. Tsair-Wang Chung received the B.S. degree in Chemical Engineering from Chung Yuan Christian University (CYCU), Taiwan in 1985, M.S. and Ph.D. degrees in Chemical Engineering from University of Missouri-Columbia, USA in 1991 and 1993, respectively. Currently, he is a principal investigator with the bioresource and biomass industrial technology. He has authored or co-author more than 200 research papers in refereed journals and conference proceedings. His current research interests include environmental sustainability, biomass technology, separation technology, and membrane system. Dr. Chung serves as the Dean of College of Engineering in CYCU and he served as the Dean of Industry-Academia Cooperation for two years and Dean of Research and development for five years. He received the Annual Excellent Technology Transfer Awards from 2010 to 2014, 2016 to 2018 in Chung Yuan Christian University and the First Grade Reward of the Talent Scholar from Ministry of Science and Technology, Taiwan.

Abstract: The antioxidant properties of the extract of saponin from Sapindus mukorossi (soapberry) was analyzed and optimized using Response Surface Methodology (RSM). In this study, the antioxidant properties were evaluated using different antioxidant tests. There are 1,1-di-phenyl-2-picryl-hydrazyl (DPPH) free radical scavenging, reducing power, and ferrous ion chelating. The best DPPH free radical scavenging ability was obtained in 91.56 % (X1 = 1 hour, X2 = 1:15 (w/v), X3 = 0.55 %). The effects of solid-liquid ratio (X2) and enzyme concentration (X3) on the response of percentage of free radical scavenging (Y1) was significant. The best reducing power was obtained in 0.473 Abs (X1 = 3 hour, X2 = 1:10 (w/v), X3 = 0.1 %). The effects of solid-liquid ratio (X2) on the response of amount of reducing power (Y2) was significant. The best ferrous ion chelating ability was obtained in 49.63 % (X1 = 1 hour, X2 = 1:10 (w/v), X3 = 1 %). The effects of time (X1) and solid-liquid ratio (X2) on the response of percentage of ferrous ion chelating ability (Y3) was significant. The extract of saponin from Sapindus mukorossi shows excellent in antioxidant capacity based on reducing power and scavenging free radicals activity, but it is relatively weak in ferrous ion chelating.

ABS3305 (Invited): Morphological observations in durum wheat after embryo manipulations

Speech URL: http://www.academicconf.com/Video/Details?paperId=30066

Invited Speaker: Cigdem Savaskan

Full professor, Faculty of Arts and Sciences, Süleyman Demirel University, Isparta, Turkey

Biography: Prof. Dr. Savaskan got her BSc in Faculty of Sciences belonging to Ankara University in 1980, MSc and PhD in the Graduate School of Natural and Applied Sciences of the same University 1989 and 1994 respectively. She worked in Turkish Atomic Energy Authority as a scientific researcher in cytology and mutation genetics subjects until 2002. In the same time, she worked for 'Genetic basis of mutation and related techniques for crop improvement' in the Department of Genetics belonging to Silesian University in Poland between 1992–1993, supported by FAO/IAEA. After having PhD degree, she concentrated herself on 'doubled haploid plant production in durum wheat using intergeneric crosses' and, for this, she worked about that in John Innes Centre, Cereal Genetics Laboratory, Norwich-United Kingdom in 1995, supported by 'Turkish Scientific and Technical Research Authority'(TUBITAK)/Royal Society (ESEP). In 2002, she began to work as full professor in Süleyman Demirel University, which is one of the young Turkish state University located in the Mediterranean region of Turkey, until 2012 October. She has given lectures on angiosperm embryology, plant cell, microtechniques in under graduate program and molecular basis of mutation, advanced genetics, plant tissue culture etc. in BSc and PhD programmes. In the meantime, a number of PhD and BSc thesis due to the projects in plant tissue culture techniques have been completed in her management setting up a 'plant tissue culture and biodozimeter lab' in Department of Biology.

Abstract: In cereals, haploid or diploid embryo structures are suitable organizations in practice for amelioration or storage of genotypes or some other biotechnologies (Savaskan 2017). It is possible to reveal of variation as different genotypes from heterozygote or landraces after making homozygote of recessive alleles by doubling of chromosomes using embryo rescue. In these genotypes, characters can be evaluated as qualitative or quantitatively, for instance; dark purple coleoptile could be observed in some doubled haploid (DH) genotypes. The amount of chlorophyl (a/b) and carotenoid have been evaluated in young leafs in DH-6 and DH-8 and some other durum wheat genotypes, while investigating their tolerances to salinity in laboratory conditions (Duran *et al*, 2010). Color of grains (amount of carotenoid in harvested grains) in durum genotypes have also been evaluated with field experiment conditions in three different locations of Anatolia and also correlation (r) has been identified with other grain characters related with agronomical values (Savaskan *et al* 2003). Here it is possible to determine the rate into correlation (path) of characters and direct and indirect effects of each other. Naturally, the relationships between amount of chlorophyl in young leafs and carotenoid in harvested grains and also harvest index (HI) of genotypes will be able to be interesting subjects to discuss.

ABS3451 (Invited): Identification of the high affinity copper transporters family in tomato and the effects of copper availability in their regulation

Speech URL: http://www.academicconf.com/Video/Details?paperId=30906

Invited Speaker: Paco Romero

Physiology and Biotechnology Lab., Food Biotechnology Department, Food Chemistry and Technology Institute (IATA-CSIC), Valencia, Spain

Biography: Dr. P. Romero graduated in Biological Sciences in 2006 and received a Master's degree in Molecular, Cellular and Genetic Biology in 2007. In 2012 he doctorated in Biotechnology from the Polytechnic University of Valencia (UPV), and was awarded with the Extraordinary Thesis Award of this University in 2014 for his dissertation on the identification of the molecular mechanisms involved in the dehydration response and ripening of citrus fruits, with special emphasis on determining the role of the hormone abscisic acid (ABA) and its signaling components in these processes. He has been also involved in investigating the role of ABA, ethylene and the phospholipid metabolism on the development of physiological alterations affecting fruit quality. During that period, he stablished collaboration with Dr. Concepcion Domingo (IVIA, Valencia, Spain) and Dr. J.K. Burns (CREC, Florida, USA), and was enrolled in 5 National Research Projects and in Industry research. Later, in collaboration with Dr. Lola Peñarrubia, he was involved in deciphering the relationship between ABA and the copper homeostasis in Arabidopsis. Since 2015, he has been awarded with two consecutive European Marie Sklodowska Curie Individual grants (MSCA-H2020). Within the first one (3F:FutureFreshFruit), in a coordinated project with Prof. Jocelyn KC Rose (Cornell University, NY, USA) and Dr. Teresa Lafuente (IATA-CSIC, Valencia, Spain), he studied the relationship of fruit softening, cuticle properties, ABA and water availability in tomato and citrus fruit. His current project (TOMACOP) is dealing with food quality and safety issues, aiming to evaluate the effects of copper soil contamination and the use of copper-based fertilizers and pesticides on fruit quality and human health by means of the identification and characterization of the copper homeostasis-related components in tomato plants and the study of the transcriptomic responses to copper deficiency.

Currently, Dr. P. Romero is an Associated Researcher at the Postharvest Pathology, Physiology and Biotechnology Lab (IATA-CSIC) with over 23 peer-reviewed publications, 4 book chapters, a number of publications in Conferences and diffusion seminars and several general public and students engagement events. He is an Editorial Board member of the American Journal of Plant Biology, and a member of the Spanish Society of Biochemistry and Molecular Biology (SEBBM) and the International Society for Horticultural Science (ISHS).

Abstract: Copper (Cu) is a vital micronutrient that acts as a double-edged sword in living beings because it is an essential redox-active cofactor in biological processes but is toxic when in excess. Plants are also sensitive to Cu availability, whose unbalance leads to yield reduction and, in extreme cases, to total crop failure. Since plant nutritional deficiencies or excesses are often transferred to consumers and may ultimately affect human health, we aim to decipher the regulatory mechanisms underlying Cu uptake and distribution in tomato, one of the most important horticultural crops worldwide. Six COPT members (SlCOPT1-6) were found within the Solanum lycopersicum genome (iTAG2.4). In silico analyses indicate that most of the identified proteins have two major transmembrane domains and three beta-sheets in their structure. In addition, all but SlCOPT4 include the Cu-binding domain and the upstream methionine residues necessary for their functionality. Promoter analyses suggest that SlCOPTs might be regulated by Cu and iron availability, biotic and abiotic stresses, tissue specificities and hormonal signals. Expression data reveal that only SlCOPT1, SlCOPT2 and SlCOPT5 are expressed in fruit. While SlCOPT1 and SlCOPT5 are induced early during fruit development and mainly

in locular tissue and vasculature, respectively, SlCOPT2 is expressed in later stages of fruit ripening and focused in seed and columella tissues. Protein interaction analyses point a link between SlCOPTs and well-known Cu homeostasis components, the peroxisomal system, other metals transporters and signaling transduction cascades involving protein kinases and phosphatases. Our work provides a first approach to unravel the molecular mechanisms of how Cu availability during preharvest can affect the nutritional value of horticultural products. This knowledge will help to develop biotechnological tools to minimize the use of Cu-based fertilizers and pesticides, to be used for phytoremediation in contaminated environments, and to grow more safety and sustainable food.

ABS3475 (Invited): RNA-Seq of in planta-expressed Magnaporthe oryzae genes identifies MoSVP as a highly expressed gene required for pathogenicity at the initial stage of infection

Speech URL: http://www.academicconf.com/Video/Details?paperId=31115

Invited Speaker: Hiromasa Saitoh

Professor, Department of Molecular Microbiology, Faculty of Life Sciences, Tokyo University of Agriculture, Tokyo, Japan

Biography: Dr. Hiromasa Saitoh received B.S. in 1993 from Teikyo University, Tochigi, Japan; received M.S. in 1995 from Mie University, Mie, Japan; received Ph.D. in Agriculture in 1999 from Osaka Prefecture University, Osaka, Japan; worked as a researcher at Iwate Biotechnology Research Center in Iwate, Japan from 1998 to 2002; worked as a Postdoc at Max Planck Institute for Plant Breeding Research in Cologne, Germany from 2003 to 2005; worked as a Postdoc, then a senior researcher at Iwate Biotechnology Research Center from 2005 to 2017; became a professor at Tokyo University of Agriculture, Tokyo, Japan in 2017. He has authored or co-authored more than 60 research papers in refereed journals and conference proceedings. Currently, he focuses on the function of secreted pathogenicity protein genes and search for novel virulence genes of the rice blast fungus Magnaporthe oryzae.

Abstract: The ascomycete fungus Magnaporthe oryzae is a hemibiotrophic pathogen that causes rice blast disease. M. oryzae infects rice leaves, stems and panicles, and induces severe reductions in yield. Effector proteins secreted by M. oryzae in planta are thought to be involved its virulence activity. Here, using RNA-sequencing (RNA-Seq), we generated transcriptome data for M. oryzae isolate Ina168 during the initial stages of infection. We prepared samples from conidia (the inoculum) and from peeled epidermal cotyledon tissue of susceptible barley Hordeum vulgare 'Nigrate' at 12, 24, 36 and 48 hours post-inoculation (hpi). We also generated a draft genome sequence of M. oryzae isolate Ina168 and used it as a reference for mapping the RNA-Seq reads. Gene expression profiling across all stages of M. oryzae infection revealed 1728 putative secreted effector protein genes. We selected seven such genes that were strongly up-regulated at 12 hpi and down-regulated at 24 or 36 hpi and performed gene knockout analysis to determine their roles in pathogenicity. Knockout of MoSVP, encoding a small putative secreted protein with a hydrophobic surface binding protein A domain, resulted in a reduction in pathogenicity, suggesting that MoSVP is a novel virulence effector of M. oryzae.

ABS3358: Ultrastructural changes in oil bodies accumulation and fatty acids composition during seed development of *Styrax tonkinesis*

Speech URL: http://www.academicconf.com/Video/Details?paperId=30377

Speaker: Liping Xu

College of biology and Geographical Sciences, Yili Normal University, Xinjiang, China
College of Forest Science, Collaborative Innovation Center of Sustainable Forestry in Southern China, Nanjing Forestry University, Nanjing, China

Abstract. The paper reports oil bodies formulation and fatty acids composition of the oil extracts from *Styrax tonkinensis* seeds which can be as the potential biofuel feedstock as being rich in oil. Results showed that few oil bodies acquired through transmission electron microscopy (TEM) appeared after 40 days after flowering (DAF), but the peak of the oil bodies was observed after 100 DAF. Then, the size of the oil bodies generally increased, while their number decreased. The determination of the oil extract and its components, measured applying Soxhlet extraction method and GC-MS analysis in the period from May to October, showed that the highest crude oil content (68%, w/w of dry seed) was extracted from seeds harvested in early October. The time-dependent process of oil accumulation during seed development shows a two-phase framework, with a high rate of increase of the oil content in the periods 20-40 and 80-100 DAF. GC/MS analysis showed that the main fatty acids (FAs) were linoleic acid, oleic acid, palmitic acid and stearic acid and their contents were 44.31- 63.59%, 37.1-43.65%, 6.92-20.89% and 1.73%-8.13%, respectively. Thus, the relative content of unsaturated fatty acids was always higher than that of saturated fatty acids and the ratio unsaturated/saturated fatty acids was affected by climatic temperature significantly. The high amount of linoleic acid and the high oil yield make S. tonkinensis seeds a promising source of oil exploitable for a variety of purposes.

ABS3417: Physiological role of β-carotene monohydroxylase (CYP97H1) in carotenoid biosynthesis in *Euglena gracilis*

Speech URL: http://www.academicconf.com/Video/Details?paperId=30724

Speaker: Shun Tamaki

Division of Signal Responses, Biosignal Research Center, Kobe University, Kobe, Japan

Abstract. Some carotenoids are found in the *Euglena gracilis*, including β-carotene, diadinoxanthin, diatoxanthins, and neoxanthin as the major species; however, the molecular mechanism underlying carotenoid biosynthesis in *E. gracilis* is not well understood. To clarify the pathway and regulation of carotenoid biosynthesis in this alga, we functionally characterized the cytochrome P450 (CYP)-type carotene hydroxylase gene *EgCYP97H1*. Heterologous *in vivo* enzyme assay in *E. coli* indicated that *EgCYP97H1* hydroxylated β-carotene to β-cryptoxanthin. *E. gracilis* cells suppressing *EgCYP97H1* resulted in marked growth inhibition and reductions in total carotenoid and chlorophyll contents. Analysis of carotenoid composition revealed that suppression of *EgCYP97H1* resulted in higher level of β-carotene, suggesting that *EgCYP97H1* is physiologically essential for carotenoid biosynthesis and thus normal cell growth. To our knowledge, this is the first time *EgCYP97H1* has been suggested to be β-carotene monohydroxylase, but not β-carotene dihydroxylase. Moreover, during light adaptation of dark-grown *E. gracilis*, transcript levels of the carotenoid biosynthetic genes

(*EgCYP97H1*, geranylgeranyl pyrophosphate synthase *EgcrtE*, and phytoene synthase *EgcrtB*) remained virtually unchanged. In contrast, carotenoid accumulation in *E. gracilis* grown under the same conditions was inhibited by treatment with a translational inhibitor but not a transcriptional inhibitor, indicating that photo-responsive carotenoid biosynthesis is regulated post-transcriptionally in this alga.

ABS3433: To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

ABS3501: Functional analysis of rhizobial pathogenic-like effector hijacking soybean nodulation signalling

Speech URL: http://www.academicconf.com/Video/Details?paperId=31353

Speaker: Safirah Tasa Nerves Ratu

United Graduate School of Agricultural Science, Tokyo University of Agriculture and Technology, Tokyo, Japan

Abstract. Legume plants overcome nitrogen shortage in soil by establishing a root-nodule symbiosis with nitrogen-fixing bacteria (rhizobia) in exchange for host-plant carbon supply. This mutualistic interaction is highly specific and in most of cases, depends on rhizobium-produced lipochitooligosaccharides (Nod factors; NFs) and their perception by leguminous receptors (NFRs) which activate nodulation processes. However, certain rhizobia can hijack leguminous nodulation signalling thanks to their type III secretion system (T3SS), which functions in pathogenic bacteria by the direct delivery of effector proteins into the host cell. Here, we report that soybean rhizobia *Bradyrhizobium elkanii* uses a pathogenic like T3-effector Bel2-5 to hijack soybean nodulation signalling in the absence of NFs. Bel2-5 resembles XopD effector of the phytopathogenic *Xanthomonas campestris* (*Xcv.*) and could modulate host symbiosis- and defense-related genes that are typically regulated on the recognition of compatible NFs by host-legume receptors. Bel2-5 is a modular protein consisting of two internal repeat domains, two ethylene-responsive element-binding factor-associated amphiphilic repressions (EAR) motifs, nuclear-localization signal (NLS), and ubiquitin-like protease (ULP) domain. Intriguingly, structural-function studies have shown that XopD also consists of those unique sequences important for *Xcv.* pathogenicity, except for repeat domains are limited to rhizobial strains. The involvement of each Bel2-5 unique domain during *B. elkanii* triggers NF-independent symbiosis is currently being investigated.

ABS3530: Dualistic character of bacteria capable to plastic biodegradation and the growth-promotion of plant and yielding

Speech URL: http://www.academicconf.com/Video/Details?paperId=31553

Speaker: Grażyna Dąbrowska

Department of Genetics, Faculty of Biology and Veterinary Science, Nicolaus Copernicus University, Toruń, Poland

Abstract. Serratia plymuthica is a gram negative, opportunistic, optionally anaerobic rod, belonging to the family of Enterobacteriaceae; rhizosphere bacterium capable of growing on polymer materials promoting plant growth, having the ability to create biofim, characterized by good survival after freeze drying and high metabolic activity, necessary in biodegradation processes. The aim of this study was to demonstrate the potential of bacteria by sequencing its genome and demonstrating the ability to biodegrade plastic and to support both germination and promote plant growth. Serratia plymuthica (IV-11-34) was isolated from the municipal landfill. As our analyses show, S. plymuthica has metabolic activity that directly affects the acceleration of plastic degradation. The study shows that this strain is characterized by good growth in the presence of polylactide (PLA) and polycaprolactone (PCL) biodegradable films and accelerates the process of their degradation. This has been confirmed by us by the material structure analysis by the scanning electron microscope, strength tests or Fourier-transform infrared spectroscopy and thermal analyses. All the data collected by us, obtained as a result of scientific and research works prove the great potential of S. plymuthica in the processes of degradation of polymeric materials. In addition to the ability to degrade polymeric materials, it has growth-promoting properties such as spring and winter Brassica napus, Glycine max, Miscanthus giganteus and Salix viminalis. Moreover, the presence of S. plymuthica in arable soil increases crop yields by 15-20%. The genome sequence of S. plymuthica strain reported in this work will benefit comparative analysis of the Serratia genus and promote further understanding of the specific genomic feature in terms of plant growth promotion and plastics biodegradation. The complete genome of S. plymuthica strain (IV-11-34) consist of a single chromosome of 5,415,278 bp with total GC content of 56.3%, encodes 5177 protein-coding sequences and 134 RNA-only encoding genes. We found of 175 genes involve in the pathway of biodegradation and metabolisms of xenobiotics according to KEGG analysis (https://www.genome.jp/kegg/pathway.html). The whole-genome sequences have been deposited at DDBJ/ENA/GenBank under accession number: JAAQRN010000000.

ABS3554: Development of grain sorghum cultivars with improved seed protein digestibility by means of modern biotechnology

Speech URL: http://www.academicconf.com/Video/Details?paperId=31751

Speaker: Lev Elkonin

Agricultural Research Institute of South-East Region, Russia

Abstract. Modification of the composition of grain storage proteins is an intensively developing area of plant biotechnology, which is of particular importance for sorghum – high-yielding drought tolerant crop. Compared to other cereals, the majority of sorghum cultivars and hybrids are characterized by reduced nutritional value that is caused by a low content of essential amino acids in the seed storage proteins (kafirins), and resistance of kafirins to protease digestion. Suppressing the synthesis of individual kafirin subclasses can be an effective approach to solve this problem, since it leads to a rebalancing of the kernel proteome, and to the synthesis of other proteins with a higher content of essential amino acids, and to the changes in the ultrastructure of protein bodies that become more sensitive to proteolytic digestion. Our studies are aimed at creating sorghum lines with a suppressed synthesis of γ-kafirin, the most resistant to protease digestion, which is located at a periphery of protein bodies and prevents the digestion of other kafirins. To solve this problem, we introduced the genetic construct capable of RNA silencing of the γ-kafirin gene into genomes of the grain sorghum cultivars

Zheltozernoye 10 and Avans through *Agrobacterium*-mediated genetic transformation. In these experiments, we used the *A. tumefaciens* strain GV3101/pNRKAF that contained in the T-DNA region the *bar* gene under the control of *nos*-promoter and the genetic construct for RNA-silencing consisting of inverted fragments of the γ-kafirin gene separated by the ubiquitin-intron sequence. In the cv. Avans, 14 PCR-positive plants (T_0 generation) were regenerated from transformed immature embryo-derived calli after two cycles of selection on the M11 medium with ammonium glufosinate. The transformation frequency varied in different experiments from 6.7 to 25%. A PCR analysis of T_1 progeny of one of these plants (#1-1) showed amplification of the target sequences of *nos*-promoter and *ubi*-intron and confirmed inheritance of the introduced genetic construct. Analysis of digestibility of endosperm proteins in this plant by pepsin treatment followed by SDS-PAGE and digital processing the electrophoretic spectra showed a significantly higher digestibility in this mutant compared to the original non-transgenic cultivar (93% vs. 57-62%). Analysis of the endosperm texture of transgenic kernels showed the disappearance of the vitreous endosperm. It is noteworthy that the vitreous endosperm in the kernels of Avans has a dark color, indicating the presence of tannins, which reduce the nutritional value of the grain. Thus, two factors – the removal of the vitreous endosperm containing tannins, and the improvement of the digestibility of kafirins – indicate a potentially higher nutritional value of the mutant grain, compared with the grain of the original variety Avans. In the cv. Zheltozernoe 10, an analysis of the digestibility of endosperm proteins in T_4 and T_5 progeny of transgenic plants, which we obtained earlier, showed that the introduced genetic construct continues to function, increasing the digestibility of kafirins, compared to the original non-transgenic line. Remarkably, PCR analysis with primers to the *nos*-promoter showed its absence in majority of the studied plants, although amplification of the target sequence of *ubi*-intron was observed. Therefore, these transgenic plants with improved digestibility of kafirins are functionally marker-free. This finding would facilitate their introduction into agricultural production.

ABS3564: Euphorbia granulata: a folklore remedy for diabetes; attenuates oxidative stress and modulates Types II Diabetes Mellitus

Speech URL: http://www.academicconf.com/Video/Details?paperId=31846

Speaker: Ali Sharif

Institute of Pharmacy, Faculty of Pharmaceutical and Allied Health Sciences, Lahore College for Women University, Lahore, Pakistan

Abstract. The folkloric profile of Euphorbia granulata demonstrates that it can be used in the management of diabetes. The present study was conducted to evaluate the safety profile of the whole plant extracts of Euphorbia granulata and their antidiabetic potential along with improvement in oxidative stress. Phytochemical screening, total phenolic and flavonoid contents along with in-vitro antioxidant and alpha-amylase inhibitory activities were determined. HPLC analysis, acute toxicity, glucose tolerance, in-vivo antidiabetic effect along with the influence on biochemical, oxidative stress parameters and comet assay of the aqua: methanolic extract were performed and assessed. Total phenolic (240±0.001 mg/g GAE) and flavonoid (224±0.002 mg/g QE) contents were found in the aqua: methanolic (30:70) extract. Inhibitory concentration IC50 indicated better results in DPPH (4.099 µg/mL) and alpha-amylase inhibitory (17.87 µg/mL) assays. HPLC analysis of the aqua: methanolic extract confirmed the presence of quercetin, gallic acid and ferulic acid. Acute oral toxicity exhibited no

mortality and morbidity during the 24h period. The aqua: methanolic extract showed better tolerance to glucose. Streptozotocin-nicotinamide (55-110 mg/kg) induced hyperglycemia declined along with improvement in hematological, biochemical parameters and oxidative stress markers (SOD, CAT, H202) in a dose-dependent manner. The maximum effect was recorded at 500mg/kg dose. Comet assay was performed for genotoxic studies and it was observed that the methanolic extract of Euphorbia granulata exhibited non-genotoxic effect at 100µg/mL.

ABS3589: A banana aquaporin gene, *MaPIP1;1*, is involved in tolerance to drought stress

Speech URL: http://www.academicconf.com/Video/Details?paperId=31966

Speaker: Yi Xu

Key Laboratory of Genetic Improvement of Bananas, Haikou Experimental Station, Chinese Academy of Tropical Agricultural Sciences, Haikou, China

Abstract. Aquaporin (AQP) proteins function in transporting water and other small molecules through the biological membranes, which is crucial for plants to survive in drought stress conditions. However, the precise role of AQPs in drought stress is not completely understood in plants. In this study, we have identified a PIP1 subfamily AQP (*MaPIP1;1*) gene from banana and characterized it by overexpression in transgenic Arabidopsis plants. Transient expression of *MaPIP1;1-GFP* fusion protein indicated its localization at plasma membrane. The expression of MaPIP1;1 was induced by water deficient treatment. Overexpression of *MaPIP1;1* in Arabidopsis resulted in an increased primary root elongation, root hair numbers and survival rates compared to WT under drought conditions. The improved drought tolerance conferred by MaPIP1;1 is associated with decreased membrane injury and improved osmotic adjustment. Finally, reduced expression of ABA-responsive genes in MaPIP1;1-overexpressing plants reflects their improved physiological status. The results demonstrated that heterologous expression of banana *MaPIP1;1* in Arabidopsis confers drought stress tolerances by reducing membrane injury, improving ion distribution and maintaining osmotic balance.

In order to analyze the mechanism of *MaPIP1;1* in response to drought stress, the promoter *pMaPIP1;1*, which lies 1362 bp upstream of the MaPIP1;1 transcriptional initiation site, was isolated from the banana genome. To functionally validate the promoter, various lengths of pMaPIP1;1 were deleted and fused to GUS to generate *pMaPIP1;1*::GUS fusion constructs that were then transformed into Arabidopsis to generate four transformants termed M-P1, M-P2, M-P3 and M-P4.Mannitol treatment was used to simulate drought conditions. All four transformants reacted well to mannitol treatment. M-P2 (− 1274 bp to − 1) showed the highest transcriptional activity among all transgenic Arabidopsis tissues, indicating that M-P2 was the core region of *pMaPIP1;1*. This region of the promoter also confers high levels of gene expression in response to mannitol treatment. Using M-P2 as a yeast one-hybrid bait, 23 different transcription factors or genes that interacted with *MaPIP1;1* were screened. In a dual luciferase assay for complementarity verification, the transcription factor MADS3 positively regulated MaPIP1;1 transcription when combined with the banana promoter. qRT-PCR showed that MADS3 expression was similar in banana leaves and roots under drought stress. In banana plants grown in 45% soil moisture to mimic drought stress, *MaPIP1;1* expression was maximized, which further demonstrated that the MADS3 transcription factor can synergize with *MaPIP1;1*.

ABS3636: Study on Anti-fungal mechanism of Bacillus amyloliquefaciens BA-16-8

Speech URL: http://www.academicconf.com/Video/Details?paperId=32310

Speaker: Ruimin Fu

Henan Financial University, Zhengzhou, China
The College of Life Sciences, Northwest University, Shaanxi, China

Abstract. [Objective] In order to explore the anti-fungal mechanism of fengycin produced by B. amyloliquefaciens BA-16-8 in P. expansum at the cell level. [Methods]Scanning electron microscopy (SEM), transmission electron microscopy (TEM), PI nucleic acid fluorescent dye (PNCFD), fluorescence microscopy (FM) and spectral absorption was performed to investigate the effect of fengycin on the cellular morphological characteristics and structure of P. expansum mycelium. Electrophoretic mobility shift assays (EMSA) was performed to examine the effect of fengycin on the nucleic acid of P. expansum. [Results]SEM and TEM results revealed that the surface and intracellular protoplasm of P. expansum mycelium became rough and the morphological structure of the fungal cells were altered after fengycin treatments, which means fengycin could damage the cell membrane integrity and cell structure. The result of EMSA indicated that engycin could combine with nonspecific P. expansum DNA in vitro. [Conclusion] Fengy could alter the cell membrane integrity and combined with nucleic acid such as DNA, which could inhibit gene expression and organelle synthesis.

Video Session 2_ Food Science and Animal Biology

Paper ID	Presentation Title	Presenter	Presentation URL
ABS3295 (Invited)	Cryopreservation for biodiversity protection of Wisent (Bison bonasus)	Anna Duszewska	http://www.academic-conf.com/Video/Details?paperId=30001
ABS3408	Effect of Aloe vera gel combined with basil (*Ocimum bacilicum*) essential oil as a natural coating on maintaining postharvest quality peach (*Prunus persica* L.) during storage	Leila Mohammadi	http://www.academic-conf.com/Video/Details?paperId=30708
ABS3527	4-Phenylbutyric acid accelerates remodeling of tight junctions and intestinal barrier in IPEC-J2 cell monolayer model	Qian Jiang	http://www.academic-conf.com/Video/Details?paperId=31530
ABS3535	Synergistic effect between propolis and gentamicin	Ana Sofia Pereira de Freitas	http://www.academic-conf.com/Video/Details?paperId=31576
ABS3557	Cattle identification: history of nose prints approach in brief	R W Bello	http://www.academic-conf.com/Video/Details?paperId=31789
ABS3563	Polyphasic identification of Penicillium spp. isolated from Spanish semi-hard ripened cheeses	Teresa-María López-Díaz	http://www.academic-conf.com/Video/Details?paperId=31843
ABS3565	Ensuring microbial food safety in microgreens and sprouts: seed sanitation with combined ultrasound and mild heat and treatment with calcium-oxide spray	Mengying Dong	http://www.academic-conf.com/Video/Details?paperId=31850
ABS3618	Study of preparation, composition and moisture sorption isotherm of Amazon River shrimp meal	Luiza Helena Da Silva Martins	http://www.academic-conf.com/Video/Details?paperId=32162
ABS3624	Movement and home range of owned free-roaming male dogs in Puerto Natales, Chile	Guillermo Pérez	http://www.academic-conf.com/Video/Details?paperId=32185
ABS3627	Sulfur, protein molecular weight distribution, and bread-making quality traits for milling streams in hard spring wheat grown under sulfur fertilization	Jae-Bom Ohm	http://www.academic-conf.com/Video/Details?paperId=32210
ABB1164	Applying the *E. coli*'s twin-arginine translocation pathway to isolation of biomarker-specific nanobodies from a synthetic camelized human nanobody library	Attapol Kamthong	http://www.academic-conf.com/Video/Details?paperId=31551

Abstracts of Video Session 2

ABS3295 (Invited): Cryopreservation for biodiversity protection of Wisent (*Bison bonasus*).

Speech URL: http://www.academicconf.com/Video/Details?paperId=30001

Invited Speaker: Anna Maria Duszewska

Professor, Division of Histology and Embryology, Department of Morphological Sciences, Faculty of Veterinary Medicine, Warsaw University of Life Sciences, Warsaw, Poland

Biography: I received my Master's degree in Animal Husbandry (1991) and PhD in Veterinary Medicine (1995) from Warsaw University of Life Sciences. In 1996, I joined the Institute of Genetics and Animal Breeding, Polish Academy of Sciences as an adjunct in the Experimental Embryology Department, where in 2006, I received habilitation. From 2006 to 2008 I worked as an Assistance Professor in that Institute. Since 2009, I have been working as an Associate Professor in the Division of Histology and Embryology, Department of Morphological Sciences, Faculty of Veterinary Medicine, Warsaw University of Life Sciences. I have been engaged in lecturing in Embryology, Histology, Cell biology and Genetics. I have been the supervisor for 8 Masters and 3 PhD students. I have been interested in research including in vitro production of cattle embryos and creation of transgenic cattle. Currently, I focus on the study of the influence of elevated temperature on the oviduct and early cattle embryo development in the aspect of maternal-embryo interaction. However mainly I have been engaged in in vitro production of bison bonasus (wisent) embryos, which is a threatened species. In 2017, I created the first wisent embryos in the world (Reproduction in Domestic Animals 2018). I have completed Polish and international projects (NCS, COST). I have published my research in, amongst others, PLOS One, Journal of Physiology and Pharmacology, Theriogenology, Reproduction in Domestic Animals, Reproduction Fertility and Development. I am an expert for the Federation of Veterinarians of Europe (FVE) and National Program FORESIGHT 2020. I am a member of the Epiconcept Action FA1201 (COST), Polish Society of Reproductive Biology and others.

Abstract. Cryobiology gives new perspectives in the protection of the Wisent - European bison (*Bison bonasus*) which is an endangered species. Cryobiology enables the preservation of germplasm, i.e. genetic material in the form of mature and immature oocytes, spermatozoa, embryos, somatic cells, fragments of tissues, organs and blood. We collect sperm from the epididymis of wisent males and then freeze them (sperm bank). We recover ovaries from wisent females, from which we isolate oocytes and ovarian tissue for their cryopreservation (oocyte and somatic cell banks). Some isolated immature oocytes are matured *in vitro* and then fertilized *in vitro* with thawed spermatozoa to obtain embryos. The embryos are cultured *in vitro* to morula and blastocyst stages and then cryopreserved (embryo bank), subsequently thawed embryos are transferred to recipients to obtain offspring. Primary cell lines are derived from tissue fragments, which are frozen (cell bank). Some of these cells are thawed to obtain induced pluripotent stem cells (iPS) from which gametes can potentially be obtained. Financed by the Forests Fund (Poland) - OR.271.3.10.2017.

ABS3408: To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

ABS3527: 4-Phenylbutyric acid accelerates remodeling of tight junctions and intestinal barrier in IPEC-J2 cell monolayer model

Speech URL: http://www.academicconf.com/Video/Details?paperId=31530

Speaker: Qian Jiang

College of Animal Science and Technology, Hunan Agricultural University, Hunan, China

Abstract. The intestinal epithelial barrier is the first line of defense against pathogens and endotoxin crossing the intestine-blood barrier. Intestinal epithelial barrier damage is characterized by the breakdown of tight junctions (TJs), increases in intestinal permeability and cell apoptosis, which can have long-lasting impacts on the pig's health. 4-Phenylbutyric acid (4-PBA) is an aromatic fatty acid that has been approved for the treatment of human diseases associated with endoplasmic reticulum stress and protein misfolding. Recent studies reported that 4-PBA could alleviate the apoptosis of intestinal epithelial cells in mice, however, the effects of 4-PBA on the intestinal barrier in pigs are largely unknown. This study aimed to explore the in vitro effects of 4-PBA on the remodeling of TJs and intestinal barrier. Intestinal epithelial cells (IPEC-J2) from porcine jejunum were differentiated on trans-well inserts and used as an in vitro model of the intestinal barrier, and deoxynivalenol was used as an inducer for barrier damage. Transepithelial electrical resistance (TEER) measurement and fluorescein isothiocyanate-dextran (FD-4) leakage experiments were used as indicators of integrity and permeability. Western blot was used to determine the protein levels of TJs. Confocal microscopy was used to evaluate the localization and integrity of TJs. Differentiated cells in the trans-well inserts were pre-incubated with DMSO (control group) or 1.0 μg/mL deoxynivalenol (DON-pre group) for 48 hours prior to the 0.0 μmol/L (DON-pre group) or 10 μmol/L 4-PBA treatment (4-PBA group). DON decreased TEER and increased FD-4 leakage during the first 48 hours' pre-incubation compared with the control group. The TEER values in the 4-PBA group were higher than that in the DON-pre group during the following 72 hours' treatment, indicating that 4-PBA accelerated the recovery of the intestinal barrier. As expected, 4-PBA treatment decreased the FD-4 leakage, which paralleled the results of increased TEER values. Besides, 4-PBA (0-40μmol/L, 0-72hours) treatments enhanced the protein levels of TJs in a time-dependent manner, instead of a dose-dependent manner. Immunofluorescence results indicate that DON-pretreatment disrupted the intercellular distribution of ZO-1 and Claudin-1. The intercellular distribution of TJs disrupted by DON pre-incubation is reversible, and 4-PBA could accelerate the remodeling process during the treatment. In conclusion, 4-PBA helps the barrier of IPEC-J2 cell monolayer recover from DON-induced damage via enhancing the TJs protein expressions and accelerating the remodeling of TJs.

ABS3535: Synergistic effect between propolis and gentamicin

Speech URL: http://www.academicconf.com/Video/Details?paperId=31576

Speaker: Ana Sofia Pereira de Freitas

Centre for the Research and Technology of Agro-Environmental and Biological Sciences, University of Minho, Braga, Portugal
Department of Biology, School of Sciences, University of Minho, Braga, Portugal

Abstract. Antimicrobial resistance has become an emergent problem with the increase of resistant strains and the lack of new antibiotics, so that new approaches are needed to overcome this problem [1]. Antimicrobial agents of natural sources have become a promising solution. Propolis, a complex mixture composed by resinous and balsamic material produced by bees from plant materials and their salivary secretions, has been object of study of many researchers regarding its valuable bioactivities, particularly for antimicrobial and antibiotic potential [2]. However, propolis chemical composition is known to be highly variable, which constitutes one of the major problems for its standardization and consequent use and acceptance by the medical community [3]. In this work we studied the antibacterial effects of the ethanol extracts of four Portuguese propolis samples harvested from an apiary over four years when combined with the antibiotic gentamicin. Agar dilution method was used in a panel of six bacterial strains and the results were expressed as minimum inhibitory concentration (MIC). A synergistic effect with gentamicin was observed for the four propolis ethanol extracts against all the tested bacteria. However, when particular concentrations of propolis and gentamicin were tested, the interaction between both agents nullifies the synergism.

References:

[1] Ventola CL. The antibiotic resistance crisis: part 1: causes and threats. *Pharm Ther* 2015;40, 277.
[2] Fokt H, Pereira A, Ferreira AM, Cunha A, Aguiar, C. How do bees prevent hive infections? The antimicrobial properties of propolis. *Curr Res, Technol Educ Top Appl Microbiol Microb Biotechnol* 2010;1, 481-4493.
[3] Bankova, V., Castro, S. L., and Marcucci, M. C. 2000. Propolis: recent advances in chemistry and plant origin. *Apidologie*. 31:3-15.

ABS3557: To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

ABS3563: Polyphasic identification of penicillium spp. isolated from Spanish semi-hard ripened cheeses

Speech URL: http://www.academicconf.com/Video/Details?paperId=31843

Speaker: Teresa-María López-Díaz

Faculty of Veterinary Medicine, University of León, León, Spain

Abstract. Penicillium is considered to be the most frequent fungal genus to contaminate cheese. Identification of members of this genus at species level is a very complex task, as most species have very similar properties. Recently, some authors have proposed a polyphasic approach to identify species of Penicillium subgenus Penicillium (which includes most species that cause cheese spoilage) based on morphological, chemical and molecular analysis. Fifteen samples of semi-hard ripened cheeses, both

spoiled (10) and unspoiled (5), and obtained from cheese factories located in Northwest of Spain, were analysed by a dilution plating technique and direct sampling. A total of 32 isolates were identified at species level by a polyphasic approach (phenotypic characterization, partial extrolite analysis and molecular identification). Most isolates (65.6%) belonged to the species P. commune; other species found were P. solitum, P. chrysogenum, P. nordicum, P. expansum and P. cvjetkovicii. All of the P. commune isolates were able to produce cyclopiazonic acid, while the P. nordicum and the P. expansum isolates were producers of ochratoxin A and patulin respectively. Despite this, the role of P. commune as beneficial fungi in cheese ripening should be investigated. Molecular identification based on BenA sequence analysis was able to identify the majority of isolates. The three mycotoxins investigated can be considered key for identification. The polyphasic approach seems to be a very valuable tool for identification of isolates of this complex genus.

ABS3565: Ensuring microbial food safety in microgreens and sprouts: seed sanitation with combined ultrasound and mild heat and treatment with calcium-oxide spray

Speech URL: http://www.academicconf.com/Video/Details?paperId=31850

Speaker: Mengying Dong

Department of Food Science and Human Nutrition, University of Illinois at Urbana-Champaign, USA

Abstract. Sprouts and microgreens are edible seedlings germinated from herb seeds, but their growing conditions are favorable for microbial proliferation. This study was conducted to control microbial growth during seed sprouting using a new seed sanitation method and an antimicrobial spray.
Kale, broccoli, and radish seeds were inoculated with *E. coli* O157:H7 87-23 at 6-7 log CFU/g. A treatment combining ultrasound and mild heat (55°C water) was used to sanitize the inoculated seeds, with an FDA-recommended chlorine wash (20 min., 20,000 ppm) as the control. The seeds were then germinated hydroponically on a germinating sheet with continuous moisture supply for 4 days at 25°C. Then the sprouts were stored at room temperature in a sealed container for 4 days. Microbial enumerations were performed on the seeds immediately after sanitation, the sprouts on the 4th day of germination, and the sprouts after 4 days of storage. In the antimicrobial spray experiment, the seeds were put into a seed-starting soil to germinate. The germinating seeds were sprayed with 3-mL CaO solution (0.1% or 0.2%) 3 times a day for 7 days, and a water spray was used as the control. The microgreens were harvested on day 7 by cutting them 1 cm above the soil. The *E. coli* cell concentrations were determined for the pretreated seeds and harvested microgreens.

The results showed that treatment with 5-min ultrasound and 55°C water can achieve the same level of reduction in *E. coli* cell population and sprout yield as the 20,000-ppm chlorine treatment. A 10-min ultrasound-warm-water combined treatment resulted in significantly higher ($p < 0.05$) microbial reductions in the kale (3.1 log CFU/g) and broccoli (2.7 log CFU/ g) seeds, and a slightly higher ($p > 0.05$) reduction in the radish seeds (2.60 log CFU/g) than the 5-min ultrasound-warm-water or chlorine treatments. However, it also significantly lowered the germination rates of all three seed types ($p < 0.05$). The 0.1% CaO spray was found to be effective in inhibiting *E. coli* O157:H7 growth in kale while maintaining the yield and germination rate. The 0.2% CaO spray significantly lowered the germination rate of all three kinds of seeds, while the yield was not affected. Overall, with the same initial

microbial concentrations and without any treatment, microgreens (3.0-3.9 log CFU/g) harvested without roots showed much lower microbial loads than those (6.0-7.0 log CFU/g) with roots.

The ultrasound-warm-water-combined seed sanitation method is an environmentally friendly alternative to the traditional chlorine wash. This study provided a practical solution to ensure microbial safety for the sprouts and microgreens industry.

ABS3618: Study of preparation, composition and moisture sorption isotherm of Amazon River shrimp meal

Speech URL: http://www.academicconf.com/Video/Details?paperId=32162

Speaker: Luiza Helena Da Silva Martins

Federal Rural University of Amazonia; Institute of Animal Health and Production (ISPA) Pará, Brazil

Abstract. Amazon River shrimp plays an important role in artisanal fishing in Brazil's northern region, is common to observe its disposal in commercial fishing over higher economic value fish (bycatch), which is a source of environmental drawbacks. The Amazon River shrimp processing is important to extend and add value to a high nutritional product. The shrimp meal production is an alternative to the processing. This work presents a shrimp meal preparation, physicochemical composition, as well as its technological functional properties, sorption isotherm, and sensory analysis of a mix of cassava flour (93 g/100 g) and shrimp meal (7 g/100 g). The results showed high content in protein (67.55 g/100 g). The Amazon River shrimp meal is potentially nutritional and it can add up value to nutritionally poorer food.

ABS3624: Movement and home range of owned free-roaming male dogs in Puerto Natales, Chile

Speech URL: http://www.academicconf.com/Video/Details?paperId=32185

Speaker: Guillermo Pérez

The Global Alliance for Animals and People, Duncan B.C., Canada

Abstract. Free-roaming dogs (FRDs) pose a significant health threat to humans, other animals and the environment. Yet, the effects of their movements and habitat use within cities and adjacent rural areas are poorly known, especially in relation to predation and the transmission of diseases that can impact human health (i.e., cystic echinococcosis and rabies). We explored the temporal and spatial distribution of owned FRDs for a remote Patagonian city surrounded by a grassland rural ecosystem by superimposing GPS coordinates of tracked dogs on satellite images (Google map). Using logistic regressions, we evaluated the potential effect of age, body condition score (BCS) and distance from their initial recorded GPS fix (at or near the owner's home) to the rural boundary (RD) as predictors of home range (HR) and maximum distance (MD) travelled from home. Our study revealed that owned FRDs in Puerto Natales, Chile have a high site fidelity to the urban environment and especially their owner's home, seldom venturing into rural areas. We observed that even FRDs living in close proximity to the

city boundary spent most of their time within the urban environment. On average, FRDs had a HR of 0.65 km2 (65 ha) and travelled a MD of 1.05 km. There were two individuals that travelled significantly further, and hence occupied a larger HR than the rest. Additionally, our results indicated that BCS was a predictor of HR, while age and RD were predictors of MD. These findings add to the range of predictors known to affect roaming dog HR size and used across different studies, suggesting that site-specific factors are likely affecting dog behavioral ecology. The study findings provide useful and original data on the movement ecology and site fidelity of owned FRDs in a remote city in Patagonia. We recommend that to make meaningful and cost-effective management decisions regarding owned FRDs in urban areas, future studies should also include the collection of sociocultural information on the interactions between of dogs and people.

ABS3627: Sulfur, protein molecular weight distribution, and bread-making quality traits for milling streams in hard spring wheat grown under sulfur fertilization

Speech URL: http://www.academicconf.com/Video/Details?paperId=32210

Speaker: Jae-Bom Ohm

USDA/ARS Edward T. Schafer Research Center, Cereal Crops Research Unit, Hard Spring and Durum Wheat Quality Laboratory, Fargo ND, USA

Abstract. Limited information is available on variation of quality traits for hard red spring (HRS) wheat grown under diverse conditions. This research aimed to examine the influence of sulfur (S) fertilization and growing location on protein, dough rheology and breadmaking traits and to determine associations between the quality traits for patent flour and mill streams (FMS) in an HRS wheat cultivar. Noteworthy finding was that breadmaking quality of the HRS wheat had different responses to S fertilizer, which was dependent on location. Patent flour S content differed significantly between growing locations, showing higher correlations with farinograph water absorption and dough development time than nitrogen content. When compared with reduction streams, the first and second break mill streams showed longer dough development time and extensibility, and larger bread loaf volume, all of which were positively associated with higher nitrogen and S contents. Among protein molecular weight distribution parameters, gliadins and unextractable glutenin polymers were identified as primary components that had positive effects individually on dough development time and extensibility and conjointly on loaf volume in FMS. Overall, two growing locations were found to have different optimum S fertilization level. Sulfur content was shown to be a good supplementary parameter for evaluation of flour mixing quality. FMS demonstrated significant difference in nitrogen, S, protein composition, and hence, functional quality properties, of which information is useful to produce flour blends to meet different commercial specifications.

ABB1164: To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

Video Session 3_ Soil Ecology and Agricultural Economics

Paper ID	Presentation Title	Presenter	Presentation URL
ABS3597 (Invited)	Man and mangroves socio-economic benefits, environmental and carbon sequestration	Moniruzzaman Khondke	http://www.academicconf.com/Video/Details?paperId=32003
ABS3622 (Invited)	Quantifying impacts of national-scale afforestation on carbon budgets in South Korea from 1961 to 2014	Woo-Kyun Lee	http://www.academicconf.com/Video/Details?paperId=32170
ABS3634 (Invited)	Bacterial bioremediation of polluted river water used for irrigation	Md. Abdul Karim	http://www.academicconf.com/Video/Details?paperId=32306
ABS3306	Prospecting postharvest processing of agricultural and social forest products at Gerlang Village, Central Java	Stalis Norma Ethica	http://www.academicconf.com/Video/Details?paperId=30067
ABS3508	New microbial origin compound capable of destruct T4 bacterial phage structure	Meng Jen Lee	http://www.academicconf.com/Video/Details?paperId=31407
ABS3524	Physiology and yield of job's tears under water saving irrigation	Fiky Yulianto Wicaksono	http://www.academicconf.com/Video/Details?paperId=31521
ABS3528	Fine bubble technology application for pesticide-removal effect in 'Gros Michel' banana (Musa acuminata 'Gros Michel')	J T Vuthijumnonk	http://www.academicconf.com/Video/Details?paperId=31531
ABS3548	Improving individual tree crown delineation and attributes estimation of tropical forests using airborne LiDAR Data	Wan Shafrina Wan Mohd Jaafar	http://www.academicconf.com/Video/Details?paperId=31674
ABS3552	Sustainable extraction and analysis of bioactive metabolites in agri-food wastes	Antonietta Baiano	http://www.academicconf.com/Video/Details?paperId=31722
ABS3553	Analysis of N-species (NO_3^-, NO_2^-, and NH_4^+) in Canadian marginal land soils	Nicole Rodriguez	http://www.academicconf.com/Video/Details?paperId=31733
ABS3555	Evaluation of different biodegradable protein-based containers for the controlled release of zinc to crops	Mercedes Jiménez Rosado	http://www.academicconf.com/Video/Details?paperId=31753
ABS3567	Harnessing the rhizosphere microbiome of xerophytes growing in Cholistan	Salma Mukhtar	http://www.academicconf.com/Video/Details?paperId=31867
ABS3575	Growth and yield of rice plants (*Oryza sativa*) grown in soil media containing several doses of inorganic fertilizers and sprayed with lombok brown algae extracts	H Sunarpi	http://www.academicconf.com/Video/Details?paperId=31907

ABS3601	Green preservatives for post harvest agri products	Nawal Kishore Dubey	http://www.academicconf.com/Video/Details?paperId=32022

Abstracts of Video Session 3

ABS3597 (Invited): Man and Mangroves: Socio-economic benefits, environment and carbon sequestration

Speech URL: http://www.academicconf.com/Video/Details?paperId=32003

Invited Speaker: Moniruzzaman Khondker

Professor, Department of Botany, University of Dhaka, Dhaka, Bangladesh

Biography: Moniruzzaman Khondker obtained M.Sc. in Botany with First Class from the University of Dhaka in 1972 where he joined as Lecturer in 1975. He was appointed Professor on 27 March 1995 and later on obtained Selection Grade Professor of the University of Dhaka. In 1988, he obtained a Post-Doctoral Fellowship from the 'Economic Commission for the European Communities' (erst-while EEC), Brussels, Belgium to visit 12 famous Limnological Institutes belonging to different EEC countries. During his service in the Dhaka University, he also worked as Consultant of many international projects on aquatic ecosystems carried out in Bangladesh. He is now the Director of Centre for Advanced Studies and Research in Biological Sciences in the University of Dhaka. He produced so far four Ph.Ds., guided 34 M.Sc. theses, published 102 research publications and wrote two text books.

Abstract. Human (Homo sapiens L.) population density on the habitable land area of our planet is estimated to be 122.21 ind km-2. Men use resources of habitable lands for their colonization, agriculture, industrialization, habitat building, resource extraction and for a number of other purposes. As a result, our natural resources are dwindling. Mangrove, a forest resource has been existing on earth since 7000 years and are utilized by men strongly. It is composed of a specialized biodiversity having adaptive features suitable to colonize in estuaries, and shallow zones where rivers meet oceans. World's mangrove forests occupy 180,000 km2 and are distributed along 16ºC winter isotherms. Of the whole forest area, ~58% belongs to 8 countries. These are Indonesia (23.5%), Brazil (7.3%), Australia (6.3%), Nigeria (5.8%), Cuba (4.3%), India (3.7%), Malaysia (3.2%) and Bangladesh (3.2%). However, worlds single largest unit of mangrove forest (Area,10000 km2) known as Sundarbans is situated in the greater Gangetic delta Bangladesh (6000 km2) and West Bengal, India (4000 km2). The Sundarban forest lies in between 21º31' and 22º30' N and 89º and 90º E and it has been declared as UNESCO world heritage site. The dominant plants are Heritiera fomes and Excoecaria agallocha contributing 29.7% of Sundarbans. Endangered Panthera tigris and spotted deer and Crocodylus porosus are common. Nearly 31,762 mt Nypa fruticans, 66,578 pieces of Ceriops decandra, 233 mt honey, 3485 mt fish and many other products are extracted from the Sundarbans annually. About 150037 tourists visit every year. The forest supports the livelihood of ~300,000 - 600,000 peoples for half a year period. Mangrove holds the most C rich biomass (937 mt/ha) of the world with a C sequestration rate 13.5 Gt y-1. Via mangrove forest, ca 174 gC m-2 y-1 are buried underneath soil. In the forest ecosystems, 33.63-81.25% decrease in the C-pool occurs after 10 years of deforestation. Overexploitation, navigation increase, unusual sedimentation, sea level rise, freshwater abstraction from upstream, salinity increase, top dying disease, etc. are the identified reasons for the destruction of world's mangrove forests. Forest management with adequate afforestation programs are suggested to protect the mangrove forests of the world.

ABS3622 (Invited): Quantifying impacts of national-scale afforestation on carbon budgets in South Korea from 1961 to 2014

Speech URL: http://www.academicconf.com/Video/Details?paperId=32170

Invited Speaker: Woo-Kyun Lee

Professor, Department of Environmental Science and Ecological Engineering, Korea University, Seoul, Korea
Director, OJEong Resilience Institute, Korea University, Seoul, Korea

Biography: Prof. Woo-Kyun Lee is a professor of Department of Environment Science and Ecological Engineering, director of OJERI (OJEong Resilience Institute, Environmental GIS/RS Centre, BK21+ Eco-Leader Education Centre at Korea University. In academic area, he is working as a president of Korean Society of Remote Sensing, director of Moonsuk Science Foundation, Editor in Chief of Forest Science and Technology and editors in some academic Journals. Internationally, he has served as director of SDSN Korea, Mid Latitude Region Network (MLRN), scientific steering committee of GCP-Korea Office, and advisory committee for International Cooperation Project between IIASA (International Institute of Applied System Analysis) and NRF (National Research Foundation) of Korea.

He has received many awards such as the Excellency Paper Award from Korean Federation of Science and Technology Societies (2014), Grand Leaders Award from Climate Change Centre (2014), Academic Award from Korean Society of Climate Change Research (2015), Achievement Award from Ministry of Environment (2015) etc.

With his academic background of forest management planning, he has mainly worked in the fields of forest inventory, planning, and management. Technically, he has employed spatio-temporal analysis and approach using GIS/RS, and Geostatistics. He has recently expanded his researches to detail assessment of regional carbon budget, climate change impact assessment with specifically concentrated on vulnerability and Disaster Risk Reduction (DRR), and ecosystem services in natural resources including forest and agricultural area.

His research has been focused on the region of Mid-Latitude Ecotone including Korean peninsula, North-Eastern Asia, and Central Asian Countries where water and food problems are getting serious with extreme climate condition. Nowadays, his researches are focusing on development of indicators for Sustainable Development Goals (SDGs), DRR, and climate change considering environmental and socio-economic conditions in Mid-Latitude region. And he has tried to suggest how to enhance adaptive capacity or resilience through environmental infrastructure and socio-economic policies for adapting climate change, reducing disaster risk, and achieving SDGs.

Professor Lee is widely recognized as one of the Korean leading experts with a highlight academic activity of more than 270 papers printed in the domestic and international journal. He is doing his international endeavors to give young scientists better opportunity to share their time and space for our better future.

Prof. Lee received his BS and MS degrees at Korea University on forestry and PhD degree at the College of Forestry of Goettingen University in Germany.

Abstract: Forests play an important role in regulating the carbon (C) cycle. The main objective of this study was to quantify the effects of South Korean national reforestation programs on carbon budgets. We estimated the changes in C stocks and annual C sequestration in the years 1961-2014 using Korea-specific models, a forest cover map (FCM), national forest inventory (NFI) data, and climate data. Furthermore, we examined the differences in C budgets between Cool forests (forests at elevations above 700 m) and forests in lower-altitude areas. Simulations including the effects of climate conditions on forest dynamics showed that the C stocks of the total forest area increased from 6.65 Tg C in 1961 to 476.21 Tg C in 2014. The model developed here showed a high degree of spatiotemporal reliability. The mean C stocks of the Cool forests and other forests increased from 4.03 and 0.43 Mg C ha-1, respectively, to 102.43 and 73.76 Mg C ha-1 at a rate of 1.82 and 1.36 Mg C ha-1 yr-1 during the same period. These results imply that, although the total Cool forest area of South Korea occupied only about 12.3% (772,788 ha) of the total forest area, the Cool forests play important roles in C balances and forest ecosystems in South Korea. Annual C sequestration totals are projected to decrease at a low rate in the near future because the overall growth rate of a mature forest decreases as the stand ages. Our results quantified forest C dynamics in South Korean forests before and after national reforestation programs. Furthermore, our results can help in development of regional and national forest management strategies to allow for sustainable development of society and to cope with climate change in South Korea.

ABS3634 (Invited): Bacterial bioremediation of polluted river water used for irrigation

Speech URL: http://www.academicconf.com/Video/Details?paperId=32306

Invited Speaker: Md. Abdul Karim

Professor, Laboratory of Microbiology, Department of Botany, University of Dhaka, Bangladesh

Biography: Dr. Md. Abdul Karim is a Professor and Principal Investigator of bioremediation of waste water in the Laboratory of Microbiology, Department of Botany, University of Dhaka, Dhaka. He earned his PhD at Ehime University, Japan. Research in his lab focuses on understanding of how to evaluate and control microbial activities in eutrophic environments. His current project includes 1) Bioremediation of eutrophic environments, 2) Characterization of hydrocarbon and textile dye degrading bacteria, 3) Isolation and characterization of multidrug resistant bacteria from environmental samples and hospital wastes; and 4) Understanding of how pathogenic bacteria can survive longer period in adverse condition in association with other microorganisms and their interrelationship. He has supervised over 27 postgraduates and PhD. He has published 62 peer-reviewed papers in microbiology, author of 12 book chapters and 3 research books.

Prof. Karim is an executive editor of Bangladesh Journal of Botany (BJB) and member of editorial board of Journal of Asiatic Society of Bangladesh, Science; Science International; World Journal of Applied Sciences; International Journal of Biosciences; Journal of Biodiversity and Environmental Sciences; Microbiology Research International, Journal of Biological Sciences. He was awarded by University Grants Commission in the recognition of his outstanding performance in his field.

Abstract. A wide variety of organic or inorganic compounds can cause the pollution of aquatic bodies and microorganisms often play a major role in determining the extent of this pollution. The river Buriganga is found to be Dhaka's main outlet of sewage waste. The residential and commercial establishments along the river cause discharge of wastewater either directly into the river or into drains and canals which subsequently find their way into the river. So, investigation of water quality of river to mitigate the problems is an utmost need. The present project has been undertaken for determination of seasonal changes in the water quality parameters and application of bioremediation for improvement the quality of water through enhancing the decomposition rate of pollutants using indigenous bacteria.

To get a fair idea about the microbial load as well as physicochemical properties of the river water samples were collected from 2 selected sites at 5 different seasons (summer, rainy, autumn, late autumn and winter). Temperature and pH of water varied 22 to 32ºC and 6.61 to 7.14, respectively, while air temperature varied between 16 and 33.5ºC. Aerobic heterotrophic plate count (HPC) showed a range of 1.0 × 105 to 20 × 105 cfu/ml in water, while, enteric and related bacterial count in 3 different media (SS agar, MacConkey agar and Cetrimide agar) showed 12 × 102 cfu/ml to uncountable, 3 × 102 to 19 × 102 cfu/ml, and 0-14 cfu/ml in water, respectively. Chemical content like NH4+-N, NO3--N, NO2--N, and PO4- values were showed the water is polluted. Furthermore, the load of aerobic HPC and the presence and abundance of Escherichia, Proteus morganii, Plesiomonas sp., Hafnia sp. and Alcaligenes sp. in the water clearly showed significant level of microbial pollution in the river.

To enhance heterotrophic activities after decomposing organic matter in the polluted river water, three promising bacterial strains isolated from the study site were introduced into the experimental system. Addition of strains Chryseobacterium arthroshpaerae strain: FDAARGOS 519, Bacillus subtilis strain: E20, and Bacillus subtilis subsp. subtilis strain: 168 stimulated net regeneration of dissolved inorganic nitrogen (DIN) and dissolved inorganic phosphorus (DIP) in the sample water collected in June 2019 by approximately 50%. Same exponential trends were also seen with the samples collected in October 2019. These results suggest that the application of such effective bacteria as described here would be promising for the stimulation of heterotrophic activities in the field of polluted environments.

ABS3306: To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

ABS3508: To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

ABS3524: Physiology and yield of job's tears under water saving irrigation

Speech URL: http://www.academicconf.com/Video/Details?paperId=31521

Speaker: Fiky Yulianto Wicaksono

Padjadjaran University, Java, Indonesia

Abstract. Job's tears (Coix lacryma-jobi L.) is one of the alternative food plants that grows in the

tropics. This plant is a C4 plant, based on carbon dioxide fixation in the photosynthesis process. C4 plants are tolerant of drought, so job's tears are considered to grow in the dry season with lack of water condition. This research was conducted to determine whether job's tears plants can grow and provide yield with water-saving technology. The study was conducted in the dry season at Ciparanje experimental field, in Jatinangor, Sumedang Regency. This research used quantitative methods by comparing the treatment of watering every four days (water saving technology) with watering every days (watering in general) in the vegetative phase. It used a sprinkler for two hours in one day with a discharge of 12.76 L per minute. Job's tears varieties used var. Stenocarpa and Ma-yuen. Observations were made on the percentage of plant death, leaf electrolyte leakage, stomatal conductance, chlorophyll content index, and harvest yield. The results showed that all plants survived and grew until harvest in both watering conditions. Watering every four days showed higher leaf electrolyte leakage, but stomatal conductance, chlorophyll content index, and harvest yield were lower than watering every day.

ABS3528: To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

ABS3548: Improving individual tree crown delineation and attributes estimation of tropical forests using airborne LiDAR Data

Speech URL: http://www.academicconf.com/Video/Details?paperId=31674

Speaker: Wan Shafrina Wan Mohd Jaafar

Earth Observation Center, Institute of Climate Change, National University of Malaysia, Selangor, Malaysia

Abstract. Individual tree crown (ITC) segmentation is an approach to isolate individual tree from the background vegetation and delineate precisely the crown boundaries for forest management and inventory purposes. ITC detection and delineation have been commonly generated from canopy height model (CHM) derived from light detection and ranging (LiDAR) data. Existing ITC segmentation methods, however, are limited in their efficiency for characterizing closed canopies, especially in tropical forests, due to the overlapping structure and irregular shape of tree crowns. Furthermore, the potential of 3-dimensional (3D) LiDAR data is not fully realized by existing CHM-based methods. Thus, the aim of this study was to develop an efficient framework for ITC segmentation in tropical forests using LiDAR-derived CHM and 3D point cloud data in order to accurately estimate tree attributes such as the tree height, mean crown width and aboveground biomass (AGB). The proposed framework entails five major steps: (1) automatically identifying dominant tree crowns by implementing semi-variogram statistics and morphological analysis; (2) generating initial tree segments using a watershed algorithm based on mathematical morphology; (3) identifying "problematic" segments based on predetermined set of rules; (4) tuning the problematic segments using a modified distance-based algorithm (DBA); and (5) segmenting and counting the number of individual trees based on the 3D LiDAR point clouds within each of the identified segment. This approach was developed in a way such that the 3D LiDAR points were only examined on problematic segments identified for further evaluations. 209 reference trees with diameter at breast height (DBH) ≥ 10 cm were selected in the field in two study areas in order to validate ITC detection and delineation results of the proposed framework. We computed tree crown metrics (e.g., maximum crown height and mean crown width) to estimate

aboveground biomass (AGB) at tree level using previously published allometric equations. Accuracy assessment was performed to calculate percentage of correctly detected trees, omission and commission errors. Our method correctly identified individual tree crowns with detection accuracy exceeding 80 percent at both forest sites. Also, our results showed high agreement (R2 > 0.64) in terms of AGB estimates using 3D LiDAR metrics and variables measured in the field, for both sites. The findings from our study demonstrate the efficacy of the proposed framework in delineating tree crowns, even in high canopy density areas such as tropical rainforests, where, usually the traditional algorithms are limited in their performances. Moreover, the high tree delineation accuracy in the two study areas emphasizes the potential robustness and transferability of our approach to other densely forested areas across the globe.

ABS3552: Sustainable extraction and analysis of bioactive metabolites in agri-food wastes

Speech URL: http://www.academicconf.com/Video/Details?paperId=31722

Speaker: Antonietta Baiano

Department of Agricultural Sciences, Food and the Environment, University of Foggia, Italy

Abstract. Polyphenols are known to be effective in prevention of several chronic and acute diseases. Humans are unable to synthesize these bioactive compounds and need to introduce them through a daily consumption of fruits and vegetables. According to the European Commission (2010), 38% of the food wastes is created during food processing. This implies that the increasing demand for processed plant products has led to a dramatic increase of solid wastes whose accumulation has strong environmental impact. In fact, it has been calculated that a ton of food waste is equivalent to 4.5 tons of CO_2 emissions. According to the Waste Framework Directive (Directive 2008/98/EC), the waste management hierarchy includes, in a decreasing order of priority, the following actions: waste prevention, re-use, recycling, other recovery, and disposal. In agreement with this hierarchy, waste valorisation is encouraged in order to prevent food waste being regarded as waste. In this light, the finding that agri-food wastes and by-products are rich and cheap sources of phenolic compounds should be considered even if these compounds must be separated from the matrix before their use as drugs, cosmetic ingredients, and dietary supplements. Extraction of phenolics is generally performed through solvents such as ethanol, methanol, acetone, ethyl acetate that, after a certain number of extraction cycles, must be discarded thus contributing in a negative way to the environmental impact. In order to both reduce the environmental impact of agri-food wastes and guarantee the sustainability of the extraction procedures, the aim of this research was the optimization of phenolic extraction from agri-food wastes and by-products using water as a solvent (eventually assisted by microwaves or ultrasounds). The study was focused on solid wastes originating by the production of: ready-to-use vegetables (defective spears and parts of shoots of asparagus, external leaves and stems of cauliflower, chicory, celery, and fennels; pistachio hulls, pomegranate peels, and tomato stems.); extra-virgin olive oils (olive leaves); coffee and beer brewing (coffee spent and spent grain). The nutraceutical values of the extracts were evaluated through the determination of their phenolic contents and antioxidant activity. A step of the work was also dedicated to the comparison of extraction by hot water (conventional), microwave- and ultrasound-assisted procedures). The highest extraction efficiency was obtained by conventional extraction. High phenolic content and antioxidant activity values were found in pomegranate peels but also coffee

spent, olive leaves, cauliflowers, and fennels showed significant concentrations of antioxidants.

ABS3553: Analysis of N-species (NO_3^-, NO_2^-, and NH_4^+) in Canadian marginal land soils

Speech URL: http://www.academicconf.com/Video/Details?paperId=31733

Speaker: Nicole Rodriguez

Department of Chemistry & Biology, Ryerson University, Toronto, Canada

Abstract. With an increasing global demand for cleaner energy, there is a growing need to find low-cost feedstocks to support the production of biofuel and bioenergy. Utilizing marginal land for production of these feedstocks alleviates the food vs. fuel competition that comes with use of prime agricultural land. This project forms a part of research in developing a low-cost and high production system for growing sorghum biomass on marginal lands in Canada. A major cost for consideration is fertilizer; particularly in the supplementation of nitrogen – a vital nutrient for plant growth. This research focuses on the analysis of nitrogen species (specifically NO_3^-, NO_2^-, and NH_4^+) in soil samples collected from selected field sites, with and without the application of nitrogen fertilizer. Soil cores are divided into 10 cm sections for depth profiling and samples are extracted using a synthetic precipitation solution to mimic natural processes. Upon analysis of the collected data, NO_3^- is shown to be the dominant species leached by atmospheric precipitate. Statistical analysis of the soil NO_3-N concentrations determined no significant difference between NO_3-N levels at any of the studied sites, prior to sorghum planting. After planting and application of fertilizer, there is a significant difference in NO_3-N concentration between fertilizer applied, and non-fertilized plots – but at the time of harvest, there is no longer a difference. Correlation of nitrogen levels (as NO_3-N) and sorghum height and biomass measurements show varying positive and negative correlation, therefore no conclusive interrelationship can be made between nitrogen levels and sorghum growth at this point from our preliminary results on the project.

ABS3555: Evaluation of different biodegradable protein-based containers for the controlled release of zinc to crops

Speech URL: http://www.academicconf.com/Video/Details?paperId=31753

Speaker: Mercedes Jiménez Rosado

Chemical Engineering Department, Higher Polytechnic School, Seville University, Spain

Abstract. The great demand for horticultural products has raised the need for fertilizers to obtain products without waiting for the usual regeneration time needed by the crops. However, the use of fertilizers causes other problems, such as contamination of the subsoil and groundwater, due to the low assimilation of the chemicals by the crops. In this work, different biodegradable containers for micronutrients, which allow their controlled release, have been developed to improve their assimilation and, thus, to solve the aforementioned problems. In this context, zinc has been incorporated into soy protein-based matrices, using different processing methods. All this led to matrices with diverse zinc percentages, differently distributed within the matrix. Consequently, the functionality of each matrix was evaluated,

studying the micronutrient release, matrix biodegradability and the mechanical properties of each system. Results showed that it is possible to carry out a controlled release of zinc through the biodegradation of a protein-based matrix, improving the efficiency of conventional methods for fertilizer incorporation.

ABS3567: Harnessing the rhizosphere microbiome of xerophytes growing in Cholistan

Speech URL: http://www.academicconf.com/Video/Details?paperId=31867

Speaker: Salma Mukhtar

School of Life Sciences, Forman Christian College (A Chartered University), Lahore, Pakistan

Abstract. Microbial communities associated with the rhizosphere and roots of desert halophytes play an important role in plants' growth and development. Very limited information has been available on the microbial diversity from arid environments of Pakistan. Hence in the current study, the microbial diversity from the rhizosphere and root endosphere of desert halophytes (*Zygophyllum simplex, Haloxylon salicoricum, Aerva javanica* and *Capparis decidua*) collected from Cholistan desert of Pakistan were compared by using culture-independent as well as culture-dependent approaches. Metagenomic analysis indicated that *Actinobacteria, Proteobacteria, Bacteroidetes* and *Firmicutes* were the most dominant phyla detected from the rhizosphere and root endosphere of all the halophytes while Thaumarchaeota, Chloroflexi, Euryarchaeota, Fusobacteria, Gemmatimonadetes, Deinococcus-Thermus, Acidobacteria, and Cyanobacteria were relatively less abundant but detected from all the rhizospheric soils. *Bacillus, Pseudomonas, Halomonas, Virgibacillus, Oceanobacillus, Halobacillus* and *Flavobacterium* were found to be abundant in the rhizosphere and roots of all the halophytes. Our results also showed that a change in soil moisture content and salinity correlated with significant differences in the alpha and beta diversity of microbial communities across rhizospheric soils and root endospheres. *Bacillus, Halobacillus, Virgibacillus, Oceanobacillus, Exiguobacterium, Halomonas, Pseudomonas, Marinobacter, Klebsiella* and *Kocuria* were the dominant bacterial genera isolated and identified by using culture-dependent approach. This study revealed that microbial diversity analysis through culture-independent as well as culture-dependent approaches can be used to study how changes in abiotic factors such as moisture content and salinity in soil affect the microbial communities in rhizospheric soils and root endosphere.

ABS3575: Growth and yield of rice plants (*Oryza sativa*) grown in soil media containing several doses of inorganic fertilizers and sprayed with lombok brown algae extracts

Speech URL: http://www.academicconf.com/Video/Details?paperId=31907

Speaker: H Sunarpi

Bioscience and Biotechnology Research Center, Faculty of Mathematics and Natural Sciences, The University of Mataram, Mataram, Indonesia

Abstract. The use of inorganic fertilizers in rice production system in Indonesia, increases to an exessive level of application, 300 kg urea, 200 kg TSP and 200 kg KCl per hectare, respectively. This increases cost of rice production, reduces soil fertility and farmers income, and harm environment. Therefore, it is important to find out organic biostimulants which could induce growth and yield of rice in a low level of inorganic fertilizer. This article reports the effect of Lombok brown algae extracts on growth and yield of rice plants grown in soil media containing several dose of inorganic fertilizers. Lombok brown algaes, such as *Sargassum crassifolium, Sargassum cristaefolium, Sargassum aquifolium,* and *Turbinaria murayana*, were collected in Lombok Indonesia coastal beach, and they were extracted using water. Each liquid extract of brown algae, was sprayed to rice plants grown in soil media containing 0, 50%, or 100% dose of N, P and K fertilizers recomended by Indonesian Ministry of Agriculture. The result showed that effect of liquid brown algae extract to chlorophyll content in leaf, N, P,K content in tissue, growth and yield of rice plants, depends on dose of inorganic fertilizer applied in soil media. Similar phenomena were also found in growth and yield parameters. An interesting result found in this experiment that there was no significant effect of liquid brown algae extract on chlorophyl content in leaf, inorganic fertilizer content in tissue, growth and yield of rice plants grown in media containing 50% and 100% inorganic fertilizers. The indicates that the application of inorganic fertilizers could be reduced to 50% when the rice plants are also sprayed with liquid brown algae extract to gain the same rice yield of the rice plants supplied with 100% organic fertilizer in soild media. Therefore, rice production becomes more efficient, could reduce cost production, increase farmer's income, and safe our environment.

ABS3601: Green preservatives for post-harvest agri products

Speech URL: http://www.academicconf.com/Video/Details?paperId=32022

Speaker: Nawal Kishore Dubey

Department of Botany, Institute of Science, Banaras Hindu University, Varanasi, India

Abstract. Agricultural produce is prone to biodeterioration caused by fungal infestation and subsequent mycotoxin contamination and usually situation worsen due to congenial climates in developing and underdeveloped countries. Plants products are preferred as preservatives over synthetic chemicals to combat these infestations due to their biocompatibility and green action. In our lab we have proven the extraordinary potential of many essential oils-based formulations as antifungal, antimycotoxigenic, antioxidant and with favourable safety profile. The essential oils also found to protect the active principles of stored seed grains and raw herbal drugs. In addition, we have encapsulated selected essential oils in order to enhance their bioefficacy to manifolds. We have also developed the essential oils formulations with better bioefficacy and patented the same which is now in technology transfer stage. During our research, we have also tracked the antifungal and antiaflatoxigenic mode of action selected essential oil. Our findings pave the way to work upon new avenue of using plant products basically essential oils in combating biodeterioration of agricultural produce and other related materials during post-harvest processing which eventually will boost up the global food security and also reduce the risk of exposure of synthetic chemicals to human.

Part IV Acknowledgements

On behalf of the Organizing Committee of ABS/ABB 2020, we would like to take this opportunity to express our sincere thanks to the support and contributions of participants from all over the world and Technical Program Committee members who have given their professional guidance and valuable advice as reviewers and the successful organization of the conference. Special thanks go to Prof. Machito Mihara, Tokyo University of Agriculture, Japan, Prof. Xuqiao Feng from Bohai University, China, Prof. Hisayoshi Hayashi from University of Tsukuba, Japan and Prof. Moniruzzaman Khondke and Prof. Md. Abdul Karim from University of Dhaka, Bangladesh and with their continuous support and valuable opinions for the organization of the conference. Below are the lists of the Technical Program Committee members and Top Contributors of the reviewers. For those who contribute to the success of the conference organization without listing the name here, we would love to say thanks as well.

Technical Program Committee

ABS 2020

General Chair
Prof. Machito Mihara, Tokyo University of Agriculture, Japan

Chair of Technical Program Committee
Prof. Xuqiao Feng, Bohai University; Institute for Science and Technology of Fruits and Vegetables, China

Local Committee Members
Prof. Hiromu OKAZAWA, Tokyo University of Agriculture, Japan
Assoc. Prof. Takahiko Nakamura, Tokyo University of Agriculture, Japan
Assoc. Prof. Toru Nakajima, Tokyo University of Agriculture, Japan
Assist. Prof. Narong Touch, Tokyo University of Agriculture, Japan

Technical Program Committee
Prof. Hisayoshi Hayashi, University of Tsukuba, Japan
Prof. Vilai Rungsardthong, King Mongkut's University of Technology North Bangkok, Thailand
Prof. Wenqiao Yuan, North Carolina State University, USA
Prof. Hui WANG, Tsinghua University, China
Prof. Mikihisa Umehara, Graduate School of Life Sciences, Toyo University, Japan
Prof. Vítor João Pereira Domingues Martinho, Polytechnic Institute of Viseu, Portugal
Prof. Tomasz Lesiow, Wroclaw University of Economics, Poland
Prof. Anas Sarwar Qureshi, University of Agriculture Faisalabad, Pakistan
Prof. Bal Ram Singh, Norwegian University of Life Sciences, Norway
Prof. Hak-Ryul Kim, Kyungpook National University, Korea
Prof. Abd El-Rahman Abd El-Raouf AHMED, Agricultural Engineering Research Institute, Egypt
Prof. Maria Luisa da Silva, Federal University of Pará State, Brazil

Prof. Job Nmadu, Federal University of Technology, Nigeria
Prof. Algirdas Jasinskas, Aleksandras Stulginskis University, Lithuania
Prof. Moniruzzaman Khondke, University of Dhaka, Bangladesh
Prof. Md. Abdul Karim, University of Dhaka, Bangladesh
Prof. Joao Simoes, University of Trásos-Montese Alto Douro, Portugal
Prof. Liping Xu, Nantong Institute Technology, China
Prof. Muhammad Ovais Omer, University of Veterinary and Animal Sciences, Pakistan
Prof. Bhumi Nath Tripathi, Indira Gandhi National Tribal University, India
Assoc. Prof. Cristian Popscu, University of Pitesti, Romania
Assoc. Prof. Bangun Nusantoro, Gadjah Mada University, Indonesia
Assoc. Prof. Khim Phin Chong, Universiti Malaysia Sabah, Malaysia
Assist. Prof. Izabela Michalak, Wrocław University of Science and Technology, Poland
Dr. Janyawat T. Vuthijumnonk, Rajamangala University of Technology Lanna, Thailand
Dr. Rozina Khanam, Bangladesh University of Professionals (BUP), Bangladesh
Dr. Amaresh Chandra, ICAR-Indian Institute of Sugarcane Research, India
Dr. Ádina L. Santana, University of Campinas, Campinas, Brazil
Dr. Amit Kumar Pandey, Rajasthan University of Veterinary and Animal Sciences, India
Dr. Corina Carranca, National Institute of Agricultural Research and Veterinary (INIAV), Portugal
Dr. Aurelija Rudzianskaite, Vytautas Magnus University Agriculture Academy, Lithuania
Dr. Paul (Long) Cheng, Lecturer, The University of Melbourne, Australia

ABB 2020

Technical Program Committee
Prof. Ani Idris, Universiti Teknologi, Malaysia
Prof. Young Shik Park, Inje University, Korea
Prof. Richard Daniellou, University of Orléans, France
Prof. Mohamed Chiban, Ibn Zohr University, Morocco
Prof. Alberto Mannu, Leibniz Institute for Catalysis, Germany
Prof. Siva Ramamoorthy, Vellore Institute of Technology, India
Prof. Majekodunmi O. Fatope, Sultan Qaboos University, Oman
Prof. Zhongming Fang, Wuhan Institute of Bioengineering, China
Prof. Pongsak Rattanachaikunsopon, Ubon Ratchathani University, Thailand
Prof. Toshifumi Tsukahara, Japan Advanced Institute of Science and Technology, Japan
Prof. Amany M. A. El-Sikaily, National Institute of Oceanography & Fisheries (NIOF), Egypt
Prof. Bhumi Nath Tripathi, Indira Gandhi National Tribal University, India
Assoc. Prof. Younes Mooussaoui, University of Gafsa, Tunisia
Assoc. Prof. Xingjun Li, Academy of the State Administration of Grains, China
Assoc. Prof. Alexander D. Kroumov, Bulgarian Academy of Sciences, Bulgaria
Assist. Prof. Serena Massari, University of Perugia, Italy
Dr. Shadia A. Elsayed, Damietta University, Egypt
Dr. Shuo Lu, University of Texas Medical School, USA
Dr. Ricardo Lagoa, ESTG-Polytechnic Institute of Leiria, Portugal
Researcher Yulong Liang, UT MD Anderson Cancer Center, USA
Cristina Peixoto, Downstream Processes Lab, Portugal

Website

Contact Us
Lydia Shi
+86-17362961533
abs@absconf.org / info@abbconf.org
www.absconf.org / www.abbconf.org