



National center
for **Biotechnology**



DRAFT

2ND INTERNATIONAL FORUM FOR AGRI-BIOTECHNOLOGY
“Biotechnology for Climate Resilience and Food Security”

AGENDA

4-5 July 2023, Astana, Kazakhstan

<u>TUESDAY, 4 July 2023/08:30-</u>		
REGISTRATION – 08:30-09:00		
OPENING SESSION 09:00-09:50		
Moderator: Dr. Ismail M. Abdelhamid, Advisor at Programs and Projects Department, IOFS https://us06web.zoom.us/j/81712264134?pwd=RnQ5UkNJTjJqSHEwMWRROnlTYVBDZz09		
09:00 – 09:03	Words of introduction	Moderator
09:03 – 09:05	Recitation of Holy Quran	
09:05 – 09:10	Video of IOFS	
09:10 – 09:15	Welcoming Speech	H.E. Prof. Yerlan A. Bidaulet <i>Director-General, Islamic Organization for Food Security (IOFS)</i>
09:15 – 09:20	Welcoming Speech	H.E. Prof. M. Iqbal Choudhary <i>Coordinator General of the Ministerial Standing Committee on Scientific and Technological Cooperation of the OIC (COMSTECH)</i>
09:20 – 09:25	<i>Welcoming Speech</i>	H.E. Mr. Tlektés Yespolov <i>President of the Academy of Agricultural Sciences of the Republic of Kazakhstan</i>
09:25 – 09:30	Video address	H.E. Zehra Zümrit SELÇUK <i>Director-General, The Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC)</i>
09:30 – 09:35	Video address	H.E. Dr. Ahmad K. Sengendo <i>Assistant Secretary General for Economic Affairs of the Organization of Islamic Cooperation (OIC)</i>
09:35 – 09:40	Welcoming Speech	H.E. Mr. Darkhan Akhmed-Zaki <i>Chairman of the Committee of Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan</i>
09:40 – 09:45	Launch of Food Security Hub 12	Prof. Dr. Zulfıqar Ali, Director Programs and Projects Department, IOFS
09:45 –	The signing of Memorandum of	IOFS, Academy of Science of the Republic of

09:50	Understanding	Tajikistan and Academy of Science of the Republic of Kazakhstan
09:50 – 09:55	Vote of thanks Group Photo	Moderator
NETWORKING COFFEE (09:55 – 10:15)		
TECHNICAL SESSION 1 – GREEN BIOTECHNOLOGY (10:15 – 13:00)		
Parallel session 1–Hall 1		
https://us06web.zoom.us/j/81712264134?pwd=RnQ5UkNJTjJqSHEwMWRROnlTYVBDZz09		
Chair: Prof. Vyacheslav Ogay, NCB, Kazakhstan		
Rapporteur: Dr. Shoaib Ur Rehman, Institute of Plant Breeding and Biotechnology, MNS University of Agriculture, Pakistan		
Session Moderator: Ms. Makpal Bulatova, Program Manager		
	Cutting-edge biotechnologies	
10:15 – 10:20	Best practices of cutting-edge biotechnologies to address food security	Dr Ismail M. Abdelhamid <i>Advisor at Programs and Projects Department, IOFS</i>
10:20 – 10:30	Development and implementation of RNA interference-based technology to confer antiviral resistance in crop species	Dr. Maxim Sutula, National Center for Biotechnology, Kazakhstan
10:30 – 10:40	Crop Biotechnologies	Prof. Abdessamad Amine, Faculty of Sciences and Technology, Morocco (Online)
10:40 – 10:50	Development of Disease Resistance in Plants Using CRISPR/Cas Technology: A step Forward to Ensuring Food Security	Dr. Zulqurnain Khan, Assistant Professor, Institute of Plant Breeding and Biotechnology, MNS University of Agriculture, Pakistan
10:50 – 11:00	Effects of plant growth-promoting rhizobacterium (PGPR) on growth and antioxidant enzyme activities in salt-stressed durum wheat (<i>Triticum durum</i>)	Dr. Imen Hemissi, Agronomic Sciences and Techniques Laboratory (LR16 INRAT 05), National Institute of Agricultural Research of Tunisia (INRAT), Carthage University, Ariana 2049, Tunisia
11:00 – 11:10	Biotechnological solutions to address climate change in Pakistan	Dr. Muhammad Akhtar, Director General/Chief Scientist Agri. (Research) AARI, Agriculture Department Punjab, Pakistan
11:10 – 11:20	Revolutionizing Agriculture: Gene Stacking and Genome Editing for enhanced crop resilience: CRISPR/Cas9 Mediated Genetic Improvement of Crops	Dr. Sabin Aslam, Postdoc Fellow, National Center for Genome Editing (NCGE), D-8 Center for Advanced Studies in Agriculture and Food Security, University of Agriculture Faisalabad, Pakistan
11:20 – 11:25	Video Present the status of the biotechnological advancement in Bangladesh	Dr. M. S. Kabir, Director General, Bangladesh Rice Research Institute, Gazipur, Bangladesh.
11:25 – 11:30	Video VIGS-mediated Functional Genomics: Finding New Genes for Developing Climate Resilient Crops	Ms Saba Yasin, Research Associate, Institute of Plant Breeding and Biotechnology, MNS University of Agriculture, Pakistan

11:30 – 11:35	Video Social Issues in Gene Editing and Public Acceptance	Mr, Nehal Khan, Research Associate, D-8 Centre for Agriculture and Food Security, University of Agriculture Faisalabad, Pakistan
11:35 – 12:05	Panel discussion 1. How RNAi/CRISPR/VIGS can be manipulated in crop protection and production in OIC food system? 2. What's ready (in-hand) solution of these technologies available? 3. What are regulatory and financial requirements for commercial use? 4. What's social acceptance level? How can it be addressed through scientific and regulatory means? Panelist: Dr. Maxim Sutula, Dr. Zulqurnain Khan, Dr. Imen Hemissi, Dr. Muhammad Akhtar, Dr. Sabin Aslam Q&A/Discussion	
	Plant Gene Banking	
12:05 – 12:15	Sustainable plant gene banking in OIC geography	Ms Makpal Bulatova, Program Manager Programs and Projects, IOFS
12:15 – 12:25	Seed Center Efforts in Maintaining Plant Genetic Resources and Improving Seed & Seedlings	Dr. Naser B. Almarri, Director General Seed Center, Seed Center & Plant Genetic Resources Bank, KSA
12:25 – 12:35	Creation of an <i>in vitro</i> collection of an ornamental rare and endangered <i>Malus niedzwetzkyana</i> for conservation and reproduction	Nurtaza Aidana, scientific staff, National Center for Biotechnology, Kazakhstan
12:35 – 13:00	Panel discussion 1. How can plant germplasm conservation, enhancement and utilization be improved for the food secure system of OIC? 2. What future partnership at global and regional level is needed to enabling policies for efficient PGR management and utilization? Panelist: Dr. Naser B. Almarri, Nurtaza Aidana , Dr. Muhammad Akhtar, Dr. M. S. Kabir Q&A/Discussion	
NETWORKING LUNCH /PRAYER (13:00 – 14:15) TBC		
TECHNICAL SESSION 2 – BREEDING TOOLS (14:15 – 16:10)		
Parallel session 1–Hall 1		
https://us06web.zoom.us/j/81712264134?pwd=RnQ5UkNJTjJqSHEwMWRROnlTYVBDZz09		
Chair: Dr. Muhammad Akhtar, Director General/Chief Scientist Agri. (Research) AARI, Agriculture Department Punjab, Pakistan		
Rapporteur: Dr. Maxim Sutula, National Center for Biotechnology, Kazakhstan		
Session Moderator: <i>Prof Dr. Zulfiqar Ali, Director Programs and Projects, IOFS</i>		
14:15 – 14:20	Breeding climate SMART wheat	<i>Prof Dr. Zulfiqar Ali, Director Programs and Projects, IOFS</i>
14:20 – 14:30	Role of Wild Wheat Relative to sustained food security	Dr Nawal Abdo, Head of cereal and legume research division, National Agriculture Research Center Baqa'a Jordan (Online)
14:30 –	Proper strategies for shifting the	Dr Kanat Yermekbayev, Head of Molecular Genetics and Genomics Laboratory, Institute of

14:40	plant breeding from traditional to genomic selection should be prioritised in Kazakhstan	Biotechnology and Ecology, Zhetysu University named after I Zhansugurov
14:40 – 14:50	Development of SNP Based High Throughput Molecular Assay for Gene (s) Conferring High Grain Yield in Wheat	Dr. Shoaib Ur Rehman, Assistant Professor, Institute of Plant Breeding and Biotechnology, MNS University of Agriculture, Pakistan
14:50 – 15:00	Features of androgenesis in anther cultures of varieties and lines of spring wheat of Kazakh breeding	Assel Yesimseitova, Researcher, National Center for Biotechnology, Kazakhstan
15:00 – 15:10	Novel somatic hybrids and autotetraploid breeding parents for citrus scion improvement	Prof. Bushra Sadia, Director CABB, University of Agriculture Faisalabad, Pakistan
15:10 – 15:20	The influence of microbial biological products on the formation of symbiotic potential in the creation of new varieties of perennial herbs	Rukavitsina I.V. Head of the Laboratory of Microbiology of "SPC GF named after A.I. Barayev" LLP, Barayev, Kazakhstan
15:20 – 16:10	Panel discussion 1. How partnership among OIC member states be improved for sharing of experiential learnings, germplasm and capacity building? 2. What can we do more for partnership to upscaling best practices of genetics and breeding technologies? Panelist: Dr Kanat Yermekbayev, Dr. Shoaib Ur Rehman, Assel Yesimseitova , Prof. Bushra Sadia, Rukavitsina I.V. Q&A/Discussion	
TECHNICAL SESSION 3 – THEME: MICROBIAL BIOTECHNOLOGY (14:15 – 16:10)		
Parallel session 2– Hall 2		
https://us02web.zoom.us/j/83673323816?pwd=NlV6cWVmMjRMUUhwRTJlVbVlORlMxdz09		
Chair: Dr. Qamar Shakil, Senior Scientists, Punjab Agriculture Department, Pakistan		
Rapporteur: Ms Saba Yasin, Research Associate, Institute of Plant Breeding and Biotechnology, MNS University of Agriculture, Pakistan		
Session Moderator: Mr Abdelaziz Hajjaji, Program Manager		
14:15 – 14:20	Microbial Biotechnology interventions to control transboundary pests and diseases	Abdelaziz Hajjaji Program Manager at IOFS
14:20 – 14:30	Microorganisms in the bioconversion of keratin wastes	Saniya Aktayeva, Laboratory of Genetics and Biochemistry of Microorganisms, National Center for Biotechnology, Kazakhstan
14:30 – 14:40	Biotechnology and modification of biological-based insecticides to cope with climatic changes.	Prof. Hisham ELShishtawy, Agricultural Genetic Research Institute (AGERI), Agricultural Research Center (ARC), Ministry of Agriculture and Land Reclamation, Egypt (Online)
14:40 – 14:50	Efficacy of Nanoparticles, Bacteria, and Signaling Molecules in Mitigation of Metal Toxicity in Cereals	Dr. Zahra Jabeen, Department of Biosciences, COMSATS University Islamabad, Pakistan.
14:50 – 15:00	Unlocking the potential of biofilm-forming plant growth-promoting bacteria for growth and yield	Dr. Muhammad Naveed, ISES University of Agriculture Faisalabad Pakistan. (Online)

	enhancement in wheat	
15:00 – 15:10	Transforming Plant Growth and Disease Management using Microbiome Technologies	Dr Amalia Mohd Hashim, Department of Microbiology, Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia, Malaysia
15:10 – 15:20	Harnessing the Plant Microbiome to Combat Climate Change	Prof. Dr Shahid Mukhtar, Co-Director, Genetics and Genomic Sciences Undergraduate Program, The University of Alabama at Birmingham, USA (Online)
15:20 – 15:30	Monitoring of antibiotic resistance of <i>Staphylococcus aureus</i> strains and correlation of phenotype with the presence of Nuc, blaZ, ermC and TetK genes.	Mukanov Tamerlan, A. Baitursunov Kostanay Regional University, Kazakhstan
15:30 – 16:10	<p>Panel discussion</p> <ol style="list-style-type: none"> 1. Plant-microbe relationship provides sustainable solutions for crop production and crop protection. 2. How can these solutions be implemented through the contribution of governments, R&D organizations, entrepreneurs etc? 3. How can youth be engaged to achieve food security? Success stories or future endeavors. <p>Panelist: Aktayeva Saniya, Dr. Zahra Jabeen, Dr Amalia Mohd Hashim, Mukanov Tamerlan Q&A/Discussion</p>	
<p>DINNER – 19:00-22:00 Venue: Wyndham Garden</p>		

2ND Day - WEDNESDAY, 5 July 2023

INTRODUCTION & SESSION 4 – THEME: FOOD BIOTECHNOLOGY (09:00-10:40)

Parallel session 1– Hall 1

<https://us06web.zoom.us/j/81712264134?pwd=RnQ5UkNJTjJqSHEwMWRROnlTYVBDZz09>

Chair: Dr. Shuga Manabayeva, Head of Plant Genetic Engineering Lab, NCB, Kazakhstan.

Rapporteur: Dr. Sabin Aslam, National Center for Genome Editing (NCGE), D-8 Center for Advanced Studies in Agriculture and Food Security, University of Agriculture Faisalabad, Pakistan

Session Moderator: Ms Shakhlo Atabaeva Program Manager

09:00 – 09:05	Introductory Remarks for Day 2	Moderator
09:05 – 09:10	Food Safety and Regulation of GMs	Ms Shakhlo Atabaeva, Program Manager IOFS
09:10 – 09:20	Genetically engineered enzyme preparations for the processing of plant carbohydrates	Assel Kiribayeva, National Center for Biotechnology, Kazakhstan
09:20 – 09:30	Cloning and expression of Streptomyces mobaraensis pro-transglutaminase enzyme in Pichia Pastoris	Doç. Dr. Aysun Özçelik, Akdeniz Üniversitesi Ziraat Fakültesi, Tarımsal Biyoteknoloji Bölümü, Dumlupınar Bulvarı Kampüs 07058, Antalya, Türkiye (Online)
09:30 – 09:40	Veterinary and sanitary assessment of the quality and safety of fish in WKR reservoirs	Askhat Zhumabaev, Zhangir Khan West Kazakhstan Agrarian Technical University, Kazakhstan
09:40 – 09:50	Biofortification in management of malnutrition	Prof. Dr. Umar Farooq, Professor and Faculty Coordinator, Faculty of Food Science & Nutrition, MNS-University of Agriculture, Multan, Pakistan (Online).
09:50 – 10:00	The use of recombinant proteins in the development of diagnostic tests for the detection of Campylobacter jejuni	Zhakhina A., S. Seifullin Kazakh Agrotechnical Research University, Kazakhstan
10:00 – 10:10	Diagnostic markers for authenticity and quality of animal products	Dr. Hossam Rushdi, Associate Professor of Animal Breeding and Genetics, Cairo University, Giza, Egypt (Online).
10:10 – 10:20	Designing ICA test for the detection of antibiotics in livestock products	Zhagipar Fariza, S. Seifullin Kazakh Agrotechnical Research University, Kazakhstan
10:20 – 10:25	Video New approaches of camel and bovine chymosins in cheesemaking	Zhiger Akishev, National Center for Biotechnology, Kazakhstan
10:25 – 10:40	Panel discussion 1. How to address malnutrition in the OIC geography through functional foods? 2. Addressing quality standards is challenging – what are solutions and opportunities? 3. Concerns about healthy food and food security – innovative ideas/solutions. Panelist: Kiribayeva Assel, Zhumabaev Askhat, Prof. Dr. Umar Farooq, Zhakhina A., Dr. Hossam Rushdi, Zhiger Akishev	

Q&A/Discussion		
NETWORKING COFFEE (10:40 – 11:00)		
INTRODUCTION & SESSION 5 THEME: ANIMAL BIOTECHNOLOGY (09:00 – 12:00)		
Parallel session 2–Hall 2		
https://us02web.zoom.us/j/83673323816?pwd=NIV6cWVmMjRMUUhwRTJVbVIORlMxdz09		
Chair: Prof. Bushra Sadia, Director CABB, University of Agriculture Faisalabad, Pakistan		
Rapporteur: Dr. Amalia Mohd Hashim, Department of Microbiology, Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia, Malaysia		
Session Moderator: Ms. Amina Akhmetzhanova, Program Manager, IOFS		
09:00 – 09:05	Introductory Remarks for Day 2	Moderator
09:05 – 09:15	IOFS Livestock Ecosystem Program	Ms. Amina Akhmetzhanova <i>Program Manager, IOFS</i>
09:15 – 09:25	Best Practices in Animal Biotechnology for Improved Livestock Health and Productivity	Ms. Rasha Aljehani <i>Program Manager, IOFS</i>
09:25– 09:35	Population Structure and Genetic Diversity of Kazakh Horses	Dr. Yerkebulan Talzhanov <i>Kazakh Research Institute of Animal Husbandry and Fodder Production (online)</i>
09:35 – 09:45	Genetic Potential of Animal Husbandry in Kazakhstan and the Use of Modern Biotechnologies in the Production of Livestock Products.	Mr. Bolat Seisenov <i>Chairman of Executive Board, “Asyl Tulik” Republican Center for Breeding in Animal Husbandry</i>
09:45 – 10:40	Panel discussion <ol style="list-style-type: none"> 1. What are the key challenges and potential solutions to integrating traditional breeding methods with modern biotechnology practices? 2. With the rise of animal biotechnology, what steps can be taken to ensure that traditional breeds and the genetic diversity they represent aren't lost? 3. What are the most significant technological advancements in animal biotechnology that could contribute to bridging the gap between developed and developing countries in animal genetic resources management and conservation? 4. From a bioethical perspective, what considerations must be taken into account in the deployment of animal biotechnology for livestock improvement, especially in the context of export-oriented production? Panelist: Ms. Rasha Aljehani, Dr. Yerkebulan Talzhanov, Mr. Bolat Seisenov	
Q&A/Discussion		
NETWORKING COFFEE (10:40 – 11:00)		
11:00 – 11:10	An Overview of Animal Breeding Programs in the OIC Geography	Ms. Amina Akhmetzhanova <i>Program Manager, IOFS</i>
11:10 – 11:20	AU-IBAR Programs and Projects Global Plan of Action for Sustainable Use of Animal Genetic Resources in Africa	Dr. Mary Mbole-Kariuki <i>Technology Innovation and Skill Development Expert, African Union-Interafrican Bureau for Animal Resources (AU-IBAR) (online)</i>
11:20 – 11:30	Lab Grown Biotech or Natural Meat: Choices in the Perspectives of Climate Change and One Health	Dr. Qamar Shakil <i>Punjab Agriculture Department, Pakistan</i>

11:30 – 11:40	ILRI Livestock Genetics Program Activities	Dr. Okeyo Mwai <i>Deputy Program Leader of Livestock Genetics Program, International Livestock Research Institute (ILRI) (online)</i>
11:40 – 11:50	Pathways to Reduce the Gap Between Developing and Developed Countries in the Field of Animal Genetic Resources Management and Conservation	Prof. M'Naouer Djemali <i>The First Director-General and Co-founder of the National Gene Bank of Tunisia National Coordinator of Animal Genetic Resources-Tunisia, Animal Genetic and Feed Resources Research Lab., INAT, University of Carthage (online)</i>
11:50 – 12:10	<p>Panel discussion</p> <ol style="list-style-type: none"> 1. Given the current progress and barriers in sustainable animal gene banking, particularly in OIC geography, how can we bridge the gap between developing and developed countries in the field of animal genetic resources management and conservation?" 2. What future innovations or trends in animal biotechnology do you anticipate, especially with regard to improving the productivity and health of livestock while also promoting conservation? 3. How do lab-grown biotech meat and natural meat compare in terms of sustainability, and how does this impact climate change and the 'one health' perspective? 4. What can we do more for partnership to upscaling best practices of genetics and breeding technologies? <p>Panelist: Dr. Mary Mbole-Kariuki, Dr. Qamar Shakil, Dr. Okeyo Mwai, Prof. M'Naouer Djemali Q&A/Discussion</p>	
<p>SESSION 6 – VISIT to NCB Facilities (12:10-12:50) Visiting NCB laboratories This visit will be provided by NCB Managing Director Dr. Vyacheslav Ogay and supported by the IOFS Program manager Bakytzhan Arystanbek</p>		
12:10 – 13:00	Video presentations/ Visit to NCB	
<u>NETWORKING LUNCH /PRAYER (13:00 – 14:20)</u>		
<p>SESSION 7 – POLICY AND ROUNDTABLE Hall 1 https://us06web.zoom.us/j/81712264134?pwd=RnQ5UkNJTjJqSHEwMWRROnlTYVBDZz09 Session Moderators: Dr. Zulqurnain Khan, Institute of Plant Breeding and Biotechnology, MNS University of Agriculture, Pakistan Ms Khazima, Program Manager, COMSTECH</p>		
14:20 – 14:30	Enabling policy environment to promote the adoption of new technologies for food security	Prof Asif Kamran, D-8 Centre for Agriculture and Food Security, University of Agriculture Faisalabad, Pakistan
14:30 – 15:15	Panel discussion on recommendation draft – Green and microbial Biotechnology	Prof. Vyacheslav Ogay, NCB, Kazakhstan Dr. Muhammad Akhtar, Director General/Chief Scientist Agri. (Research) AARI, Agriculture Department Punjab, Pakistan Dr. Qamar Shakil, Senior Scientists, Punjab Agriculture Department, Pakistan All panelists Ms Helen Browning, Chief Executive, Soil Association UK

15:15 – 15:45	Panel discussion on recommendation draft – Animal and Food Biotechnology	Prof. Bushra Sadia, Director CABB, University of Agriculture Faisalabad, Pakistan Dr. Shuga Manabayeva, Head of Plant Genetic Engineering Lab, NCB, Kazakhstan. All panelists
NETWORKING COFFEE – (15:45 – 16:00)		
SESSION 8 – DISCUSSIONS AND CLOSING		
Hall 1		
https://us06web.zoom.us/j/81712264134?pwd=RnQ5UkNJTjJqSHEwMWRROnlTYVBDZz09		
Session Moderator: Prof. Dr. Zulfiqar Ali, IOFS Director of Programs and Projects Department		
16:00 – 16:40	Presentation of recommendations by session Chairs Prof. Vyacheslav Ogay, NCB, Kazakhstan Dr. Muhammad Akhtar, Director General/Chief Scientist Agri. (Research) AARI, Agriculture Department Punjab, Pakistan Dr. Qamar Shakil, Senior Scientists, Punjab Agriculture Department, Pakistan Prof. Bushra Sadia, Director CABB, University of Agriculture Faisalabad, Pakistan Dr. Shuga Manabayeva, Head of Plant Genetic Engineering Lab, NCB, Kazakhstan.	
<i>All dignitaries, panelists and participants</i>		
Reflection of Participants on the Forum		
16:40 – 16:55	Words of wisdoms from dignitaries	H.E. Mr. Tidjani, Abdoul Kadri H.E. Prof. M. Iqbal Choudhary H.E. Prof. Yerlan A. Baidautet
16:55 – 17:00	Vote of Thanks	Director PPD, IOFS
17:00	Group Photo	All participants
END of FORUM		