

International Conference on Eco-Smart Agriculture

Harnessing Stress Resilient Plants for Food Security and Beyond

Funded by Sindh Higher Education Commission
January 28-30, 2026

Program



Organized by
Dr. M. Ajmal Khan Institute of Sustainable Halophyte Utilization
University of Karachi

In collaboration with
Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology, Karachi

Inaugural Session – Wednesday (January 28, 2026)

09:30	Registration
11:00	Recitation from the Holy Quran
11:05	Na'at-e-Rasool-e-Maqbool (SA)
11:10	National Anthem
11:15	Welcome address by <i>Dr. Irfan Aziz</i> , Director Dr. M. Ajmal Khan Institute of Sustainable Halophyte Utilization, University of Karachi
11:25	Keynote address by <i>Prof. Dr. Ali El-Keblawy</i> [Eco-smart agriculture in arid regions: Biochar, biostimulants, and green nanomaterials to build stress- resilient cropping systems], University of Sharjha, UAE
11:50	Address by <i>Prof. Dr. Bilquees Gul</i> , Dean, Faculty of Science, University of Karachi
12:00	Address by <i>Shahnaz Wazir Ali</i> , The Honourable President SZABIST
12:10	Address by <i>Prof. Dr. Khalid Mahmood Iraqi</i> , The Honourable Vice Chancellor, University of Karachi
12:25	Address by the Chief Guest, <i>Mr. Ismail Rahoo</i> , The Honourable Minister, Universities & Boards, Govt. of Sindh and Pro- Chancellor, University of Karachi
12:35	Vote of Thanks by <i>Dr. Muhammad Zaheer Ahmed</i> , Conference Secretary, MAK-ISHU
12:40	Presentation of Shields/Souvenirs
01:00	Lunch

Day 1: Technical Sessions (January 28, 2026; Wednesday)
Session 1: Biotechnology, Nanotechnology & Precision Innovations
(02:00 pm to 03:30 pm) (Conference room - First Floor)

Chair: Ahmad Aldrie Amir / *Co-Chair:* M. Ajmal Shah

INVITED PRESENTATIONS		
Time	Name of the Presenter	Title
02:00 – 02:30	Rehana Kausar	Biometric responses of maize (<i>Zea mays</i> L.) genotypes by the application of green synthesized silver nanoparticles (AgNPs).
02:30 – 02:45	Habib-ur-Rehman Athar	Chlorophyll Fluorescence as a High-Throughput Phenotyping Tool to Accelerate Crop Improvement for Climate Resilience.
02:45 – 03:00	Fahad Shafiq	Agricultural use of nanomaterials to improve crop production, mineral nutrition, and stress tolerance.
03:00 – 03:15	Musarrat Ramzan	Integrated approaches for sustainable and climate-resilient agriculture
03:15 – 03:30	Noor-ul-Ain	Mn_3O_4 Nanoparticles from <i>Cressa cretica</i> : A Sustainable Approach to Enhance <i>Zea mays</i> L. Growth.
TEA BREAK		

Day 1, Session 1B: Stress-Induced Responses & Plant-Environment Interactions
(02:00 pm to 03:30 pm) (Conference room - Ground Floor)

Chair: Habib-ur-Rehman Athar / *Co-Chair:* Sujjad Haider

INVITED PRESENTATIONS		
Time	Name of the Presenter	Title
02:00 – 02:30	Qamar Abbas	Impact Assessment of Nematodes on the Selected Crops of Yasin Valley, District Ghizer.
02:30 – 02:45	Haibat Ali	Impact of Climate Change on Water Resources in Pakistan and the Role of Smart Agriculture.
02:45 – 03:00	Allah Wasaya	Interactive Effect of Tillage Systems and Biochar Application improved Soil Health and Yield Performance of Wheat under Drought Conditions
03:00 – 03:15	Aysha Rasheed	Eco-physiological and Biochemical Responses Illustrating Seed Tolerance to Various Abiotic Stresses in the Co-occurring <i>Suaeda</i> Species from the Salt Deserts of Qatar
03:15 – 03:30	Sahar Un Nisa	The Effect of Multiple Abiotic Stresses on Ecophysiological Responses of <i>Panicum antidotale</i> .
TEA BREAK		

Day1, Session 2A: Phytochemistry, Ecotoxicology & Resource Remediation
(04:00 pm to 05:30 pm) (Conference room - First Floor)

Chair: Rehana Kausar/ **Co-Chair:** Fahad Shafiq

INVITED PRESENTATIONS		
Time	Name of the Presenter	Title
04:00 – 04:30	Ahmad Aldrie Amir	Edible and medicinal uses of mangroves in Indonesia with a systematic review on blue food potential and health benefits.
04:30 – 04:45	Zaki Ul Rahman	Ecological risks due to leather tanneries with special focus on heavy metal contamination in water, soil, and selected crops (Kasur, Pakistan).
04:45 – 05:00	M. Ajmal Shah	Green extraction and enrichment of bioactive phytochemicals for sustainable development of phytomedicines.
05:00 – 05:15	Noureen Rehan	The Impact of Plant Growth-Promoting Microbes on Biocide Action and the Nutritional Profile of Okra (<i>Abelmoschus esculentus</i>).
05:15 – 05:30	Neelma Munir	Eco-smart biochar solutions: Enhancing crop resilience to salinity and drought.

Day1, Session 2B: Molecular and Smart Approaches for Climate-Resilient Food Systems
(04:00 pm to 05:45 pm) (Conference room - Ground Floor)

Chair: Qamar Abbas / **Co-Chair:** Musarrat Ramzan

INVITED PRESENTATIONS		
Time	Name of the Presenter	Title
04:00 – 04:30	Asad Jan	Comprehensive Functional Characterization of CCCH Tandem Zinc Finger Protein Genes in Rice
04:30 – 04:45	Kausar Hussain Shah	Climate Change Mitigation Toolkit For Sustainable Agriculture: Half Decade Of Strategic Research
04:45 – 05:00	Muhammad Kazim Ali	Trichome Development Genes as Key Regulators of Plant Stress Resistance: Mechanisms and Applications
05:00 – 05:15	Saddia Galani	Rice for Food Security: Integration of Aroma, Quality and Sustainable Rice Production Addressing Climate Change
05:15 – 05:30	Khadija Siddiqui	Restriction of arsenic uptake and translocation: The modulation of OsLsi1 arsenic influx transporter through silicon application in rice seedlings
05:30 – 05:45	Kamran Yaqoob	Genetic Analysis of Starch Composition, Eating Quality and Glycemic Index in Pakistani Rice for Climate-Resilient Breeding

Day 2: Technical Sessions (January 29, 2026; Thursday)
Session 3: Expert opinion - Online session (09:30 am to 11:30 am)
(Conference room - First Floor)

Chair: Ali EL-Keblawy/ **Co-Chair:** Wang Yongdong

INVITED ONLINE PRESENTATIONS		
Time	Name of the Presenter	Title
09:30 – 10:00	Xiaojing Liu	Living with Saline Lands in Harmony: Efficient Utilization of Saline Resources
10:00 – 10:30	Sergey Shabala	Cell-based phenotyping for breeding crops for future climates
10:30 – 11:00	Jin Lin Zhang	Iron nanomaterials enhance nitrogen fixation by modulating root metabolites and rhizosphere microbiome assembly in alfalfa
11:00 – 11:30	Hans Werner Koyro	Primary and Secondary Reaction of Photosynthesis as Non-Invasive Indicators for the Stress Status of Plants

TEA BREAK

Day 2, Session 4: Microbiome Engineering for Global Food Stability
(12:00 am to 1:30 pm) (Conference room - First Floor)

Chair: Asad Jan / **Co-Chair:** Kausar Hussain Shah

INVITED PRESENTATIONS		
Time	Name of the Presenter	Title
12:00 – 12:25	Aqeel Ahmed	Importance of Microbial diversity in Health, diseases and stability of Ecosystem
12:25 – 12:50	M. Sohail	Exploring <i>Arthrocnemum macrostachyum</i> associated <i>Bacillus cereus</i> for bioemulsifier production and climate-resilient agriculture
12:50 – 01:00	Samuel Goll	Protecting agriculture with structural biology: functional insights into conserved type II secretion systems of plant-pathogenic bacteria
01:00 – 01:10	Uroosa Ejaz	Synthesis of methylcellulose-polyvinyl alcohol composite, biopolymer film and thermostable enzymes from sugarcane bagasse
01:10 – 01:20	Neha Farid	Green synthesis of ZnO nanoparticles using <i>Mentha piperita</i> (Peppermint) extract and evaluation of their antimicrobial potential against <i>Listeria monocytogenes</i>
01:20 – 01:30	Khair Bux	Development, evaluation, and molecular dynamics study of ampicillin-loaded chitosan-hyaluronic acid films as a drug delivery system

LUNCH AND PRAYER BREAK

Day 2, Session 5: Sustainable Food Systems & Next-Generation Crops
(02:00 pm to 03:30 pm) (Conference room - First Floor)

Chair: Zamin Shaheed Siddiqui / *Co-Chair:* Haibat Ali

INVITED PRESENTATIONS		
Time	Name of the Presenter	Title
02:00 – 02:30	Wang Yongdong	Integrating ecological vulnerability and economic forestry potential for climate-resilient desert landscapes
02:30 – 02:45	Tahira Mohsin Ali	White Sorghum: A food security crop with commercial potential to replace corn starch in food systems.
02:45 – 03:00	Marium Shaikh	Exploring the functionality of starch from climate resilient Pearl millet: A comparative study with corn starch for food security.
03:00 – 03:15	Sujjad Haider	Inventorying and economic potential of some selected halophytes found in Gilgit, Pakistan.
03:15 – 03:30	Taseer Ahmed Khan	Eco-Smart Poultry Agriculture: Opportunities and Challenges in Pakistan.
TEA BREAK		

Day 2, Session 6: Panel Discussion (04:00 pm to 05:30 pm)
(Conference room - First Floor)

INVITED PRESENTATIONS	
Time	Name of the Presenter
04:00 – 05:00	Panel Discussion
05:00 – 05:30	Report and Recommendation of the conference

Day 3: (January 30, 2026; Friday)

Concluding Session
(03:00 pm to 03:50 pm) (Conference room - First Floor)

Time	Activity
03:00 – 03:05	Recitation from Holy Quran
03:05 – 03:10	Na’at
03:10 – 03:30	Certificate Distribution
03:30 – 03:45	Address by the Chief Guest
03:45 – 03:50	Vote of Thanks