First Circular

National Conference

on

Novel Strategies for Mitigating Biotic and Abiotic Stresses for Agricultural and Environmental Sustainability

Date: 28-29 February, 2024

Jointly organized by

ICAR-National Institute of Biotic Stress Management, Raipur, Chhattisgarh

Amity University Chhattisgarh, Raipur, Chhattisgarh

Co-organized by

ICAR-National Institute of Abiotic Stress Management, Baramati, Maharashtra

INVITATION

With immense pleasure, we cordially welcome you all to the conference on '*Novel Strategies for Mitigating Biotic and Abiotic Stresses for Agricultural and Environmental Sustainability*' scheduled to be held during 28-29 February, 2024 at ICAR-National Institute of Biotic Stress Management, Raipur, Chhattisgarh. This conference is being organized by National Institute of Biotic Stress Management (ICAR-NIBSM), Raipur in collaboration with Amity University Chhattisgarh (AUC), Raipur and National Institute of Abiotic Stress Management (ICAR-NIASM), Baramati. We are anticipating a successful event studded with keynote lectures, oral and poster presentations and discussion among the delegates spanning academia and industry in the field of biotic and abiotic stress management for agricultural and environmental sustainability. The field of mitigating stresses is growing very rapidly in response to the societal needs for safe technologies, drawing attention of researchers from a wide variety of research domains working together to bring benefits to the mankind. The goal of the conference is fostering knowledge and information sharing to evolve innovative strategies and cutting-edge technologies to promote agricultural and environmental sustainability and nutritional security towards achieving Sustainable Development Goals (SDGs).

ABOUT THE CONFERENCE

In the recent years, the looming food scarcity problem has transformed agricultural sciences as an emerging discipline committed to devise new strategies for enhancing crop productivity to feed approximately 10 billion world's populations by the year 2050. The major factors causing food scarcity are biotic and abiotic stresses which substantially limit productivity and nutritional quality of crops world-wide. Changing climate further aggravates adverse effects of combined stresses and increase the losses. A global survey on the major food crops indicated that pathogens, insect pests and weeds cause average yield losses ranging from 17-30% in crops. Likewise, the major abiotic stresses such as temperature extremes, salinity, drought, as well as the deficiency and toxicity of plant nutrients cause up to 51-82% annual loss of crop yield in the world. Often, the exposure of plants to pests or pathogens increase the effects of an abiotic stress(es) such as water deficit and higher temperature, whereas long-term abiotic stress can weaken plant defense and cause enhanced pathogen susceptibility. Despite this, only few reports in the literature have focused on understanding the interactive effects of biotic and abiotic stresses both in laboratory as well as under field conditions. In this scenario, novel strategies need to be adopted to achieve maximum productivity and economic crop returns under such adversaries. Some of the major strategies include pathogen/pest management practices, novel gene discovery, breeding of new crop varieties, high-throughput phenotyping, rapid diagnosis, screening and selection of crop gene pools, genetically modified (GM) crops, exogenous use of osmoprotectants and plant hormones, application of microbiome-based consortium (SynCom) on crops, identification of stresses through remote sensing and spectral signatures, agronomic and soil reclamation practices, sustainable use of available water supplies, use of artificial intelligence (AI) encompassing bioacoustics with machine learning in agriculture, etc.

The above facts call for discovery, development and implementation of novel strategies involving all

knowledge-linked climate smart tools to combat emerging challenges of biotic and abiotic stresses independently as well as together. Hence, the conference on "*Novel Strategies for Mitigating Biotic and Abiotic Stresses for Agricultural and Environmental Sustainability*" is proposed to identify major challenges of biotic and abiotic stresses, climate resilience challenges, developing diagnostics including use of artificial intelligence (AI), formulating strategies to address these issues to sustain future agriculture while ensuring nutritional security.

THEMES AND SUB-THEMES OF THE CONFERENCE

Themes	Sub-themes
Theme 1: Prominent and emerging biotic and abiotic stresses under changing climate	1. Advances in meteorological research and forewarning models 2. Changing stress scenario and future projections 3. Biosecurity and transboundary threats
Theme 2: Recent approaches in climate resilient agriculture and environment sustainability	1. Novel approaches in stress diagnostic and evaluation methodologies 2. Assessment of chemicals pollutants 3. Use of artificial intelligence for sustainable climate solution and data integration 4. Climate resilient strategies for sustainability
Theme 3: Recent trends in abiotic stress management strategies	1. Physiological, genetic and molecular strategies 2. Basic and applied research for climate resilience and abiotic stress management 3. Novel methodologies for abiotic stress mitigation
Theme 4: Recent trends in biotic stress management strategies	1. Physiological, genetic and molecular strategies 2. Basic and applied research under climate change situations 3. One Health under climate change scenario 4. Novel methodologies for biotic stress mitigation
Theme 5: Novel approaches to understand and mitigate combined effects of abiotic and biotic stresses	1. Causes, consequences and mechanisms to study combined interactions 2. Model crop systems: genetics, physiological and molecular basis 3. Utilizing PGR and novel genes discovery for stress tolerance
Theme 6: Capacity building and policy issues in stress management	1. Changing pesticides and bio pesticides scenario and pest risk analysis (PRA) 2. Application of ICT and digital platforms for stress management 3. Regulatory mechanisms (and gaps) related to biotic stress management and current debatable issues

TARGET AUDIENCE

The target audiences are researchers, academicians, students, industrialists and policy makers contributing in research and development.

PRESENTATION

There will be three categories of presentations

(i) Keynote Speaker

The eminent speakers will be invited for delivering their presentation in specific theme of their specialization.

(ii) Lead Speaker

The eminent speakers will be invited for delivering their presentation in specific theme area.

(iii) Oral Presentation

In each session, 3-4 speakers will be selected for oral presentation related to respective theme and content. Oral presentation by each speaker will be given 10 minutes time followed by discussion for 5 minutes.

(iv) Poster Session

There will be separate poster sessions covering all themes of the conference for wider interaction and sharing of information. Each poster session will have a Convener and a Co-Convener. The best posters in each scientific session will be awarded with a certificate.

REGISTRATION FEE AND IMPORTANT DATES

Key dates to remember

Closing date of abstract submission: 10th January, 2024
Date of acceptance of abstract: 20th January, 2024
Closing date of registration and payment: 15th February, 2024

Early bird registration before or on 30th November, 2023

Faculty/Scientist	: Rs. 5000
Student/Research fellow	: Rs. 2000
Industry/Corporate	: Rs. 10000

Spot registration on 28th February, 2024

Faculty/Scientist	: Rs. 6000
Student/Research fellow	: Rs. 2500
Industry/Corporate	: Rs. 12000

ABOUT RAIPUR CITY

Chhattisgarh state, popularly known as '*Rice Bowl of Central India*", came into existence on November, 2000 as 26th states of India upon division of Madhya Pradesh. The state, with 33 districts, is surrounded by Jharkhand state on northwest, Odisha on the east, Andhra Pradesh on the south, and Maharashtra on the southwest. The state is divided into three Agro-climatic zones *viz*., Chhattisgarh plains, Bastar plateau and Northern hills region.

Raipur has been in existence since the 9th century, the old site and ruins of the fort can be seen in the southern part of the city. This district was once part of the Dakshina Kosala Kingdom and later a part of the Mauryan Empire. Raipur had been the capital of the Haihaya Dynasty Kalchuri kings, controlling the forts of Chhattisgarh for a considerable period. Satavahana kings ruled this part until the 2nd–3rd century.

Raipur is the capital and also the largest city in Chhattisgarh. Newly established Nava Raipur is the India's fourth planned city after Chandigarh, Ahmedabad, and Bhubaneswar and has been constructed in phases incorporating world class architecture and design. Nava Raipur is also planned as the business, cultural and educational hub of the Indian state Chhattisgarh. Nava Raipur is an urban agglomeration comprising the city of Raipur along with the new city of Nava Raipur and the industrial city of Bhilai-Durg. Raipur district is bordered by Bilaspur in North, Bastar & Odisha in South, Raigarh & Odisha by the East and Durg to the West.

TOURIST PLACES IN RAIPUR

Mahant Ghasidas Museum was established in 1875 by Raja Mahant Ghasidas. It is listed amongst the leading museums in central India located near D. K. S. Hospital in Raipur, Chhattisgarh.

Vivekananda Sarovar is a very old lake which is as old as the city. A 37 ft high statue of Swami Vivekananda has been build in the lake. This statue has been added in Limca Book of Records for being the "largest model for a statue". The lake has color-light fountains.

Nandanvan is a mini zoo covers an area of 10 - hectares of land. It is located about 15 km away from Raipur city. The main objective to establish such a nature park is to provide shelter to stray wild animals. This zoo also acts as a biological park and maintains some common forestry plants.

Doodhadhari monastery is located to the south of Raipur on the banks of Maharajbandh River. There have also an ancient temple which is dedicate to Lord Rama, built in 17th century by King Jaitsingh.

Mahadev Ghat Temple is located about 5.1 km away from Raipur City Center on the banks of river Kharun. The temple was built in 1402, by Hajiraj Naik during the rule of Bramhdeo Rai.

Some other tourist spots in and near Raipur include Mahamaya Temple, Sirpur, Urja Park, Mahavir Park, 5D shows, Shaheed Smarak Bhavan, Nagar Ghadi, Gaurav Path, Guru Tegh Bahadur Museum, Sushilpikangan Art Gallery, Shabari Handicrafts Emporium, Chhattisgarh Haat, Mahakoshal Kala Parishad, Purkhauti Muktangan Museum, etc.

HOW TO REACH AT RAIPUR CITY

Railways

The city is well connected with almost all the major cities such as Delhi, Mumbai, Bhopal, Jabalpur, Kolkata, Chennai, Hyderabad, Bangalore, Kota, Ahmedabad, Jaipur, Varanasi etc. Raipur junction is the main railway station situated at the heart of the city.

Roadways

There are several National Highways (NH) run over the Raipur city which connect the states like Telangana, Odisha, West Bengal and Madhya Pradesh.

Airways

Swami Vivekananda Airport is located just 14 km away from the Raipur City center and around 40 km from the institute. It operates several flights connecting major cities of India.

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