

ICRF2024

14 November 2024

PROGRAM

TIMES & SPEAKER DETAILS

DIAMOND BALLROOM, 4TH FLOOR | NORTH WING

07:30 - 09:00 **Register**

09:00 - 09:30 **Opening**

Assoc. Prof. Dr. Siwaret Arikit

Director of Rice Science Center, Kasetsart University

Prof. Dr. Dokrak Marod

Vice President for Research and Internationalization of Kasetsart University

Dr. Sithichoke Tangphatsornruang

Deputy Executive Director, BIOTEC, Representative of the director
National Science and Technology Development Agency (NSTDA)

Prof. Dr. Soottiporn Chittmittrapap

Chairman of the Advisory Committee for the Development of the Hub of Talents and
Hub of Knowledge of the National Research Council of Thailand

09:30 - 10:00

**Greenhouse Gas Emissions from Rice Production: Significance, Mitigation Options
and the Emerging Carbon Markets**

Reiner Wassmann - IRRI, Philippines

10:00 - 10:30

Salt Solutions: Designing Rice Resilience for Saline Environments

Glenn B. Gregorio - SEARCA, Philippines

10:30 - 10:45

Coffee Break

10:45 - 11:15

**Low Glycemic Index and High Protein Rice to Transform Food and Nutritional
Security in Asia**

Nese Sreenivasulu - IRRI, Philippines

11:15 - 11:45

**Leaf-for-life: From the Wonder of Rainbow Rice to a Game-changer in Nutrition
Security**

Apichart Vanavichit - Kasetsart University, Thailand

11:45 - 12:15

Creating New Value of Rice - Aim for the Realization of Rice Innovation Company

Hajime Takahashi - Kameda Seika Co., Ltd., Japan

12:15 - 12:45

Slowly Fermentable Carbohydrates and Gut Health

Bin Zhang - South China University of Technology, China

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12:45 - 13:45

LUNCH 5TH FLOOR

13:45 - 14:15

Poster Session

Climate Change Room: Diamond Ballroom 1 (4th Floor)

Chair: Reiner Wassmann, Kanyanat Sirithunya, Jonaliza L. Siangliw



14:15 - 14:35

Thai Rice: Strengthening Climate-smart Rice Farming

Nana Kuenkel - Director of the GIZ Agriculture and Food Cluster, Thailand

14:35 - 14:55

Early Growth Dynamics of Rice and Weedy Rice Grown Alone and in Competition Under Elevated Temperature and CO₂ Conditions

Vikas Tyagi - IRRI, Philippines

14:55 - 15:10 **Coffee Break**

15:10 - 15:30

Breeding of Brittle Rice Varieties with Fast Degradable Rice Straw for Climate Change

Anuchart Sawasdee - National Chung Hsing University, Taiwan

15:30 - 15:50

Morpho-agronomic Evaluation, Characterization and Diversity Analysis of Selected Native Rice in Cordillera Administrative Region, Philippines

Jesson Y. Del-amen - Benguet State University, Philippines

15:50 - 16:10

Assessing the Eligibility and Potential of Carbon Credits Derived from Rice Cultivation in Thailand

Suraphon Chaiwongsar - Rajamangala University of Technology Lanna, Thailand

16:10 - 16:30

Application of Azolla in Rice Cultivation for Reduction of Production Cost and Greenhouse Gas Emission

Manoch Kumpanalaisatit - Rajamangala University of Technology Lanna Lampang, Thailand

16:30 - 16:50

Long-term Impact of Alternate Wetting and Drying (AWD) Irrigation on Greenhouse Gases Emission Mitigation in Lysimeter-based Rice Paddies

Ahmad Harun Mirza Bin Muhamad - Meiji University, Japan

16:50 - 17:10

Impact of Biochar on Yield and Water Productivity of Wet Direct-Seeded Rice Under Intermittent Irrigation

Subesh Dhakal - AIT, Thailand

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Novel Processing and Product Development for Healthy Rice Products

Room: diamond Ballroom 2 (4th Floor)

Chair: Savitree Ratanasumawong

14:15 - 14:35

Trend of Future Rice Products

Onanong Naivikul - Kasetsart University, Thailand

14:35 - 14:55

Innovative Applications of Rice-derived Foods and Ingredients in Modern Nutrition: Exploring Sustainable Solutions and Health Benefits

Atikorn Panya - National Center for Genetic Engineering and Biotechnology (BIOTEC), NSTDA, Thailand

14:55 - 15:10 **Coffee Break**

15:10 - 15:30

Resistant Starch Type3 Rice Beverage for Elderly

Patchanee Yasurin - Assumption University, Thailand

15:30 - 15:50

Effect of Fermentation of Rice Flour by Inoculation of *Levilactobacillus Brevis* for 2 Days on the GABA Content and Quality of GABA Rice Flour and Instant Noodles (Kanomjeen)

Sirichai Songsermpong - Kasetsart University, Thailand

15:50 - 16:10

In Vitro Simulated Gastrointestinal Starch Digestion and Polyphenol Release Rate of Control and Green-modified Thai Red Rice Flours

Ngo Van Tai - King Mongkut's Institute of Technology Ladkrabang, Thailand

Health, Medical and Pharmaceutical Related Product, or Variety

Room: Diamond Ballroom 2 (4th Floor)

Chair: Chanakan Prom-u-thai

16:10 - 16:30

Enhancing Grain Zinc Content in Rice: The Synergistic Role of Zinc and Sulfur Applications

Chanakan Prom-u-thai - Chiang Mai University, Thailand.

16:30 - 16:50

Iron and Zinc Biofortification of Japanese Akitakomachi Rice Using *OsVIT1* and *OsYSL9* Genes by Genome Editing Approach

May Sann Aung - Akita Pref. University, Japan

16:50 - 17:10

Genetic Improvement of Glycemic Load in Indian Soft Rice Through Molecular Breeding

Narottam Dey - Visva-bharati, India

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Biotic Stresses Room: Sapphire 3 (3rd Floor)

Chair: Kanamon Riangwong, Anurag Sunpapao

14:15 - 14:35

Genetic Diversity and Resistance Profiling of Avirulence Genes in Thai Rice Blast Populations: Implications for Breeding Durable Blast Resistance

Chatchawan Jantasuriyarat - Kasetsart Universtiy, Thailand

14:35 - 14:55

Diversity, Ecology and Evolution of Entomopathogenic Fungi and Their Potential As Biopesticides and Biostimulants for Rice Cultivation

Noppol Kobmoo - National Center for Genetic Engineering and Biotechnology (BIOTEC), NSTDA, Thailand

14:55 - 15:10 **Coffee Break**

15:10 - 15:30

Diversity of Beneficial Microorganisms with Plant Growth Promotion and Biological Control Abilities Against Plant Diseases in Rice

Anurag Sunpapao - Faculty of Natural Resources, Prince of Songkla University, Thailand

15:30 - 15:50

Progress in Breeding for Stem Borer Resistance in the Philippines

Imeldalyn G. Pacada - Philrice, Philippines

15:50 - 16:10

Trichoderma Asperelloides PSU-P1 in Combination with Vermicompost Induces Defense Response and Promote Plant Growth in Rice

Prisana Wonglom - Thaksin University, Thailand

16:10 - 16:30

Population Genetic Analysis of Rice Blast Populations in Thailand from Whole-genome Sequences

Worrawit Suktrakul - Kasetsart University, Thailand

16:30 - 16:50

Unveiling the Molecular Basis of Rice Defense Against Bacterial Leaf Streak Through Comparative Transcriptomics

Moe Moe Kyi Win - Rice Science Center, Kasetsart University, Thailand

16:50 - 17:10

Development of Novel Indel Markers by Whole-genome Sequence Comparison and Genetic Diversity Assessment of Thailand Rice Blast Fungus Populations

Napassorn Thamkirati - Kasetsart Univeristy, Thailand

18:30

Welcome Dinner Room: Tipawan 1 (Lobby Floor)

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TIMES & SPEAKER DETAILS

DIAMOND BALLROOM, 4TH FLOOR | NORTH WING

08:30 - 09:00

Rice Farming for Carbon Removal: A Grain of Truth or An Elephant in Our Paddy Field ?

Poonpipope Kasemsap - Kasetsart University, Thailand

09:00 - 09:30

Water-saving Rice

Julie E. Gray - Biosciences, University of Sheffield, UK

09:30 - 10:00

Synthetic Apomixis in Hybrid Rice

Kejian Wang - State Key Laboratory of Rice Biology, China National Rice Research Institute (CNRRI), China

10:00 - 10:15

Coffee Break

10:15 - 10:45

Genetic Architecture of Plant Height in Rice

Jianxin Shi - Shanghai Jiao Tong University, China

10:45 - 11:15

Epigenome Adaptation in Rice

Pao-yang Chen - Institute of Plant and Microbial Biology, Academia Sinica, Taiwan

11:15 - 11:45

Drones: Empowering Smallholder Farmers with Climate Smart Agriculture

Stephen P. Klassen - IRRI, Philippines

11:45 - 12:15

AI-driven Stress Detection in High-throughput Phenotyping Using Hyperspectral and Multispectral Data

Martin Trtílek PSI (Photon Systems Instruments)



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12:15 - 13:15

Lunch 5th Floor

13:15 - 13:45

Poster Session

Rice-genomics/Rice-omics

Room: Diamond Ballroom 1 (4th Floor)

Chair: Varodom Charoensawan, Wasin Poncheewin

13:45 - 14:05

25 years of Rice Molecular Breeding in Thailand

Theerayut Toojinda - Rice Science Center, Kasetsart University

14:05 - 14:25

Natural Variation in mRNA Polyadenylation Expands the Molecular Basis for Heterosis in Elite Hybrid Rice

Jixian Zhai - Southern University of Science and Technology, China

14:25 - 14:45

Investigating Abiotic Stress Responsive Pathways in Plants Using Integrative Omics Approaches

Varodom Charoensawan - Mahidol University, Thailand

14:45 - 15:00 **Coffee Break**

15:00 - 15:20

Multi-omics Approach Uncovers Rice Blast Resistance Candidate Genes in Thai Rice

Supatthra Narawatthana - Rice Department, Thailand

15:20 - 15:40

Optimization of Extraction Method for Metabolite Profile Analysis in Rainbow Rice Leaves

Natnicha Charoenwong - Thammasat University, Thailand

15:40 - 16:00

Agriomics: Advancing Rice and Crop Genomics for Precision Breeding in Thailand

Wasin Poncheewin - National Center for Genetic Engineering and Biotechnology, Thailand

16:00 - 16:20

DNA Methylation Biomarkers for Successful Rice Transformation

Shiang-chin Huang - Academia Sinica, Taiwan

16:30 **Closing Room: Diamond Ballroom**

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Agri-tech

Room: Diamond Ballroom 2 (4th Floor)

Chair: Patompong Johns Saengwilai, Phanchita Vejchasarn

13:45 - 14:05

Artificial Intelligence and Social Media Platform for Rice Diseases Monitoring and Management

Sujin Patarapuwadol, Kasetsart University, Thailand

14:05 - 14:25

Dragonfly: Delivery Value from Space to Sustainable Rice Cultivation

Sirikul Hutasavi - Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand

14:25 - 14:45

Detection of Rice Phenological Stages in Thailand Using Sentinel-1 Data

Wisarut Khwansiridamrong - Geo-informatics and Space Technology Development Agency (GISTDA), Thailand

14:45 - 15:00 **Coffee Break**

15:00 - 15:20

Yield Prediction of Rice RD33 Using Normalized Difference Vegetation Index from UAU

Kiatkulchai Jitt-aer - Navaminda Kasatriyadhiraj, Royal Air Force Academy, Thailand

15:20 - 15:40

Space Rice: Lesson Learned from Other Species

Tatpong Tulyananda - Mahidol University, Thailand

15:40 - 16:00

Red Defect Detection for Rice Quality Assurance by Using Machine Learning

Phuvin Kongsawat - Easy Rice, Thailand

16:00 - 16:20

The Development of a Native Rice Varietal Classification Method Using Deep Learning

Noppamas Pukkhem - Thaksin University, Thailand

16:30 **Closing Room: Diamond Ballroom**

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Abiotic Stress

Room: Sapphire 3 (3rd Floor)

Chair: Chanate Malumpong, Watchareewan Jamboonsri

13:45 - 14:05

Recent Advances in Abiotic Stress Tolerance in Rice Crop: A Case Study of Thailand

Suriyan Cha-um - National Center for Genetic Engineering and Biotechnology (BIOTEC), NSTDA, Thailand

14:05 - 14:25

Plant Systems Biology: Application to Rice for Understanding Transcriptional Regulatory Mechanism in Two Rice Cultivars Under Mild Field Drought Response During Grain-filling Stage

Bijayalaxmi Mohanty – National University of Singapore, Singapore

14:25 - 14:45

Transcriptomic Profiling of High Temperature-related Genes During Appressorium Formation of *Pyricularia Oryzae*

Thanathip Sutthiphai - Kasetsart University, Thailand

14:45 - 15:00 **Coffee Break**

15:00 - 15:20

Integrating Stomatal, Photosynthetic, and Agronomical Traits for Breeding Climate-resilient Rice Varieties

Hsiang-Chun Lin - National Taiwan University, Taiwan

15:20 - 15:40

Impact of Fast Flooding on Vegetation Indices Based on Unmanned Aerial Vehicle, Morphological Traits and Yield Attributes in Indica Rice Genotypes (*Oryza sativa* L. sub. indica)

Patchara Praseartkul - National Center for Genetic Engineering and Biotechnology (BIOTEC), NSTDA, Thailand

15:40 - 16:00

Waterproof Rice: A Journey Toward SUB1A-independent Mechanisms of Submergence Tolerance

Thanin Chantarachot - Department of Botany, Faculty of Science, Chulalongkorn University, Thailand

16:00 - 16:20

Investigating Cold Tolerance Mechanisms in Rice Seedlings: Alternative Splicing, Promoter Analysis, and Their Applications for Marker Development

Patcharaporn Summat - National Center for Genetic Engineering and Biotechnology (BIOTEC), NSTDA, Thailand

16:30 **Closing Room: Diamond Ballroom**
