

**The IX International Scientific and Practical Conference on Biotechnology as
an Instrument for Plant Biodiversity Conservation**

(Physiological, Biochemical, Embryological, Genetic and Legal Aspects)

(Biotech 2021)

12-13 July 2021

Faculty of Science, Mahidol University, Bangkok, Thailand

Monday 12 July 2021

Room 1 (L02), Faculty of Science, Mahidol University

MC: Assist. Prof. Dr. Alyssa Stewart

MC: Dr. Saroj Ruchisansakun

9:00-10:00 hr.

Opening Ceremony

- Welcome Address

by Associate Professor Dr. Kanchit Thammasiri, Biotech 2021
Convener

- Welcome Address

by Assistant Professor Dr. Unchera Viboonjun, Head of
Department of Plant Science, Faculty of Science, Mahidol
University

- Opening Address

by Associate Professor Dr. Palangpon Kongsaree, Dean, Faculty
of Science, Mahidol University

- Welcome and Presentation

by Professor Dr. Jorge Canhoto, Chair, Division Plant Genetic
Resources and Biotechnology, ISHS

- Presentation of souvenirs to conference sponsors

- Group Photographs

10:00-10:30 hr.

Keynote Presentation

S1_K Prof. Pei Shengji

Vital roles for ethnobiology in new era of biodiversity conservation in China

Shengji Pei, Kanchit Thammasiri

Q & A

10:30-10:45 hr.

Break

10:45 - 12:00 hr.

Invited Oral Presentations

S2_I3 Dr. Gayle Volk

Plant cryopreservation: Research, implementation, and outreach

Gayle Volk

Q & A

S4_I1 Prof. Dr. S.M. Khasim

In vitro multiplication of some selected banana cultivars (*Musa* spp.) from India and their genetic fidelity using ISSR markers

Shaik Mahammad Khasim, Saifuldeen Ahme Hasan

Q & A

12:00 - 13:00 hr.

Lunch Break

Monday 12 July 2021

Room 1 (L02), Faculty of Science, Mahidol University

MC: Assist. Prof. Dr. Alyssa Stewart

13:00-15:00 hr.

S2_I1 Dr. Bart Panis

Cryopreservation to preserve vital tropical crops for future generations

Bart Panis, Hannes Wilms

Q & A

S2_I2 Dr. Manuela Nagel

Molecular mechanisms during cryopreservation of potato and garlic shoot tips

Manuela Nagel, Kanchit Thammasiri, Marion Grube, Claudia Kopnick, Kamatchi Ulagappan

Q & A

S4_I2 Prof. Dr. Jorge M. Canhoto

Somatic embryogenesis and other in vitro techniques towards tamarillo breeding and conservation

Sandra Correia, André Caeiro, Daniela Cordeiro, Miguel Rito, Ana Pedrosa, Tércia Lopes, Jorge Canhoto

Q & A

S1_I1 Prof. Dr. Hugh W. Pritchard

Seed `omics´ and the conservation of plant biodiversity

Hugh W. Pritchard, Liang Lin, Hongying Chen, Anne Visscher, Dani Ballesteros

Q & A

Monday 12 July 2021

Room 2 (L03), Faculty of Science, Mahidol University

MC: Dr. Saroj Ruchisansakun

Session II: Cryopreservation (S2)

- 13:00-13:15 hr. S2_1 Fruit harvesting times and various dehydration methods for cryopreservation of *Paphiopedilum bellatulum* (Rchb.f.) Stein seeds
Supaporn Rodpradit, Prasit Wangpakapattanawong, Pheravut Wongsawad, Kanchit Thammasiri
- 13:15-13:30 hr. S2_2 Cryopreservation of *Grammatophyllum speciosum* Blume seeds by D cryo-plate method
Dechathon Thanasuttanithi, Kanchit Thammasiri
- 13:30-13:45 hr. S2_3 Cryopreservation and assessment of genetic stability of cryopreserved *Fragaria* spp. using SSR markers
Sandhya Gupta, Prashant Tewari, Madhvi Mishra, Rakesh Singh, DK Nerwal

Session III: Breeding (S3)

- 13:45-14:00 hr. S3_2 Genetic diversity of an endemic medicinal orchid, *Coelogyne nervosa* R. Rich. from Southern India using morphological and molecular markers
J. Ramudu, S.M. Khasim
- 14:00-14:30 hr. Q & A session

Tuesday 13 July 2021

Room 1 (L02), Faculty of Science, Mahidol University

MC: Assist. Prof. Dr. Alyssa Stewart

Session VI: Plant Molecular Research (S6)

- 09:00-09:15 hr. S6_1 DNA Barcoding and molecular systematics in genus *Coelogyne* Lindl. (Orchidaceae)
J. Ramudu
- 09:15-09:30 hr. S6_2 Plant GARDEN: a portal web site for accessing plant genome, DNA marker, and SNP information
Sachiko Isobe, Hisako Ichihara, Hideki Hirakawa, Andrea Ghelfi, Mitsuyo Kohara, Manabu Yamada, Takuro Tamura, Akihiro Nakaya, Satoshi Tabata
- 09:30-09:45 hr. S6_3 Molecular phylogeny and DNA barcode regions efficacy for identification the variety of *Capsicum annuum* L. in Thailand
T. Luangsaphabool, A. Wongpia, P. Sangkasa-ad, T.N. Nan, K. Pipithsangchan, K. Thammasiri

Session VII: Plant Protection (S7)

- 09:45-10:00 hr. S7_1 Simple preparation of the dried galangal (*Alpinia galanga*) in ethanol is effective to suppress *Curvularia* sp. which causes grain discoloration of rice (*Oryza sativa*) (var. Suphan Buri 2)
Kyaw Soe Win, Rachsawan Mongkol, Mana Kanjanamaneesathian
- 10:00-10:15 hr. S7_2 In vitro screening of crude extracts from plants against *Fusarium sacchari* and *Curvularia lunata* and testing the efficacy of a selected crude extract of *Alpinia galanga* against grain discoloration and other rice diseases in the fields
Thi Thi Win, Mana Kanjanamaneesathian, Rachsawan Mongkol

10:15-10:45 hr. Q & A session

10:45-11:00 hr. Break

Session I: Plant Diversity Conservation (S1)

- 11:00-11:15 hr. S1_1 In vitro propagation and conservation of *Artocarpus lakoocha* Roxb.: An underutilized fruit of India
Sandhya Gupta, Vivek Kumar Biraji
- 11:15-11:30 hr. S1_2 Native Thai waterlily survey as an evidence to support 'Jongkolnee' waterlily (*Nymphaea siamensis*) existing in a new subgenus
Vichai Puripunyanich, Woranuch La-onsri, Primlarp Chukiatman, Kanokporn Boonsirichai
- 11:30-11:45 hr. S1_3 Agro-morphological and genetic diversity of Indian large cardamom cultivars (*Amomum subulatum* Roxb.) in the sub Himalayan tropics
Reshma Ranjanan, Mary Mathew K, Remashree A.B.
- 11:45-12:00 hr. S1_4 Biotechnological applications for plant germplasm conservation at ICAR-National Bureau of Plant Genetic Resources, India's recent achievements
Anuradha Agrawal, Sandhya Gupta, Neelam Sharma, Sangita Bansal, Vartika Srivastava, Era Vaidya Malhotra, Subhash Chander, Ravi Gowthami, Kuldeep Singh
- 12:00-13:00 hr. Lunch Break
- 13:00-13:15 hr. S1_5 The use of zygotic embryos for the efficient long-term conservation of a Georgian provenance of sweet chestnut: an overview
Mariam Gaidamashvili
- 13:15-13:30 hr. S1_6 Safeguarding and use of plant genetic resources in DOA genebank. In case of "Aditayadhorn agricultural project in contemplation of Her Highness Princess Aditayadhornkitikhun at Surin has collaborated with DOA genebank - ex situ conservation of some field crops and horticultural crops in DOA genebank, Thailand, 2019-2020"

K. Pipithsangchan, N. Boain, S. Dachakumpoo, S. Bubpato, J. Suksawat, A. Songserm, A. Wongpia, T. Luangsuphabool, C. Samphunphuang, D. Narkprasert, P.P. Chareonsap, K. Thammasiri

13:30-13:45 hr. S1_7 Comparative assessments of alkaloids and phenolic compounds in a Thai medicinal plant, *Erycibe elliptilimba*, and other species in the genus
Tripatchara Atiratana, Paweena Traiperm, Phongsakorn Kochaiphat, Thanika Pathomwichaiwat, Unchera Viboonjun

13:45-14:30 hr. Q & A session

14:30-15:00 hr. Break

15:00-16:00 hr. **Business Meeting and Closing Ceremony**

Tuesday 13 July 2021

Room 2 (L03), Faculty of Science, Mahidol University

MC: Dr. Saroj Ruchisansakun

Session IV: Micropropagation (S4)

- 09:00-09:15 hr. S4_1 Shoot multiplication of three *Hedychium* species via immersion temporary bioreactor
Supaporn Rodpradit, Pimpaka Klaharn, Paweena Pumisitapon
- 09:15-09:30 hr. S4_2 Preventing tissue necrosis with activated charcoal alternatives during shoot multiplication of coconut
Hannes Wilms, Dries De Bièvre, Rony Swennen, Juhee Rhee, Bart Panis
- 09:30-09:45 hr. S4_3 The effect of plant growth regulators on the in vitro regeneration capacity in some horticultural crops and rare endangered plant species
Irina Mitrofanova, Nina Lesnikova-Sedoshenko, Svetlana Chelombit, Irina Zhdanova, Natalya Ivanova, Olga Mitrofanova
- 09:45-10:00 hr. S4_4 In vitro establishment and multiplication of *Vaccinium virgatum* Ait. 'Delite'
Carolina Schuchovski, Luiz Antonio Biasi
- 10:00-10:15 hr. S4_5 A comparative analysis of in vitro responses of anthurium under temporary immersion (RITA[®])
Teresita Amore, Jaclyn Nicole Uy
- 10:15-10:45 hr. **Q & A session**
- 10:45-11:00 hr. Break
- 11:00-11:15 hr. S4_6 Chemotyping and in vitro conservation of strawberry tree (*Arbutus unedo* L., Ericaceae)
João Martins, Teresa Batista, Glória Pinto, Jorge Canhoto
- 11:15-11:30 hr. S4_7 Prospect and challenges in Rhododendron micropropagation
Sin Hoong Tan, Rusea Go

Session V: Physiology and Production (S5)

- 11:30-11:45 hr. S5_2 Effects of irrigation levels on growth and chemical constituents in *Curcuma alismatifolia*
Chaiartid Inkham, Jakaphun Julsrigival, Sunee Chansakaow, Panupon Hongpakdee, Kanokwan Panjama, Soraya Ruamrungsri
- 11:45-12:00 hr. S5_3 Chemical composition analysis of essential oils from black gingers (*Kaempferia parviflora*) by gas chromatography-mass spectrometry (GC-MS)
A. Wongpia, C. Samphunphuang, K. Pipithsangchan, W. Somprasong, S. Boonpradub, T. Luangsuphabool, K. Thammasiri
- 12:00-13:00 hr. Lunch Break
- 13:00-13:15 hr. S5_4 Assessment of IAA synthesis by endophytic bacteria in *Vanda* (Orchidaceae)
Wanwisa Inkaewpuangkham, Chaiartid Inkham, Kanokwan Panjama, Yupa Chromkaew, Soraya Ruamrungsri
- 13:15-13:45 hr. Q & A session