

TWENTY EIGHTH ANNUAL CONGRESS

November 17 - 18, 2016

Plant Genetic Resources Centre (PGRC), Gannoruwa, Peradeniya

PROGRAMME

November 17, 2016

INAUGURAL SESSION

Chairperson: Prof. S. Samita, Director, PGIA

- | | |
|------------|--|
| 08.00 a.m. | Registration |
| 08.45 a.m. | National Anthem |
| 08.50 a.m. | Traditional Lighting of the Oil Lamp |
| 09.00 a.m. | Welcome Address by Dr. Mojith Ariyaratne
Coordinator - PGIA Congress 2016 |
| 09.10 a.m. | Address by Ms. Samurdi Ariyaratne
President, Postgraduate Agriculture
Students' Association |
| 09.20 a.m. | Address by Prof. Gamini Pushpakumara
Dean, Faculty of Agriculture
University of Peradeniya |
| 09.30 a.m. | Address by Prof. S. Samita
Director, Postgraduate Institute of Agriculture
University of Peradeniya |
| 09.40 a.m. | Address by Prof. Upul B. Dissanayake
Vice Chancellor, University of Peradeniya |
| 09.50 a.m. | Address by the Chief Guest H.E. Ms. Shelley Whiting
High Commissioner of Canada to Sri Lanka and Maldives |
| 10.05 a.m. | Presentation of the Journal
"Tropical Agricultural Research, Vol. 28 (1)" |
| 10.10 a.m. | Keynote Address by Prof. Alistair Hetherington
"Understanding How Stomata Respond to Changes in the
Environment"
University of Bristol, United Kingdom |
| 10.40 a.m. | Highlights of the 28 th Annual Congress 2016 |
| 10.50 a.m. | Refreshments |

November 17, 2016

Technical Session I

Genetics & Plant Breeding

Chairperson: Prof. A.L.T. Perera

Venue: Main Auditorium, PGRC

- 11.15 a.m. Morpho-genetic Diversity and Anti-bacterial Activity in Root Extracts of Nine Solanaceous Species
D.T. Jeyakumar, U.H.A.J. de Silva, D.R.R.P. Dissanayake, M.D.M. Chamikara and S.D.S.S. Sooriyapathirana
- 11.35 a.m. Quantitative Genetic Assessment of Phosphorus Deficiency Tolerance in Selected F₂ Progenies of Rice (*Oryza sativa* L.) Genotypes in Sri Lanka
Y.C. Aluwihare, R. Lelwala, D.R.R.P. Dissanayake, M.D.M. Chamikara, D.N. Sirisena, W.L.G. Samarasinghe and S.D.S.S. Sooriyapathirana
- 11.55 a.m. Determination of Parents and Cross Combinations for Rice (*Oryza sativa* L.) Hybrids via Line×Tester Analysis
W.S. Priyantha, V.A. Sumanasinghe, S. de. Z. Abeysiriwardena and U.A.K.S. Udawela
- 12.15 p.m. Tri-species Bridge Crosses [(*Capsicum annuum* L.×*Capsicum chinense* Jacq.)×(*Capsicum chinense* Jacq.×*Capsicum frutescens* L.)] as an Alternative Approach for Introgression of Cucumber Mosaic Virus and Chilli Veinal Mosaic Virus Resistance from *C. frutescens* L. into *C. annuum* L.
K.N. Kannangara, D.M. de Costa, D.K.N.G. Pushpakumara and I.P. Wickramasinghe
- 12.35 p.m. LUNCH

Technical Session II

Food Technology

Chairperson: Prof. R. Sivakaneshan

Venue: Seminar Room, PGRC

- 11.15 a.m. Impact of Moderate Intensity Pulsed Electric Field Treatment on Lycopene Content and Its *In vitro* Bioaccessibility of Whole Tomato (*Solanum lycopersicum* L)
K.G.L.R. Jayathunge, A. Stratakis, O. Cregenzán-Albertia, I.R. Grant, J. Lyng and A. Koidis
- 11.35 a.m. Optimization of Enzymatic Interesterification of Coconut (*Cocos nucifera* L.) and Sesame (*Sesamum indicum* L.) Oils Using *Thermomyces lanuginosus* Lipase by Response Surface Methodology
S. Sivakanthan, L.J.P.A.P. Jayasooriya, M. Kulatunga and W.M.T. Madhujith
- 11.55 a.m. Comparative Study on Major Chemical Constituents in Volatile Oil of True Cinnamon (*Cinnamomum verum* Presl. syn. *Cinnamomum zeylanicum* Blume) and Five Wild Cinnamon Species Grown in Sri Lanka
T. Liyanage, W.M.T. Madhujith and K.G.G. Wijesinghe
- 12.15 p.m. The Effect of Antioxidative Extracts in Reducing Oxidation of Selected Edible Oils during Deep Frying
T.P. Hemachandra, R.R.G.D.K. Jayathilake and W.M.T. Madhujith
- 12.35 p.m. LUNCH

Invited Presentation - I

Chairperson: Prof. D. de Costa

Venue: Main Auditorium, PGRC

01.15 p.m. **Theory and Practice of Surfactant-Colloidal Science in the Development of Innovative Products for Agrochemical Industry**

Dr. Manilal Dahanayake

Director and Scientist Fellow at Solvay Group of Companies
and the Surfactant Research Institute CUNY, USA.

Technical Session III

Water: Treatments & Dynamics

Chairperson: Prof. K.D.W. Nandalal

Venue: Main Auditorium

- 02.00 p.m. Coagulation-Flocculation Treatment for White Pepper (*Piper nigrum* L.) Processing Wastewater
M.A. Tharmalingam, M. Gunawardana, M.I.M. Mowjood and D.A.N. Dharmasena
- 02.20 p.m. Spatial and Temporal Dynamics of Water Quality in Batticaloa Lagoon in Sri Lanka
M. Sugirtharan, S. Pathmarajah and M.I.M. Mowjood
- 02.40 p.m. Water Regimes and Ecosystem in Lowland Paddy Field: A Case Study in Awlegama, Kurunegala, Sri Lanka
G.W.R.W.M.R.M.W.K. Kirinde, N.D.K. Dayawansa and M.I.M. Mowjood
- 03.00 p.m. Situation Analysis of Socio Environmental Aspects of Non Point Source Water Pollution in Intensively Cultivated Areas of Nuwara Eliya
K.D.M.S.S. Sarathchandra, N.D.K. Dayawansa and M.I.M. Mowjood
- 03.20 p.m. TEA

Technical Session IV

Molecular Genetics

Chairperson: Prof. Parakrama Karunarathne

Venue: Seminar Room, PGRC

- 02.00 p.m. Variation of Field Symptoms and Molecular Diversity of Virus Isolates Associated with Chilli Leaf Curl Complex in Different Agroecological Regions of Sri Lanka
G.D.N. Menike and D.M. De Costa
- 02.20 p.m. Molecular Marker Validation for Bacterial Leaf Blight Resistant Genes Xa21 and Xa4 in Ld 99-12-38 / IRBB 60 Genetic Background
W.D.P. Weerasinghe, K.S. Udawela, U. Heiyantuduwa and H.A.M. Wickramasinghe
- 02.40 p.m. Evaluation of Genetic Diversity of *Cis*-acting Elements of Abscissic Acid Responsive Element Binding Protein (ABRE-BP) in Selected Sri Lankan Rice (*Oryza sativa* L.) Varieties
W.M.A. Senavirathne, D.V. Jayatilake, V. Herath and H.A.M. Wickramasinghe
- 03.20 p.m. TEA

Technical Session V

Agrostology & Aquaculture

Chairperson: Prof. K. Samarasinghe

Venue: Main Auditorium

- 04.00 p.m. Captive Breeding of Fire Shrimp (*Lysmata debelius*) Under Sri Lankan Conditions
H.A.S.U. Hettiarachchi and U. Edirisinghe
- 04.20 p.m. Yield and Nutritional Quality Potential of Three Fodder Grasses in the Northern Region of Sri Lanka
M. Sarmini and S. Premaratne
- 04.40 p.m. Present Status of Holothurian Fisheries in Mullaitivu Coastal Waters in the North-East Region of Sri Lanka
K. Veronika, U. Edirisinghe, K. Sivashanthini and A.R.S.B. Athauda

November 18, 2016

Technical Session VI

Agronomy

Chairperson: Prof. H.P.M. Gunasena

Venue: Main Auditorium, PGRC

- 09.00 a.m. Impact of Variety and Seed Priming on Anaerobic Germination Tolerance of Rice (*Oryza sativa* L.) Varieties of Sri Lanka
T.K. Illangakoon, E.S. Ella, A.M. Ismail, B. Marambe, R.S.K. Keerthisena, A.P. Bentota and S. Kulatunge
- 09.20 a.m. Temporal Tillering Behavior of Sri Lankan Elite Rice (*Oryza sativa* L.) Varieties in Response to Phosphorus Availability
D.S. Kekulandara, P.C.G. Bandaranayake, D.N. Sirisena, W.L.G Samarasinghe and L.D.B. Suriyagoda
- 09.40 a.m. Influence of Whole and Subsoil Salinity on Growth, Development, Physiology and Yield of Selected Rice (*Oryza sativa* L.) Varieties Cultivated in Jaffna District, Sri Lanka
L. Pradheeban, S.P. Nissanka and L.D.B. Suriyagoda
- 10.00 a.m. Evaluation of Paddy Fields System Layout for Other Field Crops (OFC) in a Minor Irrigation System in Bayawa, Sri Lanka
G.M.P. Kumara, S.M.L.D. Samarakon, Y.G.D.P. Wijewardana, M.I.M. Mowjood and L.W. Galagedara
10. 40 a.m. TEA

Technical Session VII

Entrepreneurship & Extension

Chairperson: Prof. L.H.P. Gunarathne

Venue: Seminar Room, PGRC

- 09.00 a.m. Entrepreneurial Potential of Small Scale Beekeeping in Rural India: A Case Study in Kanniyakumari District, Tamil Nadu
M. Esakkimuthu and V.L.V. Kameswari
- 09.20 a.m. Clientele Satisfaction Towards the Public-Private Partnership Extension Model Introduced for Technology Dissemination in Tea Smallholding Sector in Sri Lanka
M.K.S.L.D. Amarathunga, W.A.D.P. Wanigasundera and M. Wijeratne
- 09.40 a.m. Water Conflicts among Different Water Users and Uses in the *Hakwatuna Oya* Watershed in the *Deduru Oya* Basin, Sri Lanka
N.G.R. Saumyarathna, E.R.N. Gunawardena and N.D.K. Dayawansa
- 10.00 a.m. Effectiveness of Health and Safety Training for Municipal Waste Collectors: A Case Study from Galle, Sri Lanka
T. Rajapaksha, Saliya De Silva, B.F.A. Basnayake, Lahiru N. Jayakody R.T.K. Ariyawansa, A.N. Siriwardana
- 10.20 a.m. Fostering Technology Stewardship Approach to Promote Knowledge Sharing among Farming Communities in Sri Lanka
H.A.C.K. Jayathilake, U.K. Jayasinghe-Mudalige, L.D.R.D. Perera, G.A. Gow and N. Waidyanatha
- 10.40 a.m. TEA

Technical Session VIII

Climate Change & Water Management

Chairperson: Prof. B. Marambe

Venue: Main Auditorium, PGRC

- 11.15 a.m. Impact of Climate Change on Irrigation Water Demand of Paddy: A Case Study from *Hakwatuna Oya* Irrigation Scheme in Sri Lanka
M. Rajendran, E.R.N. Gunawardena and N.D.K. Dayawansa
- 11.35 a.m. Recent Changes of Rainfall Regime of *Hakwatuna Oya* Watershed of Sri Lanka
A.C.S. Perera, B.V.R. Punyawardena and E.R.N. Gunawardena
- 11.55 a.m. Vulnerability of Smallholder Farmers to Climate Change or Variability: A Case Study from *Hakwatuna-Oya* Irrigation Scheme in Sri Lanka
D.M.N. Diyawadana, S. Pathmarajah and E.R.N. Gunawardena
- 12.15 p.m. Assessment of Environmental Flow Release from *Deduru Oya* Reservoir to Mitigate Possible Impact on Downstream Ecosystem
M.M.J.G.C.N. Jayasiri, N.D.K. Dayawansa and E.R.N. Gunawardena
- 12.35 p.m. Land Use Changes Resulting From Construction of *Deduru Oya* Reservoir and its Impact on Livelihood
S.M.L.D. Samarakoon, N.D.K. Dayawansa and E.R.N. Gunawardena
- 12.55 p.m. LUNCH

Invited Presentation - II

Chairperson: Prof. B. Marambe

Venue: Main Auditorium, PGRC

02.00 p.m. **Increasing Atmospheric CO₂ Concentration Threatens The Human Nutrition**

Prof. Saman Seneweera

Associate Professor at the University of Southern Queensland, Australia.

Poster Presentations

Venue: Lobby, PGRC

03.00 p.m. Clustering of Selected Sri Lankan Rice (*Oryza sativa* L.) Varieties Based on Plant Architecture and Evaluation of Their Association to Relative Water Content under Drought
A.D. Nagalla, D.V. Jayatilake, V. Herath, L.D.B. Suriyagoda and H.A.M. Wickramasinghe

Screening of Sri Lankan Rice (*Oryza sativa* L.) Landraces for Drought Tolerance

S.P. Munasinghe, S. Somarathne and S.R. Weerakoon

Economic and Technical Feasibility of Upcountry Vegetable Production in Halmillewa, Sri Lanka

D.G.K.P. Wijerathne and W.A.P. Weerakkody

Evaluating the Growth Performance of Two *Azotobacter* species as an Inoculum for the Production of Bio-Fertilizers in Liquid Glucose Broth and Tryptic Peptone Broth

A.D. Nagalla, D.V. Jayatilake, H.M.V.G. Herath and L.D.B. Suriyagoda

Competing Risk Model for Dengue Epidemiology in Sri Lanka: Modeling the Length of Stay in Hospital

G.H.S. Karunaratna and M.R. Sooriyarachchi

Mass Rearing of *Cheilomenes sexmaculata* (Coleoptera : Coccinellidae) on Different Diets under Laboratory Conditions

T.D.C. Priyadarshani, K.S. Hemachandra, U.G.A.I. Sirisena and H.N.P. Wijayagunasekara

Biogas Slurry as a Fertilizer in Hydroponic Lettuce (*Lactuca sativa* L.) Cultivation

A.N. Siriwardana, W.A.P. Weerakkody and R. Pallawala

Weed Management Practices in Machine Transplanted Rice Cultivation

R.M.U.S. Bandara, B. Marambe, A.S.K. Abeysekara, W.M.U.B. Wickrama, H.M.M.K.K.H. Dissanayaka, A.N. Siriwardana, N.M.D.P. Nawarathna and Y.M.S.H.I.U. De Silva

Practical Field Test on Newly Designed Burial Type Lowland Power Cultivator for Effective Weed Control in the North-Central Province, Sri Lanka

G.V.T.V. Weerasooriya, D.N. Jayatissa and M. Rambanda

The Effect of Maturity Stage on Ripening and Quality Characters of Four Tomato (*Solanum lycopersicon* L.) Varieties of Sri Lanka

G.G.D.S. Priyankara, C.L.S.M. Karunaratne, K.H. Sarananda and M. Ariyaratne

Prospects and Issues Related to Tea Cultivation in Mid Country Homegarden Based Tea Smallholdings in a Selected Village in Sri Lanka

W.G.C. Wekumbura, A.J. Mohotti, E. Frossard, S.T. Kudagammana and K.D.R.R. Silva

Closing Session

Chairperson: Dr. M. Ariyaratne

Venue: Main Auditorium, PGRC

- | | |
|-----------|---|
| 4.00 p.m. | Invited Presentation by Distinguished PGIA Alumnus
“How to Build on your differences to be a successful leader”
Dr. Rukshan Gunathilake
Supply Chain Director, Ceylon Tobacco Company |
| 4.40 p.m. | Presentation of Awards |
| 5.00 p.m. | Vote of Thanks
Ms. Thilini Jayasekara
Secretary, Postgraduate Agriculture Students’ Association, PGIA |