

*26<sup>th</sup> Annual Congress of the Postgraduate Institute of Agriculture*  
**PROGRAMME**

*20 – 21 November 2014*

**INAUGURAL SESSION**

*Plant Genetic Resources Centre (PGRC), Gannoruwa, Peradeniya*

- 8.00 a.m.      **Registration**
- 9.00 a.m.      **National Anthem**
- 9.05 a.m.      **Traditional Lighting of the Oil Lamp**
- 9.10 a.m.      **Welcome Address by Dr. S. Pathmarajah**  
Coordinator - PGIA Congress 2014
- 9.20 a.m.      **Address by Ms. Dinali Fernando**  
President, Postgraduate Agriculture  
Students' Association
- 9.30 a.m.      **Address by Prof. K. Samarasinghe**  
Dean, Faculty of Agriculture  
University of Peradeniya
- 9.40 a.m.      **Address by Prof. S. Samita**  
Director, Postgraduate Institute of Agriculture  
University of Peradeniya
- 9.50 a.m.      **Address by Prof. Atula Senaratne**  
Vice Chancellor, University of Peradeniya
- 10.00 a.m.     **Address by the Chief Guest Dr. Steve J. Staal**  
Regional Representative for East and Southeast Asia,  
International Livestock Research Institute
- 10.20 a.m.     **Presentation of the Journal**  
“Tropical Agricultural Research, Vol. 26(1)”
- 10.25 a.m.     Highlights of the PGIA Annual Congress 2014
- 10.45 a.m.     TEA

*November 20, 2014*

*Technical Session I*

## **Diversity and Evaluation of Animal Genetic Resources**

*Venue: Main Auditorium, PGRC*

- 11.15 am      Chicken inventory and pattern of entry and exit of indigenous birds at village level in Punjab (Pakistan)  
**S. Sadeh, M. S. Khan, M. S. Rehman, M. N. M. Ibrahim and A. M. Okeyo**
- 11.35 am      Determinants of willingness to pay for different indigenous chicken types by farmers: using an experimental auction  
**M.N.D.F. Abeykoon, J. Weerahewa, P. Weligamage and G.L.L.P Silva**
- 11.55 am      Mitochondrial DNA variation in indigenous sheep (*Ovis aries*) breeds of Nepal  
**N.A. Gorkhali, J.L. Han and Y.H. Ma**
- 12.15 pm      Genetic Diversity and Relationship of Indonesian Indigenous Chickens Inferred from Microsatellite DNA Markers  
**H. Ashari, S. Sulandari, M.S.A. Zein and J.L. Han**
- 12.35 pm      Effect of Breeding Strategies to Increase Productivity of Indigenous Chicken in-situ in Bangladesh  
**F. Islam, S.C. Sarker, M.N.M. Ibrahim, A. M. Okeyo, H. Jianlin, M.A.Hoque and A.K.F.H. Bhuiyan**
- 12.55 pm      Characteristics of appearances, productive ability of F1 (Jungle fowl male x Fayoumi chicken female) and F1 (Jungle fowl male x H'mong chicken female) raising at National Institute of Animal Sciences – Viet Nam  
**N. T. H. Hanh, L. T. Thuy, Han Jialin, M. N. M. Ibrahim and A. M. Okeyo**
- 01.35 pm      LUNCH

*Technical Session II*

**Food, Feed and Nutrition**

*Venue: Seminar Room, PGRC*

- 11.15 am Antioxidant potential of rice bran oil prepared from red and white rice  
**Dilini Bopitiya and W.M.T. Madhujith**
- 11.35 am Study on isolation of potentially probiotic lactobacillus species from fermented rice  
**N. Jeygowri, N. Parahitiyawa, S. Jeyatilake, S. Ranadheera and W.M.T. Madhujith**
- 11.55 am Effect of boiling on the antioxidant concentration of Dioscorea alata (raja ala) grown in Sri Lanka  
**Ranithri Abeynayake and R. Sivakanesan**
- 12.15 pm Antioxidant activity and total phenolic content of different skin coloured brinjal (solanum melongena)  
**K.M. Somawathi, V. Rizliya, D.G.N.G. Wijesinghe and W.M.T. Madhujith**
- 12.35 pm Brassinosteroids improve quality of table grapes (Vitis vinifera L.) cv. flame seedless  
**W.A. Harindra Champa, M.I.S. Gill, B.V.C. Mahajan, N.K. Arora and Seema Bedi**
- 12.55 pm Potential of thampala (Amaranth) as a forage crop in Sri Lanka  
**I.K. Leukebandara, S. Premaratne and B.L. Peris**
- 01.15 pm Effects of increasing levels of dietary rice bran with or without phytase, on performance and egg parameters of Japanese quail  
**H.M.W.N. Abeyrathna, N.S.B.M. Atapattu and W.W.D.A. Gunawardane**
- 01.35 pm LUNCH

## Poster Presentations

Venue: Lobby, PGRC

2.00 pm

Weighted Modeling and Forecasting of Cocoa Production in Ghana:  
A Multivariate Approach  
**Sampson Ankrah, B.L. Peiris and R.O. Thattil**

Feasibility Study of Cryogenic Grinding Of Spices Using Latent Heat of Water: A  
Case Study for Chili (*Capsicum AnnuL.*)  
**D.M.S.P Bandara, K.S.P Amarathunga, B.M.K.S Thilakaratne, D.A.N.  
Dharmasena, T.M.R Dissanayake and A.J Fernando**

Increasing water productivity of rice by conjunctive use of rain and tank water with  
'Parachute' method of crop establishment: A case study from "Udakadawala  
Mahawewa" tank in Kurunagala district  
**K.R.Thilakasiri, L.W. Galagedara, M.I.M. Mowjood**

Assessment of Feeding and Watering Practices for Raising Goats in Punjab,  
Pakistan  
**M. S. Muhammad, M. S. Khan and A. Waheed**

Analysis of Gender Differences in Intra-household Time Allocation  
**R.M.S.D. Rathnayaka and J. Weerahewa**

Induction of Genetic Variability and Isolation of Mutants in Tuberose (*Polygonum  
tuberosa L.*)  
**Pooja Kainthura and Ranjan Srivastava**

Estimation of Rubber Price Returns Using Quantile Regression  
**Kwadwo Agyei Nyantakyi, B. L. Pieris and L. H. P. Gunaratne**

Postharvest Life of Cut Chrysanthemum Cultivars in Relation to Chemicals,  
Wrapping Material and Storage Conditions  
**Gunjan Sharma and Ranjan Srivastava**

Analysis of the body condition with free grazing cattle by GPS  
**Choi Eun Gyu, Sang Yoon Lee, Myeong Hun Kim, Ki Yeon Kim, Han Jong  
Ko and Hyeon Tae Kim**

The Separation efficiency of livestock manure biogas by Membrane  
**Jong Eon Kim, Sang Yun Lee, Chung Seop Lee, Hyeon Tae Kim**

Effect of rice plant and urea on soil organic matter content in lowland paddy field at  
Bayawa minor irrigation system in Kurunagala district  
**T. Sellathurai, T. Sivananthawerl, L.W. Galagedara and  
M.I.M. Mowjood**

Assessment of Inorganic Pollutant Contamination in Groundwater using Ground  
Penetrating Radar (GPR)  
**Y.N.S. Wijewardana, L.W. Galagedara, M.I.M. Mowjood and  
K. Kawamoto**

A novel cost-effective fermentation medium for the production of *Bacillus thuringiensis* subsp. *Israelensis* (Bti) for mosquito control  
**G.A.Udayantha, K.D.De A.G. Abeysingha and T.C. Bamunuarachchige**

Bulk Soil Properties as Determinants of the Soil Compression Strength of Puddled Lowland and Paddy Soils in Sri Lanka  
**G.V.T.V. Weerasooriya, D.N. Jayatissa and M. Rambanda**

Gelatinization of Rough Rice Using Far-Infrared (FIR) Radiation  
**T.M.R. Dissanayake, K.S.P. Amarathunga, B.M.K.S. Thilakaratne, D.M.S.P. Bandara and A.J. Fernando**

The Effect of CO<sub>2</sub> Distribution on Thermal Buoyancy in a Greenhouse  
**Hee Tae Kim, Chi Ho Kim, Eun Gyu Choi, Byung Ok Jin, Yong Cheol Yoon and Hyeon Tae Kim**

Comparative Analysis of the Cutting Load in Accordance with the Angle of the Combine Cutting Knife  
**Byung Ok Jin, Min Ho Lee, Tae Jong Park, Chi Ho Kim, Min Ho Heo and Hyeon Tae Kim**

Analysis of Internal Environment of a Pig House using Energy Recovery Ventilator  
**Byeong Eun Moon, Hee Tae Kim, Kyu Dong Nah, Jin Hyun Kim and Hyeon Tae Kim**

Monitoring of Pig Body Temperature Using Infrared Sensors  
**Jin Cheol Jang, Jun Yeop Lee, Sang Yoon Lee, Hyeok Ju Kim, Dong Yun Choi, Seong Hyeon Lee, Hyeon Tae Kim**

Application of Near Infra-red (NIR) Spectroscopy to Quantify Fat and Total Solid Contents of Sweetened Condensed Creamer  
**S. Subajiny, M.M. Jayasiri and Terrence Madhujith**

Effects of hydro-climatic fluctuations on catchability of fish in a medium perennial Vavuniya reservoir, Sri Lanka  
**A.E. S. Patrick, S.Kuganathan and U.Edirisinghe**

High Prevalence of Stunted Pre School Children in Food Insecure Rural Households  
**J.Thamilini, K.D.R.R. Silva and J.M.U.K. Jayasinghe**

Adsorption characteristics of Cadmium and Lead heavy metals into locally synthesized Chitosan Biopolymer  
**J.M. Unagolla and S.U. Adikary**

A Preliminary Investigation on Methods of Reducing Antibiotic Resistant Bacteria in Broiler Litter in Selected Farms in Mid Country Sri Lanka  
**E.M. Herath, W.S. Dandeniya, A.G.S.I. Samarasinghe, T.P.M.S.D. Bandara and R.N. Jinadasa**

## *Invited Presentation*

*Venue: Main Auditorium*

02.20 pm How will bio-fuel affect food and energy security in Asia?

**Dr. Venkatachalam Anbumozhi**

Senior Researcher, Economic Research Institute for ASEAN and  
East Asia Jakarta, Indonesia

## *Technical Session III*

### **Water Resources Management**

*Venue: Main Auditorium, PGRC*

- 03.00 pm Wastewater quality improvement by biosorbant for textile industry  
**A.I. Hettige and M. I. M. Mowjood**
- 03.20 pm Morphometric analysis of the Gal Oya river basin using spatial data  
derived from GIS  
**Withanage, N.S., Dayawansa, N.D.K<sup>1</sup>. and De Silva, R.P<sup>2</sup>.**
- 03.40 pm Comparative performance assessment of major irrigation systems in upper  
Deduru Oya Basin  
**W.A.S. Lakmali, E.R.N. Gunawardena and N.D.K. Dayawansa**
- 04.00 pm Modelling the impact of changes in rainfall distribution on the irrigation  
water requirement and yield of short and medium duration rice varieties  
using APSIM during Maha season in the Dry zone of Sri Lanka  
**R.P.R.K.Amarasingha, L.D.B. Suriyagoda, B. Marambe, L.W.  
Galagedara,G.L.L.P Silva, R. Punyawardena, R. Wijekoon, U.  
Nidumolu, and M. Howden**
- 04.20 TEA

*Technical Session IV*

**Molecular Biology and Biotechnology**

*Venue: Seminar Room, PGRC*

- 03.00 pm An efficient protocol for isolation of functional RNA from peel tissue of different banana (*Musa* spp.) cultivars for gene expression studies on anthracnose development  
**U. M. Aruna Kumara and Devika M. De Costa**
- 03.20 pm DNA markers linked to blast resistance genes, Pikh, Pit (p), and Pita, for parental selection in Sri Lankan rice breeding  
**W.A.D. Jayawardana, G. A. U. Jayasekera, R. L. C. Wijesundera, D. M. N. Dissanayake, S. D. S. S. Sooriyapathirana, C. K. Weebadde, K. L. N. S. Perera, K. R. D Gunapala and P. Hettige**
- 03.40 pm Genetic diversity of the Sri Lanka Yellow Dwarf coconut form as revealed by microsatellite markers  
**L.C.J. Kamaral, S.A.C.N. Perera, L.N.S. Perera and P.N. Dassanayaka**
- 04.00 pm Validation of molecular markers for the analysis of genetic diversity of amylose content and gel consistency among representative rice varieties in Sri Lanka  
**H.K.D.H. Fernando, T.J.C. Kajenthini, S.P. Rebeira, T.C. Bamunuarachchige, and H.A.M. Wickramasinghe**
- 04.20 pm TEA

*November 21, 2014*

*Technical Session V*

## **Biosystems Engineering & Remote Sensing**

*Venue: Main Auditorium, PGRC*

- 08.00 am Estimation of above ground biomass in Horton Plains National Park, Sri Lanka using optical, thermal and RADAR Remote Sensing data  
**A.R. Gunawardena , S.P. Nissanka, N.D.K. Dayawansa and T.T. Fernando**
- 08.20 am Seasonal changes in home range and habitat use of elephants in southern and north-central provinces of Sri Lanka.  
**M.S.L.R.P. Marasinghe, N.D.K. Dayawansa and R. P. De Silva**
- 08.40 am Milling recovery and quality of combine harvested paddy– Case study in Batticaloa and Ampara districts  
**R. Bawatharani, D.N. Jayatissa, D.A.N. Dharmasena and M.H.M.A. Bandara**
- 09.00 am Vibration simulation testing of banana bulk transport packaging systems  
**W.M.C.B. Wasala D.A.N. Dharmasena, T.M.R. Dissanayake and B.M.K.S. Thilakarathne**
- 09.20 am Analysis of the shape of feed speed and cutting speed of Korean and Japanese combines with high-speed camera  
**Min Ho Lee, Byung Ok Jin, Tae Jong Park, Chi Ho Kim, Min Ho Heo and Hyeon Tae Kim**



*Technical Session VI*

**Agronomy and Plant Breeding**

*Venue: Seminar Room, PGRC*

- 08.00 am      Effect of root and foliar application of soluble silicon on anthracnose disease, plant growth and some fruit quality parameters of Capsicum  
**H.A.R.K. Jayawardana, H.L D. Weerahewa and M.D.J.S. Saparamadu**
- 08.20 am      Morphological variation in selected Sri Lankan rice (*Oryza sativa* L.) accessions in relation to the vegetative parameters  
**H.C.D. Wijayawardhana, H.M.V.G. Herath, P.A. Weerasinghe and H.M.D.A.K. Herath**
- 08.40 am      Performance of pedigree, single seed descent and modified bulk selection methods in F4, F5 and F6 generations in cowpea (*Vigna unguiculata* L. Walp) breeding  
**M.C. Millawithanachchi, V. A. Sumanasinghe, A.P. Bentota and S. de Z. Abey Siriwardena**
- 09.00 am      Consequences of presently used fertilizer mixtures for tea growing soils of the low country of Sri Lanka on ammonia volatilization  
**L.R.M.C. Liyanage, A.N. Jayakody and G.P. Gunaratne**
- 09.20 am      Soil chemical properties of low land rainfed paddy fields and their suitability for rice cultivation – a case study in Kurunegala district  
**W.M.U.K. Rathnayake, R.P. De Silva and N.D.K. Dayawansa**

*Invited Presentation*

*Venue: Main Auditorium*

- 9.40 am      Global warming and plant resilience: understanding the role of plant carbon metabolism  
  
**Prof. Owen Atkin**  
ARC Centre of Excellence in Plant Energy Biology Australian National University, Canberra

- 10.20 am      TEA

*Technical Session VII*

**Plant Protection**

*Venue: Seminar Room, PGRC*

- 10.50 am Evaluation of *Trichogramma chilonis* Ishii (Hymenoptera: Trichogrammatidae) as a potential biocontrol agent  
**S.A.A. Singhamuni, M.I.U.F. Jayasuriya, K.S. Hemachandra, and U.G.A.I. Sirisena**
- 11.10 am Isolation of Bacteriophages and determination of their efficiency in controlling *Ralstonia Solanacearum*, the bacterial wilt pathogen of tomato  
**M. D. Kalpage and D. M. De Costa**
- 11.30 am A comparison on termite assemblages in plantations and semi-evergreen forest –A case study from north Wayanad, Kerala, India  
**K. V. Bhavana, Amina Poovoli and K. Rajmohana**
- 11.50 pm Scanning electron microscopy of mealybugs (Hemiptera: Pseudococcidae) of Sri Lanka  
**U.G.A.I. Sirisena, G.W. Watson, K.S. Hemachandra, Obediah Sage and H.N.P. Wijayagunasekara**
- 12.10 pm *Trichogrammatoidea bactrae* Nagaraja (Hymenoptera: Trichogrammatidae): A potential biocontrol agent of rice leaf folder  
**M.C.D. Perera, K.S. Hemachandra and U.G.A.I. Sirisena**
- 12.30 pm LUNCH

*Technical Session VIII*

**Statistics and Economics**

*Venue: Main Auditorium, PGRC*

- 10.50 am Equal-weighted information criterion for model selection in univariate time series analysis  
**Sampson Ankrah, B.L. Peiris and R.O. Thattil**
- 11.10 am Weighted ranking procedure for combining univariate time series models  
**Sampson Ankrah, B. L. Peiris, and R. O. Thattil**
- 11.30 am An evaluation of maize contract farming system in Sri Lanka; adoption, problems and future prospects  
**P. A. Jayamini Champika and L.M Abeywickrama**
- 11.50 am Effect of regionalism on south Asian trade, a gravity model analysis,  
**P. Dembatapitiya and Jeevika Weerahewa**
- 12.30 pm LUNCH

*Invited Presentation*

*Venue: Main Auditorium*

- 01.15 pm Global Food and Meat Industry – Trends and Challenges  
**Prof. Dong Uk Ahn**  
Animal Science Department, Iowa State University

*Technical Session IX*

**Improvement and Management of Animal Genetic Resources**

*Venue: Main Auditorium, PGRC*

- 01.55 pm      Pattern of pathological changes of the liver in broiler birds under different management conditions  
**S. S. H. M. M. L. Senanayake, J. G. S. Ranasinghe, R. Waduge, K. Nizanthaand, P. A. B. D. Alexander**
- 02.15 pm      Fertility and hatchability of eggs and growth performance of mini-incubator hatched indigenous chicken in rural areas of Bangladesh  
**N.H. Desha, F. Islam, M.N.M. Ibrahim, M. Okeyo, H. Jianlin and A.K.F.H. Bhuiyan**
- 02.35 pm      Ex situ improvement of indigenous chicken in Bangladesh  
**S. Faruque M.N. Islam and A.K.F.H. Bhuiyan**
- 02.55 pm      Morphological and morphometric features of village chicken in Sri Lanka  
**R.P. Liyanage, C.M.B. Dematawewa and Pradeepa Silva**
- 03.15 pm      Goat Management Systems in Bulathkohupitiya Veterinary Range  
**R.A.U.K. Wijethunga, S. Premaratne and B.L.Peiris**
- 03.35 am      TEA

*Technical Session X*

**Agricultural Extension and Education**

*Venue: Seminar Room, PGRC*

- 01.55 pm      Initiate m-learning among a group of young farmers from Kandy district Sri Lanka: activity theory based approach  
**Uvasara Dissanayeke, K.P. Hewagamage Robert Ramberg, and Gihan Wikramanayake**
- 02.15 pm      Factors influencing motivation to transfer training: an empirical study of government sector training program in Sri Lanka  
**G.T. Madagamage, B.N.F. Warnakulasooriya, and H.V.A. Wickramasuriya**
- 02.35 pm      University students' intention to pursue overseas jobs: A Case of the University of Peradeniya  
**Ms. C. A. K. Weerasinghe and S. Kumar**
- 02.55 pm      Factors predicting the intention of academics of faculties of agriculture of the state universities in Sri Lanka to engage in outreach activities  
**Ms. R.M.S. Wijerathna, H.V.A, Wickramasuriya and B. Marambe**
- 03.35 am      TEA

*Closing Session*

*Venue: Main Auditorium, PGRC*

- 4.00 p.m.      Invited Presentation by Distinguished PGIA Alumnus  
PGAI and its contribution to Human Development in the region; a personal perspective  
**Dr. A.P.G.S. De Silva**
- 4.40 p.m.      Awarding ceremony
- 5.00 p.m.      Vote of thanks  
**Ms. Kamani Dissanayake**  
Secretary, Postgraduate Agriculture Students' Association