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DGIA News

The Newsletter of PGIA (Postgraduate Institute of Agriculture)



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Message from the Director

I am pleased to send this message to the first issue of the Newsletter of the PGIA. Newsletter of the PGIA was a long felt need of the PGIA, mostly because so many activities take plae at the PGIA but rarely the outside community knows about them. The newsletter can act as the mode of communicating the research findings of the PGIA reasearch work to the non scientific community. I take this opportunity to thank those who did the hard work to produce the first issues of the newsletter and hope that there will be a good feed back from the readers on possible other aspects to be considered as well as additional information to be included in the future issues.





Melbourne University, Australia

SHORT COURSES, WORKSHOPS AND FUNDING

Workshop on Empowering yourself 15-16 December 2014

All staff of the PGIA successfully participated in the workshop on "empowering yourself" specially organized for the PGIA staff by the Staff Development Centre of the University of Peradeniya held from 15-16 December 2014 at the University of Peradeniya. The resources persons were Dr. Jayalath Edirisinghe, Director, Centre for Distance and Continuing Education, Dr. B.M.K. Perera, Director, Career Guidance Unit and Dr. C. Benaragama, Director, Staff Development Centre of the University of Peradeniya.



participant explaining for lacus in compowering yearson workshop

Plant Protection Techniques 10 days from 24th November 2014

The above short course was organized by the Board of Study in Plant Protection for the newly recruited research officers of the Department of Agriculture. The Short Course was sponsored by the SL CARP and was held for 10 days from 24th November 2014. The Coordinator for the Short Course was Dr. Devika De Costa.

Funds' for Research is Issued at the PGIA

The PGIA established Research Facilitation Fund (RFF) in the year 2010 to fund/facilitate research expenses of students. M.Phil. and Ph.D. full time research students can apply and obtain funds for their research for 2-3 years through RFF for which the research should be of national importance. This year allocation for RFF has increased up to 6 million and research studies have already been selected to fund through RFF in the year 2015.

Invited Lecture on Pot plant industry and bio control 28th October 2015

Mr. Arne E Svinningen of Green Farm Marawila delivered a guest speech on "Pot plant industry and biological control of pests in ornamental plants" on 28th October 2014 at the PGIA Auditorium.

Multivariate Data Analysis 23-25 March 2015

The Board of Study in Biostatistics at the Postgraduate Institute of Agriculture (PGIA), University of Peradeniya organized a three day short course on Multivariate Data Analysis, 23-25 March 2015 this short course provide a broad knowledge and skills of analyzing multivariate data for a wide variety of academic disciplines. Participant were acquired, hands-on experience to use SAS ® to analyze multivariate data

STUDENTS ACHIEVEMENTS

Following students were selected / presented articles of their research at international conferences held abroad.

Ms. N.M.N. Nambapana – Ph.D.

"The Effect of Vitamin E replaces on the Performance and Meat Quality of Broiler Production" was selected for a presentation at the 10th Asian Pacific Poultry Conference (APPC) which was held in ICC Jeju, Korea. (from 19th to 23rd October 2014.)

Mr. U.M.A. Kumara – Ph.D

Comparative analysis of intercultivar variation against anthracnose among banana cultivars grown in Sri Lanka" was selected for an oral presentation at the Plant Biology Europe FESPB/EPSO Congress, held in Dublin, Ireland

Ms. J.A.S. Chathurika – Ph.D.

20th World Congress of Soil Science has accepted an abstract of the Ph.D. research on Improving Soil Fertility of Low Productive Lands using Beneficial Management Practices for Maize (zea mays) for Poster Presentation at the Congress which will be held (from 8 – 13 June 2014) at ICC Jeju, Korea.

Ms. M.P.M.S.H. Perera - Ph.D.

Pakistan Journal of Nutrition published a paper submitted by Ms. Perera on "Effect of Vegetable Mixed Curry on Glycaemic Index and Glycaemic Load of Soy Flour Incorporated Traditional Sri Lankan breakfast foods in Healthy Adults". Ms. Perera is a recipient of Research Facilitation Fund of the Institute in the year 2013.

Mr. A. Vengadaramana – Ph.D.

The International Conference on Agricultural, Ecological and Medical Sciences held on 3-4 July 2014 at London, UK selected the paper submitted by Mr. Arumugam Vengadaramana as best paper of the session of his research on "Host pathogen interactions and epidemiology of leaf twister disease of onion (allium cepa.L) in Sri Lanka".

Awards for Research

Prof. W.A.J.M. De Costa and Dr. A.R.F. Zahra of the Board of Study in Crop Science and Dr. D.M. De Costa of the Board of Study in Plant Protection were awarded commendation certificates by the National Science Foundation of Sri Lanka for their research on 'Expression of candidate genes for salt tolerance in Sri Lankan rice germplasm' at the NSF Research awards-2013 held on December 2014. This research was funded by the National Science Foundation, Sri Lanka and the International Centre for Genetic Engineering and Biotechnology (ICGEB), Italy . Dr. Zahra obtained her Ph.D. from Postgraduate Institute of Agriculture, Peradeniya and her Ph.D. programme was funded by the above finanching agencies.



Findings of the Research work Concluded.....

A landfill bioreactor with agricultural wastes can be successfully used to convert available biomass to bioenergy and resultant by-products can be utilized for organic fertilizer. Rice husk charcoal as a coating material of urea is used in order to improve the efficiency of fertilizer applications. In Sri Lanka, out of the total rice production, a considerable amount of rice straw and rice husk go wasted. Hence, there is a great potential of production of quality rice straw compost and rice husk charcoal. The study shows that there is a high potential of producing compost from landfill bioreactor using rice straw. Rice husk charcoal coated urea can potentially be used as a slow releasing nitrogen fertilizer which reduces leaching losses of urea. It also helps to reduce the phosphate and potassium MID leaching. The cyclic effect of phosphate release is an important finding which could be the central issue in defining microbial behavior in soils. The fluctuations of phosphate may have cyclic effects of 28 days. Charcoal coated urea also increased the pH and Eh value of the soil up to the desired levels. In addition, coating is less costly and helps reduce the two third of urea usage and saves 70% fertilizer cost and contribute to mitigate atmospheric greenhouse gas increases as well as pollution of water bodies.

Dr. D.A.S. Gamage - PhD.

Board of Study in Agricultural Engineering (Biosystem Enginearing)

> **Development of nutrient management** technologies for sustainable rice

farming for mitigating water and atmospheric pollution



Macrobrachium rosenbergii is the most popular higher valued freshwater prawn species in the world.but their natural stock is gradually depleting in Sri Lanka. Therefore, it is important to rationally manage these stocks. Experiments were conducted at Brackish Water Prawn Breeding Station at Pambala, Chilaw. In order to determine the suitable male and female (M/F) ratio for M. rosenbergii under Sri Lankan hatchery conditions. they were kept at 1:10, 1:8, 1:5, and 1:3 M/F ratios under artificial conditions. Results revealed that 1:5 ratio give significantly higher larvae, while in 1:10 ratio, eggs & larvae were in minimum numbers. To determine the optimum salinity level for spawning of gravid females. Salinity was kept at 4, 5, 6, and 7% and a constant temperature of 28 $^{\circ}$ C was maintained. Results revealed that 5% give the optimum conditions. Rainfall Pattern (RP) is a major factor for downstream migration of prawns in Deduru-Oya. November up to February was the main natural breeding season, which was directly correlated to RP. Socio-economic data collected from

R.M.G. Ratnayake – м.Рыі. Board of Study in Animal Science

Artificial spawning and identification of natural breeding season of **macrobrachium** rosenbergii (de man, 1879) in North Western



Investigation was done to identify the shrimp species, study the morphometric and reproductive aspects. Samples were collected from the commercial catches in Kakkaithivu landing centre from Jan-2011 to Dec-2012. Seven species of shrimps, Metapenaeus dobsoni (MD), M. monoceros (MM), Penaeus indicus (PI), P. japonicus (PJ), P. latisulcatus (PL), P. monodon (PM) and P. semisulcatus (PS) were identified. Among these, MD and PJ were recorded for the first time in Jaffna estuary. Chisquare Analysis showed the Sex ratio is 1:1 in studied period except April, July and Oct 2012. Student Kakkaithivu t-test indicates isometric growth for both sex except female MM, PS, PJ and MD. Mean weight of shrimp showed that females were significantly heavier than males and a significant difference in the shrimp catches and lunar phases found. New moon showed significantly higher shrimp catches compared to the full moon. No relationship was found between seasonal trends of rainfall, temperature and salinity with shrimp catches.

prawn fishers in Deduru-Oya revealed that their educational level is low & living conditions are poor

S.Piratheepa - M.Phil. **Board of Study in Animal Science**

Some aspects of shrimp resources in coastal waters, Jaffna



Amino acid industry is one of the largest bio-industries in the world producing amino acids through fermentation. However, bacterial production of amino acids has been sparingly exploited in Sri Lanka. Therefore, a research was initiated to isolate promising Escherichia coli and related bacterial isolates to produce amino acids. Twelve soil-borne (I1-I12) and four water-borne (I13-I16) Lin vitro production of amino acids bacterial isolates recovered from the Faculty of Agriculture of Rajarata University of Sri Lanka were evaluated for the production of ten amino acids. Bacterial fermentation was carried out in two molasses media (FM-1 and M-1) and a glucose medium (L-6) and the amino acid production was assessed using paper chromatography. The maximum excretion of L-phenylalanine, L-isoleucine, L-histidine, L-methionine and L-alanine were 1.962 (I10), 0.729 (I16), 1.697 (I10), 1.400 (I13) and 1.875 (I11) g/l, respectively in different media. Among the media used, molasses media (FM-1 and M-1) were highly supportive for the production of L-phenylalanine, L-alanine and L-methionine.

M.C.M. Zakeel - M.Phil Board of Study in Agricultural Biology

by escherichia coli and related soil and water-borne bacterial isolates on different substrates



Findings of the Research work Concluded.....

Dr. S. Twumasi-Ankrah- PhD.

Board of Study in Biostatistics

Model Selection In Time Series Analysis: Illustrated By The Ghana Cocoa Sector



This thesis is on the theoretical and empirical aspects of time series analysis. In the theoretical aspect, we investigated the problems associated with the model selection procedures. And, in the empirical part, we constructed time series models by applying a proposed weighting scheme for combining models to the Ghana cocoa data. Firstly, this study extends the standard approach to combining forecasts by proposing a weighting scheme. The results of the comparative analysis, from the simulated data sets, provided a strong support for the proposed weighting procedure. Secondly, information criteria often lack uniformity in selecting the 'best' model. Thus, we investigated three commonly used conventional information criteria by proposing an information criterion. The results, from the simulated data sets, revealed that the proposed information criterion (PIC) performed better than the conventional methods (i.e., AIC, SIC and HQ). In the empirical study, we constructed vector error correction models for production and export earnings; and a univariate time series model for production by applying the proposed weighting scheme. We observed the superiority of the multivariate time series modeling over the univariate time series approach. Thus, for combine forecast method, we recommend the proposed weighting scheme under the multivariate time series modeling, for forecasting production and export earnings of cocoa in Ghana.

M.N. Kumari - M.Phil

Board of Study in Agricultural Engineering (IWRM)

Quality and Availability of Agro-well

Water in Malwathu Oya Cascade-I in Anuradhapura District



Malwathu Oya cascade-I is one of the largest and intensively cultivated small tank cascade systems in Anuradhapura district. Agro-wells are the most valuable resource for farmers in this cascade since these shallow dug wells have a good potential to sustain crops during the dry season. The study focused on characterising agro-well water for its suitability for irrigation. Based on the height of water column at the end of the dry season (August 2012) 20%, 25%, 30% and 25% of the wells had low, moderate, high and very high potential for agriculture respectively. All the chemical parameters monitored except nitrate and ammonium tend to concentrate towards the lower part of the cascade during the pre-monsoon period. However, the concentration is reduced substantially during the monsoon. During pre-monsoon period 35% and 65% of the well water was categorized as good and doubtful for irrigation, respectively.

R.N.N.S.Sugathapala — M.Phil

Board of Study in Agric. Engineering

Minneriya reservoir is a lowland shallow irrigation tank located in the North Central Province



Nineteen freshwater fishes and one crustacean food fish species were found in the Minneriya reservoir catch [84.4% cichlid species (Oreochromis mossambicus, O. niloticus), 0.5% of exotic carps and 2.95% of indigenous species (Tor khudree, Ompok bimaculatus and Channas striata)]. The most important hydrological factor influencing the fish production was the change in the water level and fluctuation of water level follows the rainfall pattern. The existing procedure of Minneriya reservoir fisheries management is a community based management system, which should be developed to a zero-based co-management system.

T.N. Rajapaksha - M.Phil. Board of Study in Agric. Extension

Effectiveness of training on health

and safety
measures
for municipal
waste collectors:
A case study in
Galle Municipal
Council



Municipal Waste Collectors (MCWs) exposed to health and safety risks including mortality and morbidity during the process of waste collection. Therefore the research has been designed and delivered a training programme and Personal Protective Equipment (PPE) in-order to minimize health and safety risks of the MWCs attached to Galle Municipal Council. Findings revealed that the project interventions have contributed significantly to improve the MWCs' knowledge, attitudes and practices related to Occupational Health and Safety (OHS) measures. Periodical training programs, continuous supervision and supply of PPE, and intervention of organizational policies and procedures will further work for the betterment of the OHS measures of MWCs.



was held from 20 - 21 November 2014 at the Plant Genetic Resources Centre, Gannoruwa. The theme for this year was "Farmer, Family and Food Security" which acquired to mark the international year of family farming. Dr. S. Pathmarajah, the Coordinator of the Congress with the organizing Committee had worked tirelessly to make this event a success. The Review Committee accepted 49 full

ANNUAL **GONGRESS** Congress organizing committee

papers out of 108 received and 24 posters to present at the congress and to publish in the Journal of Tropical Agricultural Research Vol.26, which will be published in four issues. The Congress was enriched with the invited presentations by Dr. Venkatachalam Anbumozhi, Senior Researcher, Economic Research Institute for ASEAN and East Asia, Jakarta, Indonesia, Prof. Owen Atkin, ARC Centre of Excellence in Plant Energy Biology, Australian National University, Canberra and Prof. Dong Uk Ahn, Iowa State University, USA. This year the Congress was sponsored by the International Livestock Research Institute (ILRI). The Chief Guest was Dr. Steven J. Staal, Regional Representative of East and Southeast Asia, ILRI.



Guest speechees at the congress



Technical session in progress at the congress

Students, Best Presenters Awarded in the Technical Sessions in Each Disciplines As.....

Diversity and Evaluation of Animal Genetic

Resources - Mr. N.D.F. Abeykoon

Food Feed and Nutrition

- Ranithri Abeynayake

Water Resources Management Biosystems Engineering and Remote Sensing - N.S. Withanage

Agronomy and Plant Breeding

- M.S.L.R.P. Marasinghe

- H.A.R.K. Jayawardena

Plant Protection

- M.D. Kalpage - Sampson T. Ankrah

Technical Session 9

Statistics and Economics

- R.P.Liyanage

Technical Session 10 Poster Presentation

- R.M.S. Wijeratne

-E.M. Herath

Awards from Alumni Association

R.P. Liyanage Best Presentation -First Runner up -R.M.S. Wijeratne

Second Runner up - Sampson T. Ankrah

Overall best presentation at the 26th Annual Congress

Morphological and Morphometric features of village chicken in

Sri Lanka -R.P. Liyanage



Water Professionals' Day Symposium - 2014

The Water Professionals' Day 2014 was held on 1st October, 2014 at the Prof. R.R. Appadurai Auditorium of the Faculty of Agriculture, University of Peradeniya. It was organized by the Geo-Informatics Society of Sri Lanka, Cap-Net Lanka and Postgraduate Institute of Agriculture (PGIA), University of Peradeniya, in collaboration with UNDP with the aim of providing a common forum to the students, researchers, managers, administrators who are working in the water sector to present their research findings, share the knowledge and learn the experiences of managing water under changing climatic conditions ensuring adequate availability of water for different water use sectors including agriculture. The theme of the symposium was 'Challenges for Sustainable Water Management through Improved Water Productivity in Agricultural Systems'.

The symposium consisted of an inaugural session, a panel discussion and three technical sessions. The chief guest of the inaugural session was Prof. Atula Senaratne, Vice Chancellor, University of Peradeniya. Dr. N.D.K. Dayawansa, Coordinator of the Water Professionals' Day Symposium, 2014, Prof. K. Samarasinghe, Dean, Faculty of Agriculture, University of Peradeniya, Prof. S. Samita, Director, PGIA, Dr. M.I.M. Mowjood, Acting Coordinator of Cap-Net Lanka, Ms. Shireen Samarasuriya of the UNDP also addressed the gathering. A panel discussion was held under the theme of 'Improving Water Productivity in Agricultural Systems through Sustainable Water Management'. This was chaired by Dr. H. Manthrithilake of the International Water Management Institute (IWMI). The panelists were

Ms. Tilaka Samarathunga of the Mahaweli Authority of Sri Lanka, Ms. Janaki Meegastenna of the Irrigation Department and Dr. W.M.D.B. Wickramasinghe of the Natural Resources Management Centre,

Department of Agriculture. Eleven research papers were presented in three technical sessions.



Prof. S.Samitha, Director, PGIA addressing the gathering

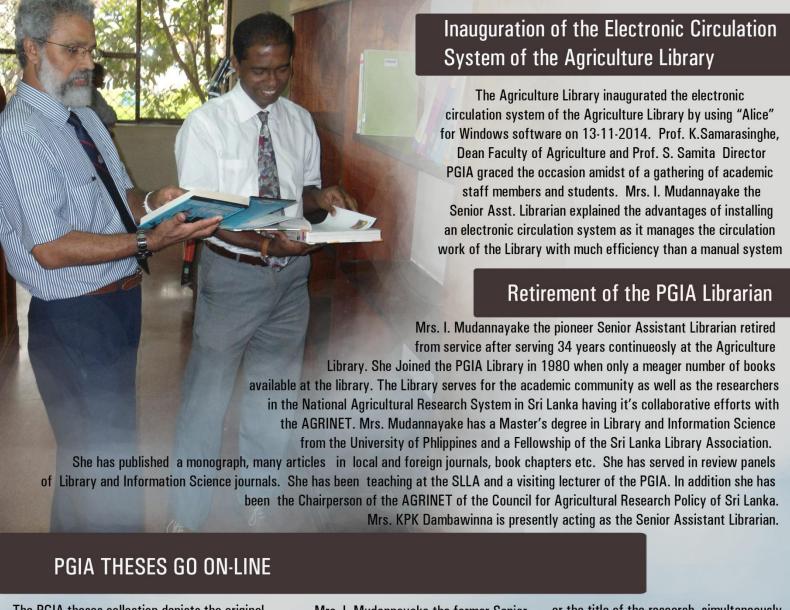
World Food Day

A programme to commemorate The World Food Day was organized by the Lions Club of Kandy in association with the PGIA. The theme for this year is Family Farming: Feeding the World - Care of the Earth. School Teachers of Agriculture in Kandy District and A/L students of Kandy schools participated in this programme.



The panel discussion

at water professionals" day symposium



The PGIA theses collection depicts the original research conducted by graduate students of the PGIA. The theses collection occupies a unique place in the Agriculture Library, providing a solid information base for the researchers. Although the collection is a rich source of information the accessibility to the collection was limited due to the fact that those who want to refer a thesis have to come to the Agriculture Library to use it in the Library itself. It was a timely measure that the National Science Foundation (NSF) has selected the PGIA theses collection to be digitized under the National Digitization Project, with

Digitization Project, with
the prime objective of
building up Institutional
Information Repositories.
Four hundred and seventy
six (476) M.Phil and
Ph.D theses and ninety four
(94) MBA dissertations
received by the Library for
the period from 1979 to May 2014
were electronically scanned and
mounted on the PGIA website
(www.pgia.ac.lk) in October 2014

cutting across institutional barriers to free flow of information.

Mrs. I. Mudannayake the former Senior Assistant Librarian of the PGIA who coordinated the project in collaboration with the NSF reported that initially only the abstracts of theses are accessible through the Internet although the entire theses collection is fully electronically scanned. There is a unique feature in this initiative because PGIA researchers who have published full papers in the PGIA journal the "Tropical Agricultural Research" based on their theses can be accessed under the name of the researcher

or the title of the research simultaneously with the theses. The PGIA acknowledges NSF for all collaborative efforts and funding of the project.



Food and Nutrition M.Sc students form a Nutrition Club

Students who follow the M.Sc. degree program in Food and Nutrition have formed a Nutrition Club and carried out various tasks for well being of general public. They have conducted nutrition awareness programs for parents of primary school children. And children in grades 8-11 in Colombo, Nuwara-eliya and Kilinochchi districts. More than 4000 school children participated in these programs which conducted in Sinhala and Tamil media. Inter schools quiz competitions has also been organized by the Nutrition Club.

Collaboration with Department of Agriculture

The PGIA has initiated formal collaboration with Department of Agriculture (DOA). The Director PGIA made a presentation to the DOA directorate on the matter on 14th January 2015 at the In-service Training Institutef DOA, Gannoruwa, Peradeniya.

Overseas training of Deputy Registrar

Ms. S. Herath, Deputy Registrar participated training programme on Participatory Monitoring and Evaluation which was held from 11-21 November2014 at International Centre for Development Communication (ICDC) of the Kesartsat University Thailand.

Awareness program for the parents of children's in primary school

Sports and Leisure Activities

The Cricket Team of the Sports and Leisure Association of the PGIA staff took part in the cricket tournament organized by the University of Peradeniya and won 1st place of the tournament.

Future Events

Conferment of Degrees at the General Convocation

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PGIA has produced 6 Ph.D, 14 M.Phil, 238 M.Sc, 5 MBA degrees and 20 Postgraduate Diplomas. All the Degrees will confer at the General Convocation of the University of Peradeniya scheduled to be held in May 2015. It is with great happiness the PGIA congratulate these graduates, the success in their future endeavours.

Application will Open for New Comers....

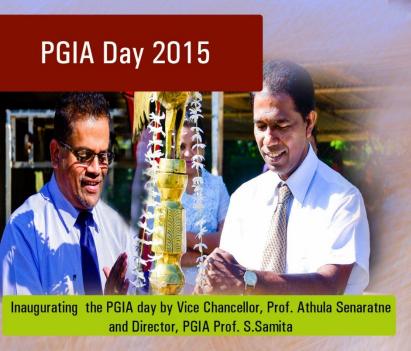
PGIA will open the application for the 2016 intake in August 2015, among the applicant selected applicants will be called for the aptitude test. Student has to face to the interview or may have an opportunity to take admission directly, according to their aptitude test marks and the past records.

27th Annual Contgress of PGIA 19th & 20th November 2015

The Annual Congress is an international scientific forum organized by the PGIA every year with a multitude of objectives. It aims at promoting postgraduate research in agriculture and related areas by providing a forum for presentation, discussion and debate for disseminating research findings. The papers presented at the congress will be published in Tropical Agricultural Research, Vol. 27 (2015): a peer reviewed quarterly journal.

For more information Please visit

http//www.pgia.ac.lk



Postgraduate Agricultural Students Association (PASA) organized a PGIA Day on 28th March 2015, a full day programme in which the morning session was held at the University Ground. Morning session was inaugurated with hoisting National Flag by the Vice Chancellor Prof. Athula Senaratne and University Flag by the Director, Prof.S. Samita and lighting the oil lamp. Students, Academic and Non Academic Staff participated in the PGIA Day.



Many entertainment events were organized by the PASA. Morning session was concluded with distributing prizes for the winners of the events in the late afternoon. The glamorous evening session held at the PGIA roof top with DJ, drama and other entertainments.

It is about to start a game in the morning sesion



PGIA day Cricket tournament



In the PGIA day, cricket tournament was played by the academics, non-academics and the students. Altogether 6 teams played. A team comprised of the 11 members including 3 female players.

