



PGIA News



The Newsletter of Postgraduate Institute of Agriculture, University of Peradeniya

*Be Innovative and Employable
Join the Prestigious Institution for Postgraduate
Agricultural Education and Research in Sri Lanka*



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ABOUT THE NEWSLETTER

Established in 1975, the Postgraduate Institute of Agriculture (PGIA), affiliated to the University of Peradeniya is a prestigious Institution devoted to the development of higher level manpower in agriculture and related areas in Sri Lanka. During its four decades of existence, it has made tremendous progress in developing nationally and internationally important consortium of degree and non-degree programmes together with necessary infrastructure for teaching and research. Its' biggest strength is the availability of qualified and experienced staff, both from within the university and outside research and development institutes and linkages with many reputed international universities and research centers. PGIA NEWS is the main organ for the communication of various activities of the institute to the policy makers, academic community, stakeholders and the general public. It is published semi-annually and incorporates current news, research briefs and other information relating to agricultural education, research and development. The PGIA requests comments/suggestions from the readers on this newsletter if any, to improve its quality and content in the future issues.

SCIENTIFIC WRITING: AN INDISPENSABLE TOOL FOR POSTGRADUATES

Scientific research generates new and reliable knowledge which can be used for economic development and most countries continuously progress by utilizing these innovations. The utilization of new innovations depend the stage of development of different countries , thus developed countries due to the availability of competent and skillful scientists coupled with infrastructure and finances are far ahead of the developing countries in the development and use of new innovations. Basically, no country can make steady economic and social progress unless appropriate scientific innovations are continuously created and used. Therefore, scientific research should be considered as an investment for sustainable development.

As Wilhelm Humboldt , the founder of the University of Berlin stated “ *Most of the tomorrow's economies is being born in the university research laboratories.*”. The above statement amply emphasizes the crucial role of research in universities in national development all over the world. The Postgraduate Institute of Agriculture (PGIA) recognizing the importance of postgraduate research actively promotes student enrolment for postgraduate research degrees and even facilitates the publication of their research outcomes in globally recognized high impact scientific journals. PGIA, for this purpose had established a Research Facilitation Fund to support student research projects and another funding facility to promote the dissemination of research findings by participating in international seminars and conferences.

It is mandatory for scientists including postgraduate students during their career to write several important documents. These include documents such as reviews, research proposals, progress reports, posters, thesis/dissertations and journal papers. The conducting research for a postgraduate degree is a time consuming strenuous process taking 3-5 years and finally trains students as professional scientists. The information collected in this process has to be documented and transferred to relevant stakeholders by writing which require specific skills that have to be learnt by repetitive practice, reading and revising. Generally, this type of writing is referred to as scientific writing; sometimes technical writing and the primary audience are other scientists.

Scientific writing documents and communicates ideas logically so that the readers can understand clearly. Therefore, writing scientific information should be clear and precise avoiding unnecessary details. It is a process of organizing and shaping information, any vague and ambiguous statements which confuse the reader are not scientific. All information should be supported by facts based on evidence and not assumptions. Therefore, the writer should have adequate competence in English, the language in which most countries document scientific information. The exposure to scientific writing enables them to choose correct words and write short, precise sentences to clearly state its meaning. The students of non –native English speaking countries like Sri Lanka may find it difficult initially to draft clear scientific documents, however, most universities offer short courses on scientific writing and books written by distinguished authors are also available for self-study. The Boards of Study of the PGIA also offers a course in scientific writing and research proposal preparation and it should receive more prominence considering the importance of this subject.

The fellow scientists need to trust on published results, also the society want to trust science and be sure that scientific claims are true or unbiased attempts to describe the truth.

MAIN STORY

32nd PGIA Annual Congress successfully conducted

The PGIA Annual Congress is a scientific forum for researchers to present, discuss and disseminate their scholarly research findings in Agriculture and allied disciplines to a wider national and international scientific community. The 32nd Annual Congress of the PGIA was held during 19-20 November, 2020 as a virtual conference at the postgraduate Institute of Agriculture University of Peradeniya.

It provided an opportunity for postgraduate students and budding scientists to showcase their research findings to an virtual audience comprised of academics, researchers, PGIA alumni and other stakeholders. In this year, 39 oral and 17 poster presentations were made under 11 scientific sessions: Oral technical sessions were Nutrition & Food Quality, Agronomy & Plant Breeding, Organizational Management & Extension, Economic Efficiency in Agricultural Systems, Functional Properties in Food, Microbiology & Biotechnology, Modeling & Forecasting and Resource Management in Cascade Systems. Poster sessions were on Crop and Soil Science, Resource Management & Extension and Technological Interventions in Food & Agriculture.

Inaugural session was held on 20 November 2020 in the midst of covid pandemic with a very limited number of on-ground participants. H.E. Mr. Denis Chaibi, Ambassador of the Delegation of the European Union to Sri Lanka and Maldives graced the inaugural session as the Chief Guest. Distinguished Professor Ratan Lal, Carbon Management and Sequestration Center, Ohio State University Columbus, USA, delivered the keynote speech on 'Managing Soils for Addressing Global Environmental Challenges'.

Professor John Dixon, University of Queensland, Australia and Professor John W Crawford, University of Glasgow Adam Smith Business School, Glasgow delivered invited speeches. Prof R.S Dharmakeerthi coordinator of the 32nd Annual Congress and Mr. V.G.D.T. De Silva, President of the Postgraduate Student Association (PASA) also address at the inaugural session. Several other dignitaries including Prof. Upul B. Dissanayake, The Vice Chancellor, University of Peradeniya, Prof. D.K.N.G. Pushpakumara, Dean, Faculty of Agriculture, Prof. C.M.B. Dematawewa, Director, PGIA addressed the Inaugural Session of the Congress.

In order to improve the communication skills and effective disseminating scientific findings by budding scientists, four workshops were also held on different topics related to publications and presentations. The Soil Science Society of Sri Lanka also joined with the 32nd Annual Congress with the PGIA and jointly hosted a virtual technical session on 19 November 2020 on "Biochar for improving soil functions. These workshops and technical sessions were well attended by the participants.

Prof. K.L. Wasantha, Faculty of Agriculture, University of Ruhuna delivered the Distinguished Alumnus speech at the closing session.



BEST PRESENTERS AND AWARDEES IN THE TECHNICAL SESSIONS AT THE 32ND ANNUAL CONGRESS 2020

Technical Session	Presenter	Title of the Paper
Oral Presentations		
Nutrition & Food Quality	V.H.H. Nadeeshani	Comparative Analysis of the Nutritional Profiles of Selected Solanum Species Grown in Sri Lanka
Agronomy & Plant Breeding	B. Kiriwaththuduwa	Characterization of Conserved Sugarcane (<i>Saccharum</i> spp.) Germplasm for Parental Selection in Directional Breeding of Eco-nomically Important Traits
Organizational Management & Extension	W.A.M. Fernando	Effect of Emotional Intelligence on Job Satisfaction: A Case Study from a Leading Call Centre in Sri Lanka
Economic Efficiency in Agricultural Systems	M.G.D. Abeysekera	Returns to Factors of Production and Total Factor Productivity in Coconut Plantations in Sri Lanka
Functional Properties in Food	S.K.D. Wijesinghe	Bioactive Properties of Fish Protein Hydrolysates from Amazon Sailfin Catfish (<i>Pterygoplichthys pardalis</i>) from Victoria Reservoir in Sri Lanka
Microbiology & Bio-technology	T.S.P. Jayaweera	Biofilm Forming Ability of Broiler Chicken Meat Associated <i>Salmonella</i> spp. on Food Contact Surfaces
Modeling & Forecasting	A.B. Abeysekera	The Effect of Indian Ocean Dipole Events on the Second Inter-monsoonal Rainfall in the Wet Zone of Sri Lanka
Resource Management in Cascade Systems	M.R.C.P. Wickramasinghe	Modeling Spatial Variability of Runoff Generation in Mahakanumulla Village Tank Cascade System in Sri Lanka Using Soil and Water Assessment Tool
Poster Session		
Crop and Soil Science	W.M.D.M. Wickramasinghe	Effect of Nitrogen Fertilizer, Weeds and Planting Density on Incidence and Severity of Narrow Brown Leaf Spot in Rice Cultivated in Anuradhapura District of Sri Lanka
Resource Management & Extension	A.T. Shanadi	Proposing a Mobile Based Guideline Model of Good Agricultural Practices (GAPs) for Potato Cultivation in Sri Lanka
Technological Interventions in Food & Agriculture	T.D. Ranasinghe	Evaluation of Some Potential Protocols to Extract DNA from Paddy Soil

AWARDS

A.W.R. Joachim Memorial Award

This award is presented to the student who earned the highest GPA in each academic year. **R.A.G.W. Rathnayaka of the Board of Study in Food Science & Technology** received this award for the academic year 2019.

Award from Alumni Association

Overall best presentation - A.B. Abeysekera

1st runner up - V.H.H. Nadeeshani

2nd runner up - M.R.C.P. Wickramasinghe



PGIA BEGINS QUALITY ASSUARANCE PROCESS

Internal Quality Assurance Unit (IQAU) of the University of Peradeniya was established in 2016 according to the guidelines issued by the UGC based on the UGC Circular 4/2015. UGC has also established a Standing Committee on Quality Assurance to take action on all quality related activities of the universities Accordingly, Quality Assurance Cells (QACs) have been established in all faculties and PG institutes to liaise with the IQAU of the university and the QA Council of Sri Lanka on the implementation of the QA framework.

In the current context, global higher education is both expensive and highly competitive as all countries aspire to develop knowledge based economies by planned higher level training of human resources in specific areas of interest. As a result considerable interest has arisen to demonstrate quality of all programs offered by both public and private higher educational institutions. This particularly true of the developing countries like Sri Lanka which produces human resources for their own development initiatives as well as to cater to the needs of developed countries. Therefore, the primary responsibility of all providers of higher education worldwide is to assure the quality of programs they offer and develop a quality culture in higher education. Therefore, establishing and implementing a comprehensive QA process within the universities and conducting regular external reviews will be very important for Sri Lankan universities.

Quality assurance is a planned systematic review process of higher educational institutions to ensure acceptable standards of education, scholarship with continuous infrastructure enhancement to achieve best results. Therefore, it is essential that all employees of an institution are held responsible for maintaining expected quality on all aspects of higher education. This is achieved through an internal quality assurance process; hence internal quality assurance is the cornerstone for quality assurance in higher education. In regard to quality assurance several important areas could be identified which begins with the policy and procedures in higher education, monitoring and periodic review of all programs offered, quality assessment of students and teaching staff, information systems, society expectations of graduates and public information.

The inaugural meeting of the Quality Assurance Cell of the Postgraduate Institute of Agriculture (PGIA-QAC) was held on 22 July with the participation of 20 newly appointed members representing a cross-section of the Faculty/PGIA. The membership includes the Director, PGIA as Chairman, Dean of the Faculty of Agriculture, Dy. Registrar, representative of the 11 Boards of Study, Snr. Assistant Bursar, Systems Analyst, Snr. Assistant Librarian, President and Secretary, Students' Association, and Course Coordinator. Prof. R.W.Pallegama, Director, Internal Quality Assurance Unit (IQUA) of the University of Peradeniya was the special invitee of this meeting and presented the History and Road map of the institutional reviews of Sri Lankan universities.

Prof. Pallegama in his address mentioned that QA process will be implemented by the UGC and it is planned to review every PG institute by the Center for Quality Assurance (CEA) of the UGC during 2022. He further stated that program manuals are being prepared and implementation will take place from October-December 2021. Prof. Pallegama also mentioned that the most important activity for the PG institutes will be the preparation of the Self Evaluation Review Report (SER) which has to be finalized by 31 March 2022. Further, documentation of related aspects such as strategic plans, availability of human and physical resources, course module design and development, teaching and learning process, learning environment and student support, student assessment and awards and use of innovative healthy practices were also discussed. It was noted that these reviews will be conducted by independent external reviewers appointed by the UGC and it will be based on the SER and other relevant information which has to be prepared by the respective institutes.

“QUALITY IS NOT AN ACCIDENT, IT IS ALWAYS THE RESULT OF INTELLIGENT EFFORT”



Academic Year 2020 - Closing date extended

Applications for the new academic year were called in March 2020. Due to Prevailed situation in the country and considering the requests made by the students closing date for applications has been extended until 30th July 2020.

Currently the institute offers 31 M.Sc. Degree programmes (by course work as well as by course work & research) MBA Degree (by course work and coursework & research) and research degrees (M/Phil., Ph.D.) and under 11 Boards of Study.

Applications are open for Colombo Center for the Academic year 2020

Applications for the Colombo Center located at the Sir John Kothalawala Defense University, Rathmalana has also been extended.

The Center offer degree programmes from the Board of Study Food Science & Technology and Bio Statistics .

STAFF / STUDENT NEWS

Towards Sustainable Operation and Management of Centralized Composting in Sri Lanka

Dr Anurudda Karunarathna with Thilini Rajapaksha, Yasas Galagedara, Nadeesha Vidanage and Shenal Kaldera (Postgraduate students of Board of Study in Agricultural Engineering) in collaboration with Institute for Global Environment Strategies (IGES), Japan and United Nations Environment Program (UNEP) published an international best practices case study on successful implementation of centralized large scale municipal composting facilities in Sri Lanka.

This report is to share the lessons learned from successful case studies that help to raise the level of knowledge on composting as well as planning and decision-making skills for effective implementation of large-scale composting facilities of local authorities in Sri Lanka and in other countries. The publication is freely available online (<https://www.iges.or.jp/en/pub/towards-sustainable-operation-and-management-centralized-composting-sri-lanka/en>)



November 2020

This report presents three case studies in the context of centralised large-scale composting facilities in Sri Lanka in order to reveal the factors and approaches that led to positive results under different type of operational modality, i.e., 1) single municipal operation, 2) provincial operation, and 3) joint consortium operation (operated by two municipalities). This report is expected to enhance the capacity of local authorities in Sri Lanka and other countries, and also raise the level of knowledge on composting as well as planning and decision-making skills for successful implementation of composting facilities.

The case studies in this report identified the following critical factors for replication:

- ❖ There is no single solution for all cities. Composting system, technology to be applied, and operational modality should be selected based on the assessment of the capacity of the responsible agency and practical negotiation with potential partner(s) who could fill the capacity gaps (e.g. financial and technical insufficiency) in addition to the self-capacity development. Collaborative relationship tends to continue when win-win situation among the partners maintains.
- ❖ Implementation of source segregated waste collection is a prerequisite for successful composting operation. To do so, improvement of collection service, enforcement of rules and regulations, and continuous awareness raising and education are essential.
- ❖ Private operator and provincial authority is relatively better at efficient operation of a large scale composting facility with qualified staff, equipment, and enough finance, which could bring improvement of compost quality, innovation of value-added product, and proactive marketing, than operation by small individual local authority. However, involving multiple actors in the management is not always easy because they intervene in the decision-making process.
- ❖ Therefore, responsibilities among key actors should be clearly identified and officially agreed or approved by relevant authorities when the composting system is managed by multiple actors.
- ❖ For the successful operation of the composting systems, at least, the operational cost should be covered by the direct income including compost sales and tipping fees. In addition, a reduced MSW management cost resulting from diverting the biodegradable waste from landfill/dumpsite to compost and other co-benefits such as mitigation of adverse impact on health, environment and climate can be calculated and subsidised to cover the loss.

This Case Study is published in November 2020 by the IGES Centre Collaborating with UNEP on Environmental Technologies (CCET) in partnership with the University of Peradeniya as a part of its support programme to the Ministry of Environment and Wildlife Resources (MELWR) and the Negombo Municipal Council (NMC), Sri Lanka in developing waste management strategies and action plans.



IOBSL Felicitates Former PGIA Director Prof. Senanayake

The Institute of Biology of Sri Lanka (IOBSL), the premier professional body of biologists recognizing the contribution to agricultural/biological sciences felicitated Prof. Y.D.A. Senanayake, *Emeritus* Professor, Faculty of Agriculture, University of Peradeniya, and former Director, PGIA at its 39th Annual General Meeting held on 27th September 2019.



Prof Senanayake graduated with B.Sc. in Agriculture with a First Class in 1956. In 1957, he won a Fullbright scholarship to read for a Master's degree in plant breeding at the Louisiana State University, USA. Subsequently, he followed a training program in Horticulture at the Texas A&M University, USA. In 1963, Prof. Senanayake proceeded to University of California Davis, USA and obtained a PhD in Plant Genetics in 1966. Then he joined the Rubber Research Institute of Sri Lanka as geneticist. In 1969, he joined the Faculty of Agriculture and Veterinary Sciences, Peradeniya Campus of the University of Ceylon. He served as the Dean of the faculty during 1979 - 1981. The cadre Professorship of Crop Science was awarded to Prof. Senanayake in 1973.

Prof. Senanayake pioneered in developing a practically oriented curriculum in agriculture including the establishment of the 1st year farm practice course at Maha Ilupallama Sub campus. This was followed by a three month training on plantation agriculture plus a practical training in tea,/rubber plantations during the final year of the agriculture degree programme. Prof.Senanayake was closely associated with the establishment of the PGIA in 1975 and served as the first Chairman of the B/S in Crop Science. He introduced the Annual Congress of the PGIA in 1983 which is now an international scientific forum for postgraduate research. He was appointed as Director/ PGIA in 1986 and served as the longest serving Director until his retirement in 1997.

Prof. Senanayake published many scientific documents and served as member of several national research committees of CRI, TRI, HARTI, NSF and SLCARP.

CONGRATULATIONS.

New Staff Appoinments

- Following candidates assumed duties as Temporary Lectures of the PGIA in October 2020



Dr. Harshani Siriwardana graduated in Botany (special) and Ph.D from the Faculty of Science, University of Kelaniya.



Ms. Suyama Mihindukulasooriya obtained B.Sc. in Agriculture from the Faculty of Agriculture, Rajarata University and M.Sc in Advanced Convergence Technology and Science from Jeju National University, South Korea.



Mr. Thilina Hettiarachchi obtained B.Sc. in Agricultural Technology and Management from the Faculty of Agriculture, University of Peradeniya.



Ms. Niluka Kuruppuarachchi, obtained B.Sc. in Agricultural Technology and Management from the Faculty of Agriculture, University of Peradeniya.

Hemalatha Passed Away

Ms. R.G. Hemalatha, who joined the PGIA on April 01, 2009 as a Labourer (Gr.III) has passed away on December 20, 2020 in a tragic accident at the age of 55. The services rendered by her were commendable.

A religious activity has been organized at the University Temple in memory of her demise.

May she attain Nibbana!



RESEARCH BRIEFS



S. Selvakanthan
Ph.D.

B/S in Crop Science
Senior Supervisor
Prof. J.P. Eeswara

MICROPROPAGATION AND PRODUCTION OF AGARWOOD FRAGRANCE COMPOUNDS BY PLANT CELL CULTURES OF *Gyrinops walla*

Gyrinops walla Gaertn, an endemic species of Sri Lanka, is one of the tremendous source of world's most expensive agarwood. The present study aimed at developing an efficient *in vitro* rapid multiplication technique and production of fragrance compounds through plant cell and tissue culture technique. Influence of culture media composition was investigated on rapid multiplication, callus proliferation and product synthesis. Finger prints of calli, elicited calli, micropropagated plantlets and agarwood were developed and marker compounds were identified with the assistance of TLC and GC-MS. MS media with 1.0 mg/L BAP was the best for establishment and regenerated buds could be further multiplied and elongated by transferring to MS medium supplemented with 1.0 mg/L BAP and 0.1 mg/L IBA. Highest percentage of shoots were

rooted in the *ex vitro* condition, when the shoots were dipped in 1000 ppm of IBA for 30 minutes and plantlets successfully survived during acclimatization. MS medium with half NH_4NO_3 level with the supplementation of 1.0 mg/L BAP and 0.1 mg/L 2, 4-D was found to be the most efficient medium for callus culture. Agarospirol, aristolene and eicosane were the aromatic constituents found in agarwood. α -caryophyllene was one of the key fragrance compounds identified in calli of *G. walla*. The present study established a protocol for rapid multiplication and also paves the way for the production of resinous fragrance compounds through cell culture techniques of *G. walla*.



T.S.P. Jayaweera
Ph.D.

B/S in Animal Science
Senior Supervisor
Prof. H.W. Cyril

ISOLATION, IDENTIFICATION AND CHARACTERIZATION OF *Salmonella* ISOLATED FROM FRESH BROILER CHICKEN MEAT IN SRI LANKA

The study was conducted with the main objective of isolation, identification and molecular characterization of *Salmonella* spp. from fresh broiler chicken meat in Sri Lanka. It also assessed the antibiotic sensitivity and the presence of antibiotic resistant genes, presence of virulence genes and their expression together with characterization of biofilms of *Salmonella* spp. and the effectiveness of sanitizers against biofilm. Additionally, attachment ability of *Salmonella* spp. to broiler chicken skin and the effect of organic acids (acetic, citric and lactic acids) and botanical extracts of nutmeg, mace, cardamom, ginger, garlic, variegated sweet flag and *Aloe vera* on *Salmonella* spp. were studied. Out of 260 broiler chicken meat samples, 8.9% were confirmed as *Salmonella* by PCR and *Salmonella typhimurium* was the predominant serotype followed by *Salmonella enteritidis*. Some genes of pathogenicity islands SPI-1, 2, 3 & 5 were present in *Salmonella* isolates and expression levels of virulence genes were varied among the isolates. Majority of *Salmonella* were sensitive to all the tested antibiotics while some resistant to ampicillin and the expression of antibiotic resistant genes was varied among isolates. Biofilm formation vary with surface material, population density and the serotype whereas the biofilm reduction effect of disinfectants vary with the surface material, concentration and the application time. All biofilm forming isolates exhibited the presence of *adrA* and *gcpA* regulatory genes. Strong biofilm formers possess higher attachment ability to broiler chicken skin. Nutmeg, mace and garlic are having better antimicrobial effect while lactic and acetic acids are better than citric acid in that context. In Sri Lanka, *Salmonella* exist in broiler chicken meat at higher prevalence with high virulence, higher capability of forming biofilms and possibility of developing antibiotic resistance.



RESEARCH BRIEFS CONTD.



K.N. Kannangara
Ph.D.

B/S in Agricultural Biology
Senior Supervisor

Prof. I. P. Wickramasinghe

INTER-SPECIFIC HYBRIDIZATION BETWEEN *Capsicum annuum* L. AND OTHER CAPSICUM SPP. (*Capsicum chinense* Jacq. AND *Capsicum frutescens* L.) FOR INTROGRESSION OF VIRUS RESISTANCE

The genus *Capsicum* commonly known as chilli pepper is a major spice crop and is of cosmopolitan in distribution and the genus comprises five domesticated and more than twenty-five wild species. *Capsicum frutescens* L., commonly known as bird chilli, has been reported as a source of variation for many different traits specially the disease resistance, that can be used to improve common chilli (*Capsicum annuum* L.). The present study describes the development of inter-specific hybrid chilli plants by successful genetic bridge method to incorporate virus resistance into chilli after screening the available germplasm. The inter-specific hybrid chilli plants were developed by making crosses between *C. frutescens* and *C. annuum*. Diverse collection of 115 accessions from three cultivated species of *C. annuum* (28), *C. chinense* Jacq. (63) and *C. frutescens* (24) was screened for CMV and CVMV resistance. Two *C. frutescens* accessions were resistant to both viruses and six *C. chinense* accessions were resistant to CVMV. In the Genetic bridge approach, top and double crosses were made among the three species. The double crosses [(*C. annuum* x *C. chinense*) x (*C. chinense* x *C. frutescens*)] and [(*C. chinense* x *C. annuum*) x (*C. chinense* x *C. frutescens*)] were more successful than the top crosses when considering the combining of *C. frutescens* traits into *C. annuum* and development of resistance to CMV and CVMV. Findings of the present study revealed that performances of double crosses in terms of pod setting and seed germination percentage were better than the top crosses due to reduction of incompatibility between *C. annuum* and *C. frutescens* by the bridging parent.



N. Gamagedara
M.Phil.

B/S in Food Science
Senior Supervisor

Dr. B.E.P. Mendis

EFFECTIVENESS OF MOTHERS' SUPPORT GROUP INTERVENTION IN CHILDHOOD NUTRITION IMPROVEMENT IN THE DISTRICT OF MONARAGALA

Effective, large-scale and nutrition-sensitive interventions are required to accelerate progress in nutrition promotion among under-five children. A descriptive cross sectional study and a qualitative study were conducted to determine effectiveness of Mothers' Support Group (MSG) intervention in nutrition and growth promotion of under-five children. Sample of 1,103 children; 559 from 'MSG' and 544 from 'non-MSG' were selected using systematic random sampling method. Weight and height of children were measured using appropriate instruments. Information on care practices and selected behaviors were collected by an interviewer administered questionnaire. Key informant interviews and focus group discussions were conducted among middle level health managers and implementers and members of MSGs respectively. Effective coverage of target population was 2.7% while it was not uniformly implemented in community. Significant difference in prevalence of underweight, stunting and wasting was not observed among under-five children between intervention and non-intervention. Adherence to key components of intervention was not satisfactory while activities were carried out to a lesser extent and quality of delivered components was poor. Acceptance of this intervention by target population was also not satisfactory. Low implementation fidelity with low effective coverage of this intervention resulted no substantial improvement in expected care practices and selected behaviours. Therefore, it is recommended to revisit MSG intervention as it was not successful enough to have a tangible impact on childhood nutrition.



RESEARCH BRIEFS CONTD.



I.W.M.I.W.T.K. Illangakoon

Ph.D.

B/S in Crop Science

Senior Supervisor

Prof. B. Marambe

and α -amylase activity by 60% than non-primed seeds, but was not superior to pre-soaking in enhancing crop establishment. The seed rate recommended for wet-DSR (100 kg ha⁻¹) and maintaining water height at 2.5 cm up to 7-10 days after sowing gave satisfactory crop establishment and 48% weed control efficiency. Since AG-tolerance is highly varied with G x E interaction, stable rice varieties and more effective seed treatments to enhance germination and seedling growth when established under inundated conditions are pre-requisite to popularize flooded-DSR in Sri Lanka.

EXPLOITING ANAEROBIC GERMINATION TOLERANCE OF RICE (*Oryza sativa* L.) AS AN OPTION FOR SUPPRESSING WEEDS AND ENHANCING GROWTH AND YIELD OF DIRECT SEEDED RICE

Cultivating rice varieties with enhanced genotypic-tolerance to germinate and develop seedlings under flooded condition (anaerobic germination or AG tolerance) with an associated management package (flooded-DSR) could be effective to suppress weeds in an environmentally-friendly manner and to overcome other constraints associated in wet-direct seeded rice (DSR). Therefore, research was conducted at the International Rice Research Institute, Philippines and the Rice Research and Development Institute in Batalagoda, Sri Lanka to develop an appropriate technological package for flooded-DSR. New improved rice varieties, Bg 300 followed by At 308, Bg 310, Bw 351, Bw 367, Bg 366, Bg 380 and Bg 379-2 had moderate AG-tolerance ability. Seeds soaked in water for 24 h and incubated for 48 h germinate well under inundated condition.

Hydro-priming of seeds enhanced the survival by 50%, soluble sugar content by 33%



C.V. Francilen

M.Phil.

B/S in Animal Science

Senior Supervisor

Dr. U.G. De A. Edirisinghe

Index (D), Shannon-Wiener diversity index (H') and Evenness index (J') were estimated. A total of seven species belonging to the order Aspidochirotida and two other each representing families Holothuriidae and Stichopodidae were identified. They were *Holoturia atra*, *H. leucospilota*, *Stichopus horrens*, *S. herrmanni*, *Bohadschia marmorata*, *H. spinifera* and *S. naso*. Present study on length-weight relationship showed that exponent coefficient (b) values differed significantly from the hypothetical value of 3 and exhibited negative allometric growth. *B. marmorata*, *H. spinifera* and *S. naso* were the commercially captured holothurian species and *B. marmorata* was the dominant species in the catch in coastal waters of North-East region, Sri Lanka.

DIVERSITY OF HOLOTHURIANS (ECHINODERMATA: HOLOTHUROIDEA) IN NORTH- EAST COASTAL AREAS OF SRI LANKA AND DETERMINATION OF GROWTH PARAMETERS OF ABUNDANT SPECIES

Holothurians are fascinating and commercially valuable species belonging to class Holothuroidea. Present study was conducted with the aim of documenting the species composition and their diversity, investigate the morphological indexes by performing fisheries dependent and fisheries independent surveys for commercially captured holothurian species in North-East coastal region of Sri Lanka. This research was carried out from January 2015 to December 2016 at five study sites viz., Viyaparimuli, Munnai, Challai, Puthumattalan and Peppearippiddy. Holothurians were collected within random transect areas of 2 m width and 100 m length. Holothurians were brought to the laboratory and identified up to species level based on the morphological characters and through spicule preparation. Standard ecological parameters such as Simpson's



RESEARCH BRIEFS CONTD.



R. Rahularaj
M.Phil.
B/S in Animal Science
Senior Supervisor
Dr. R.M.C. Deshapriya

IDENTIFICATION OF PREVALENCE, PATHOGENS, AND RISK FACTORS AND DEVELOPMENT OF AN ENZYME BASED EARLY DETECTION METHOD FOR SUB-CLINICAL MASTITIS IN CROSSBRED COWS OF SRI LANKA

An intra-mammary infection, mastitis, is the economically most important disease in lactating cows. Early detection of mastitis, especially sub-clinical mastitis (SCM) is an essential component in a well-managed dairy. A study was carried out to investigate the prevalence of SCM, isolate the pathogens and identify risk factors and to develop an early detection method based on enzyme found in milk. Further, assessment were carried to find out the correlation among California mastitis test score, somatic cell counts and enzyme activity and to identify the relationship of SCM and enzyme activity in milk. The prevalence of SCM in crossbred cows in Kurunegala district, Eastern Province and Kandy district of Sri Lanka were 49%, 46% and 43% respectively and age, parity, milk yield and breed of the cow being potential risk factors. SCM affected the reproductive performance of dairy cows by increasing the calving interval. An ordinary farmer is unable to identify the SCM until a drastic reduction in milk production has occurred due to the mammary tissue damage. In this study it was found that the assay of N-acetyl- β -D-glucosaminidase activity in SCM positive milk is a potential enzyme to be used for early detection of SCM crossbred cows of Sri Lanka. (19%) and Kays back reef (18%). Bray- Curtis cluster analysis based on benthic categories recorded in all the study sites categorised into two major clusters with 60% similarity.



N.C.Y. Jayasundara
M.Phil.
B/S in Agricultural Engineering
Senior Supervisor
Prof. L.W. Galagedara

ASSESSMENT OF AGRONOMIC FEASIBILITY OF *Jatropha* UNDER MID COUNTRY WET ZONE CONDITIONS IN SRI LANKA

There are numerous *Jatropha curcas* L. accessions have been found within different agro-ecological zones in Sri Lanka. These accessions are having different characters in flowering, fruiting and total yielding in their territories over decades, with a pool of germplasm. Among 72 initially planted *J. curcas* L. accessions at Meewathura research station, 32 survived accessions were further assessed to select the most promising and the best performing accessions under the Mid Country Wet Zone conditions (WM3) of Sri Lanka. Hierarchical Clustering using Principal Component Analysis concluded that there were 3 clusters in treatment 1 (fertilized), while there were 5 clusters of *Jatropha curcas* L. accessions in treatment 2 (Unfertilized), exhibiting different morphological plant growth characteristics. Though *J. curcas* L. is a rain fed crop, it requires specific amount of soil moisture content in the early stage of crop growth. The study carried out to evaluate crop water relationship in early five months of immature *J. curcas* L. plants by using lysimeter analysis with water balance method under the conditions of WM3 of Sri Lanka. This study concluded that, there were higher water losses in lysimeter pots having plants while the control (pot without a plant) show a slightly low water depletion pattern until 100 days after planting.



A. M. P. D. Abeykoon
M.Phil.
B/S in Bio Statistics
Senior Supervisor
Dr. B. L. Pieris

PREDIAGNOSIS OF THALASSEMIA PATIENTS, CARRIERS AND TYPES OF THALASSEMIA USING NEURAL NETWORKS

Thalassemia causes a reduction in the life span of red blood cells. Since Thalassemia is a genetic disease, it can be controlled by early identification of Thalassemia trait individuals by screening. So, early diagnosis of Thalassemia has become a very important fact for preventing Thalassemia. In Sri Lanka, the full blood count of individuals is taken to screen medically for Thalassemia. If a person is suspected of being a trait, then the person is referred for further diagnostic tests. In this research, a system has been developed which can identify Thalassemia traits and patients with an accuracy of 99.7% using only from their full blood count with an Artificial Neural Network (ANN). The ANN is a computing system with highly interconnected nodes which are organized in layers for decision making process. A sample of individuals who were medically diagnosed as normal individuals, trait individuals and Thalassemia patients is used to design neural networks. Use of the ANN for the classification revealed that ANN gave better performance compared to the other established classification methods such as decision trees for this particular problem. This method would help to develop more efficient thalassemia classification method using full blood count of individuals.





R. Sudarshani
M.Phil.

B/S in Agriculture Engineering
Senior Supervisor
Dr. S. Pathmarajah

using Deduru Oya irrigation channel, establishment of small-scale industries, groundwater development, cultivation of other field crops, adoption of micro irrigation systems, crop diversification, rain water harvesting, improving credit facilities and effective agricultural extension and education are the strategies identified to improve the livelihood status. Introduction of cash grant instead of fertilizer subsidy was seen as a threat to social capital as it will weaken the cohesiveness among Farmer Organization (FO) members.

APPLICATION OF SUSTAINABLE LIVELIHOOD FRAMEWORK FOR WATER INTERVENTIONS TO IMPROVE LIVELIHOOD STATUS OF THE PADDY FARMERS IN BAYAWA TANK CASCADE IN SRI LANKA

This study was conducted in six Grama Niladari divisions in the Bayawa Tank Cascade area in the Kurunegala District of Sri Lanka to identify and prioritise the water intervention need, and assess the present availability and demand for assets for the identified water interventions. Sustainable Livelihood Framework was used in the analysis. Indicators were developed to assess the existing levels of capitals. Farmers are engaged in home gardens with perennial crop cultivation (100%), brick making (2.1%) concrete pot and block making (0.6%), flower nurseries (0.8%), animal husbandry (3.0%), paddy milling after boiling (0.2%) and coir dust industry (0.2%) as water related livelihood strategies other than farming. The study identified that financial and physical capitals can be limiting even under water available situations. Rehabilitation of tanks, augmenting tanks



W.M.S. Weerawardena
M.Phil.

B/S in Agriculture Engineering
Senior Supervisor
Prof. K.S.P. Amarantunga

olated moisture content and real time moisture content of the withered leaves. According to the calculated error, the software programme identifies required mass flowrate of air. The measured energy consumption was in the range of 36 to 39 kWh with control system. The specific electricity consumption was 0.17 to 0.18 kWh/kg of made tea with the control system and it was 0.27 to 0.35 kWh/kg of made tea without control system. Therefore, about 39% electrical energy can be saved with the developed controlled system.

DESIGN AND IMPLEMENTATION OF MATHEMATICALLY CONTROLLED TROUGH WITHERING TO OPTIMIZE ELECTRICAL ENERGY CONSUMPTION IN WITHERING OF TEA LEAVES

A control system was developed to optimize the electrical energy consumption in tea withering. The electrical energy saving was achieved by controlling the speed of the fan of the withering trough through a variable speed drive. The fan speed was determined based on the theoretical mass flow rate requirement of air, calculated by the developed mathematical model for withering process. Also, this model was used to calculate the thermodynamic properties of withering air and the moisture content of tea leaves in real time. A single board computer, Raspberry Pi 3 model B was used to run the mathematical model and the software programme for controlling the necessary withering parameters. The software programme calculates both real time and predicted moisture content for extrapolated time. The linear standard curve was used to calculate the difference of extrapolated moisture content and real time moisture content of the withered leaves.



G. Senaratne
M.Phil.

B/S in Plant Protection
Senior Supervisor
Dr. G.G. Jayasinghe

recorded and cost benefit ratios were calculated. Damage incidences of wood boring moth is significantly low in treatments with earthing-up. Rough bark disease was significantly low where Bordeaux mixture was applied. Weed biomass and soil invertebrate abundance was significantly high in the treatments with slash weeding. These agronomic practices help to maintain better crop and soil health. A positive relationship was observed in annual profit with number of agronomic practices.

VARIATION OF POPULATIONS OF ECONOMICALLY IMPORTANT PESTS AND YIELD UNDER DIFFERENT CROP MANAGEMENT PRACTICES IN CINNAMON

Cinnamon (*Cinnamomum zeylanicum* Blume) is a hardy plant but still cultivations are vulnerable to some pests and diseases which cause considerable yield losses. Since the annual production is very low, it is important to introduce proper crop management practices to maximize the productivity of existing cultivations in Sri Lanka. The experiment was established in existing fields at two locations. Recommendations of Department of Export Agriculture were considered as control treatment. Selective pruning, slash weeding, earthing-up and Bordeaux mixture application were added as additional crop management practices in other four treatments. Occurrence and severity of pest and disease, weed growth was monitored, Soil invertebrate diversity and abundance were recorded. Soil moisture, soil pH, bulk density and soil organic matter were measured. Dry bark yield in four harvesting cycles were

RESEARCH BRIEFS CONTD.



E.M.A.C. Ekanayake
M.Phil.

B/S in Agriculture Engineering
Senior Supervisor
Prof. K.S.P. Amaratunga

DESIGN AND DEVELOPMENT OF A HEAT PUMP BASED MATERIAL MOISTURE CONTROL SYSTEM FOR INDUSTRIAL APPLICATIONS

A heat pump dehumidifying (HPD) system was developed to control the relative humidity to regulate the moisture content of medicinal plants. The system was used in removing moisture from the plant materials and to adjust the moisture content of gallnut (Masakka) before milling for the reduction of fines generated in milling. The specific moisture removal ratio (SMER) of Gotukola, Endaru roots and Palol roots were calculated and the tested samples showed a satisfactory level of drying. Also, the moisture adsorption characteristics of gallnut showed accurate results with Weibull model. Subsequently, the physical properties of gallnut and the effect of moisture content on those properties were also studied. The results indicated that the moisture content of gallnuts has no significant effect on cracking force and energy absorption for cracking at moisture contents between 2.35 % (d.b.) and 15.37% (d.b.). Afterward, the effect of moisture content on the particle size distribution of the pulverized gallnut was studied and Gates-Gaudin-Schuhmann model produces a good fit. Moisture content directly affects the particle size distribution, and uniformity of particle size distribution improved by increasing the moisture content of pulverized gallnuts. Finally, it can be concluded that the established heat-pump-based moisture control system could be effectively used in the moisture-controlling of medicinal plants for further processing at industrial scale.



R.P.U.I. Amarawansa
M.Phil.

B/S in Soil Science
Senior Supervisor
Dr. B.L.W.K. Balasooriya

DEVELOPMENT OF CYANOBACTERIA BASED INOCULANT TO FORMULATE BIOFERTILIZER FOR PADDY CULTIVATION IN SRI LANKA

Cyanobacteria have the ability to fix atmospheric N_2 to plant available forms thus useful in producing biofertilizers especially for rice cultivation. In this study, cyanobacteria were isolated from surface soil samples collected from 23 selected paddy growing areas in IL1, IM3, DL1b and DL1c agro ecological regions falling under Kurunegala, Matale, Anuradhapura and Polonnaruwa districts and eighteen cyanobacteria were tentatively identified based on their morphological characteristics. A pure culture collection of 10 cyanobacteria were established and molecular analysis confirmed their identity. Significant N accumulation in BG 110 medium by all isolated cyanobacteria indicated their potential N_2 fixing ability. PCR with specific primers for microcystine production confirmed that none of the ten cyanobacterial pure cultures are genetically capable of producing microcystins. Pair-wise cross-streak test indicated 11% - 100% compatibility among these cyanobacteria. According to higher prevalence, N_2 fixation ability, biomass growth and compatibility, two cyanobacterial inoculants were formulated. Adaptability of these inoculants were studied in five different paddy soils in pot experiment 1 and, inoculant 2 with 50% Urea showed better performance in range of soils. In pot experiment 2 under the different irrigation systems, cyanobacterial inoculant was more adaptive under frequent irrigation than less frequent irrigation. Field trials conducted in two consecutive seasons, confirmed that 50% Urea could be cut down by using the cyanobacteria inoculants. Further studies are required to formulate the inoculant with carrier material as a N biofertilizer for paddy cultivation in Sri Lanka.



H.M.S.I. Senevirathna
M.Phil.

B/S in Agricultural Biology
Senior Supervisor
Dr. S.K. Wasala

TAGGING GENES ASSOCIATED WITH YELLOW VEIN MOSAIC VIRUS (YVMV) RESISTANCE IN WILD OKRA SPECIES *Abelmoschus angulosus*

Okra yellow vein mosaic virus (OYVMV) disease is one of the devastating diseases in okra cultivation. None of the recommended varieties in Sri Lanka are resistance to this disease. Development of resistant varieties is the safest and long-lasting method to overcome this problem. Wild relatives of cultivated species are one of the germplasm which are highly adaptable to most of the biotic and abiotic stresses. Transfer of these traits into cultivated species is possible with the application of molecular techniques. One of the wild relative of okra *A. angulosus* is identified as OYVMV resistant species. Therefore present study was conducted to investigate mode of resistance in *A. angulosus*, tag the responsible genes and develop molecular marker to identify virus resistant okra varieties. Based on the virus characterized data, this study identified that there is one OYVMV strain present in studied locations. Genetic inheritance study concluded that two recessive genes involved in virus resistance in wild okra species *A. angulosus*. Three molecular (RAPD) markers were identified which linked with virus resistance in *A. angulosus*. Based on one of the distinct RAPD primer, two SCAR markers were developed and these markers can be used for marker aided selection.



RESEARCH BRIEFS CONTD.



S.D. Samaradiwakara
M.Phil.
B/S in Crop Science
Senior Supervisor
Prof. J.P. Eeswara

PROXIMATE COMPOSITION, TOTAL PHENOLIC CONTENT, ANTIOXIDANT EFFICACY AND BIO-ACCESSIBILITY OF SELECTED UNDER UTILIZED FRUIT SPECIES OF SRI LANKA

Acid lime (*Citrus aurantifolia* Swingle) is a high value fruit crop grown in Sri Lanka. The price per kilogram of fresh lime dramatically fluctuates throughout the year as its marked seasonality of fruiting behavior. In the present investigation fruit phenology of lime was evaluated and optimum harvest maturity was identified to obtain the best fruit quality with extended postharvest life. Moreover, maturity indices were defined, colour charts and sizing rings were developed to adopt under field conditions for identification of optimum harvest stage. Furthermore, optimum dose of gibberellic acid (GA3), brassinosteroids (BL) and salicylic acid (SA) as pre-harvest treatments either on hastening or delaying fruit maturity and improving quality and postharvest life was investigated. Phenological phases of cell division and differentiation, cell expansion, fruit maturation and senescence completed 14-28, 70-105, 133-147 and 171-179 days after fruit set (DAFS) respectively. Physiological maturity was attained 147 DAFS and post-harvest life of fruits were 6-9 days under ambient storage. Time taken to attain physiological maturity could be advanced ($p < 0.05$) by foliar application of BRs and SA, and delayed by GA and improved fruit quality attributes and post-harvest life. Pre-harvest treatment of GA with 25.0 and 37.5 mg/L delayed maturity by 1 month and 1.5 month respectively and extended post-harvest life of 12-15 and 15-18 days respectively. Foliar application of 1.5 mg/L BR and 1.0 and 2.0 mM of SA could advance maturity by 2.5, 2.6 and 2.7 months respectively with post-harvest life of 12-15, 9-12 and 9-12 respectively.



K.K.T.N. Ranaweera
M.Phil.
B/S in Animal Science
Senior Supervisor
Mr. M.B.P.K. Mahipala

EFFECT OF DIETARY SUPPLEMENTATION ON PRODUCTION PERFORMANCE OF LACTATING DAIRY COWS FED WITH TOTAL MIXED RATIONS

Poor feed management during early lactation has caused substandard milk production in temperate and tropical crossbred dairy cows in Sri Lanka. Hence, series of experiments were conducted to assess nutritional status in the energy balance during the early lactating period of temperate and tropical crossbred dairy cows and suggest an appropriate supplementation strategy to overcome any identified energy imbalance. The research study followed a preliminary investigation and based on its results, 03 feeding trials were conducted to assess the effect of energy dense supplement on the production performance of early lactating dairy cows. Preliminary investigation revealed that both tropical and temperate crossbred dairy cows at post-partum, transition stage suffer from negative energy balance (NEB) under current feeding system used in the respective regions. Hence, adaptation of an energy dense feeding programs was suggested and to increase the energy density of the ration, rumen protected fat was utilized. Research project concluded that 200, 250 and 350 g/cow/day of rumen protected fat could be recommended as an energy supplement to tropical crossbred cows, temperate crossbred cows and high yielding temperate crossbred cows, respectively. Recommended supplementation of rumen protected fat during early lactation period with total mixed rations feeding assures early recovery from NEB, increase milk yield and profits from temperate and tropical crossbred dairy cows in Sri Lanka.

RESEARCH BRIEFS CONTD.



G.G.K.P.S. Kumari
M. Phil

B/S in Agricultural Engineering
Senior Supervisor
Prof. D A N Dharmasena

AERATED SOAKING IN COLD SOAKING OF PADDY AND TESTING OF A BIO-TOWER FOR TREATING LOW STRENGTH EFFLUENT

Parboiling of paddy is a hydrothermal treatment which involves soaking, steaming and drying prior to milling. Short-grain (BG 358/Samba) and Medium-grain (BG 300/Nadu) new and old paddy were used for this study and 100 mm PVC pipes of 1.3 m in height were used as the soaking tanks. There were three soaking treatments; submerged stagnant, submerged aerated recirculation and submerged unaerated recirculation. Water recirculation was done using 12V DC pumps and a shower was used for aeration. First 12 hours of submerged soaking was common for all. Thereafter, intermittent water recirculation was done for two units. The quality of soaking water (Dissolved Oxygen (DO), pH, Electrical Conductivity (EC), Total Solid (TS) and Total Dissolved Solid (TDS), BOD and COD) and rice quality were measured. The aeration slightly increases the pH of the soaking water and that increases the soaking rate of grains while reducing the soaking time required for parboiling process. In addition, submerged aeration reduced the effluent strength to about one half. The aerated soaking reduces the effluent discharge to only once for soaking (1.3 m³/t (paddy)) and BOD loading rate to half (1.7 kg/t (paddy)) with respect to conventional cold water soaking. The cost of wastewater treatment is also about SLR 0.20/kg (rice) which is ten cents less than conventional soaking. The germination of paddy is not an issue when aeration is stopped for last three hours of soaking at commercial level. The milling yield and rice quality slightly improved under aerated soaking at the industrial level and the consumer preference for cooked rice was also better than conventional soaking.



K.M.G. Sandareka
M.Phil.

B/S in Bio-Statistics
Senior Supervisor
Dr. B. L. Peiris

PARAMETER ESTIMATION AND ASSESSMENT OF MODEL FIT FROM HIERARCHICAL POISSON MODEL WITH TWO DIFFERENT COMPETING DISTRIBUTIONS BY MARGINAL MAXIMUM LIKELIHOOD METHOD

The Poisson hierarchical models assume that the distribution of the parameters of the Poisson distribution follows distributions such as Beta and Gamma. The method of maximum likelihood estimation was proposed for estimating the parameters of the Poisson-Gamma and the Poisson-Beta hierarchical models. The Newton-Raphson algorithm with the crude monte carlo method was used to compute the maximum likelihood estimates of the parameters of the Gamma and the Beta distributions. The accuracy of estimated parameters from the hierarchical models was assessed by investigating the recovery of parameters from random samples generated from the hierarchical models with known parameters. The prediction errors were 4.0% and 4.5% for the parameters α and β for the Poisson-Gamma model and 0.01% and 2.44% for the parameters α and β for the Poisson-Beta model. Assuming the White leaf disease incidence of sugarcane data follows a Poisson distribution with the parameter λ , the estimates of λ were 0.38 and 0.56 the Poisson-Gamma and the Poisson-Beta hierarchical models, respectively. The data well fit to the Poisson-Gamma model however; the data were not well fit to the Poisson-Beta model. Therefore, the Poisson-Gamma hierarchical model can be used to make further inferences of white leaf disease incidence of sugarcane for the specific field.



CONFERENCES, SEMINARS AND TRAINING WORKSHOPS

Pre-Congress workshop on Writing a quality research paper: Tips and Tricks

The workshop was held on 31st July and 1st and 7th August 2020. It was organized by the 32nd Congress organizing committee of the PGIA and held online with 33 participants including PGIA students, academics and researchers.

Workshop covered the areas of Do's and Don'ts in Scientific Writing, Prewriting -Literature search, Prewriting - Mendeley Desktop, Organizing literature-options available , Organize and present analyzed data-tables, figures, Academic writing, Paraphrasing vs Plagiarism , Where to start- results , What is next – methodology , a convincing introduction, Discussion and conclusions , Abstracting Science – write the abstracts ,and selecting an attractive title for the manuscript.

Last day of the workshop was mainly a practical session for the participants to discuss their problems with the allocated resource persons according to their research paper/ abstract.



Resource person of the workshop were Prof. B. Marambe, Prof. J. K. Vidanarachchi, Prof. G.L.L.P. Silva, Prof. J. Weerahewa, Prof. L.D.B. Suriyagoda, Dr. A.U. Bandaranayake, Dr. C.K. Beneragama, Prof. P.C.G. Bandaranayake, Dr. S.M.C. Himali, Dr. J. Mohotti and Dr. W. Dandeniya. Programme evaluation showed that the participants were highly satisfied with the overall programme and they even suggested to conduct more programmes in the future.

Pre-Congress workshop on “How to Become a Great Peer Reviewer”

The workshop on “ How to Become a Great Peer Reviewer” was Organized by the 32nd congress organizing committee of the PGIA targeting anyone who wants to be a successful reviewer of a research article. This workshop was open for academics as well as students and it was held on ground despite of the Covid pandemic situation with 20 participants including academics and researchers. The workshop was held on 22 September 2020 at the Faculty of Agriculture, University of Peradeniya.

Workshop covered the areas of Becoming a reviewer: Why and how? Do's and Don'ts of reviewing, How to write your reviewer report and followed by a practical session .

Resource persons of the workshop were Prof. Allistair Heatherington, University of Bristol, United Kingdom Prof. Janendra De Costa and Prof Buddhi Marambe from the Department of Crop Science, Faculty of Agriculture, University of Peradeniya. For the practical session, Prof. Pradeepa Bandaranayake, Dr. Janaki Mohotti, Dr. Warshi Dandeniya and Dr. S.M.C. Himali participated as resource persons. Dr. Senal Weerasooriya of the B/S in Agricultural Economics coordinated the workshop.

Pre-Congress workshop on “Addressing Reviewers’ Comments on a Manuscript”

The above workshop was organized by the 32nd Congress organizing committee of the PGIA targeting researchers and students. This workshop was held online on 29 September 2020 with the participation of 48 participants including academics and researchers.

Workshop covered the areas of over viewing reviewers’ comments, What to do with blames, Do I need to address all the comments?, Can I agree or disagree?, What are the Dos and Don’ts?, What changes can be done and how?, Letter of response to reviewers, Letter to the managing editor.

Prof. Dong U Ahn, Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, Iowa, USA, Prof. J. De Costa , Senior Professor , Department of Crop Science , Faculty of Agriculture , University of Peradeniya, Dr. Amalka Pinidiyaarachchi , Senior Lecturer , Department of Statistics & Computer Science , Faculty of Science, University of Peradeniya, Dr. Lahiru N. Jayakody, Assistant Professor-Microbiology, School of Biological Sciences, Southern Illinois University, IL, USA served as the main resource persons. Other resource persons were Prof. J.K. Vidanarachchi ,Prof. P.C.G. Bandaranayake, Dr. A.M.C.P.K. Attanayake, Dr. J. Mohotti, Dr. J.M.P.N. Anuradha, Dr. L.N.A.C. Jayawardena, Dr. P. Korale Gedara, Dr. Samantha Disanayaka, Dr. Suranga P. Kodithuwakku, and Dr. Warshi Dandeniya of the teaching Panel of the PGIA.

Dr. S.M.C. Himali of the B/S in Animal Science coordinated the workshop.

Pre-Congress workshop on “Presentation Skills Training: How to Create and Deliver High-Impact Presentations”

A workshop on “ Presentation Skills Training: How to create and deliver high impact presentations” was successfully conducted on 06 and 07 November 2020 as the fourth of a series of pre-congress workshops organized in parallel with the 32nd PGIA Annual Congress. Twenty eight participants including postgraduate students, research officers, executive officers, managers and university academics attended the workshop. Prof. B. Marambe, Prof. J.K. Vidanarachchi, Prof. P.C.G. Bandaranayake, Dr. L.N.A.C. Jayawardena, Dr. C.K. Ben-eragama, Dr. S.M.C. Himali, Dr. W.S. Dandeniya, Dr. S.D.S.Hemachandra, Dr. A.M.C.P.K. Attanayake, Dr. S.A. Weerasooriya and Dr. Anuradha Jayaweera served as resource persons.

Workshop sessions included Communicating science: Do’s and Don’ts, Developing presentations (Knowing your audience, Identifying your goals, Building messages, Outline development), Preparing effective Power-Point slides/ visual aids (Engaging your audience, Voice balancing, Micro expressions, Body language, Other tools), Overcoming nervousness and Handling questions. In each session, training activities included role play, discussions with lead speakers, reading, writing and practical work.

The workshop was conducted online through zoom and google classroom with several interactive sessions and highly acclaimed by the participants. Dr. W.S. Dandeniya coordinated the workshop.



Training for waste collectors during COVID-19 pandemic

කොවිඩ් - 19 වසංගතයෙන් ආරක්ෂා වීම සඳහා පිළිපැදිය යුතු සෞඛ්‍යාරක්ෂිත ක්‍රමවේද:

කසළ කළමනාකරුවන් සඳහා වූ අත් පොත









Dr Anurudda Karunaratna and Thilini Rajapaksha (Board of Study in Agricultural Engineering) as resource persons implemented a program to train and equip waste collectors on safe handling of waste during Covid-19 pandemic. In addition, a complete set of Personal Protective Equipment (PPE) was donated to all trainees enabling implementation of safe waste handling during COVID-19 pandemic.

The program was organized by Janathakshan Guarantee Limited and funded by UNICEF. The training included training of trainers and programme supervisors on existing waste management guidelines issued by Ministry of Environment and WHO. Handbook on COVID-19 Prevention measures distributed among the local authorities. As of January 15th, 2021, the training programs were conducted in Negombo Municipal and Kandy Municipal Councils, Wattagama Urban Council, and Polonnaruwa Municipal Council, Higurakgoda Pradeshiya Sabha, and Welikanda Pradeshiya Sabha. This training program will be continued with collaboration of Janathakshan Guarantee Limited and UNICEF.



Training Programme on Capacity Building of the Leaders of Community Based Water Societies in Badulla & Nuwara Eliya (Three-Programmes)

The First one-day programme of the Training on Capacity Building of the Leaders of Community Based Water Societies in Badulla & Nuwara Eliya was held on the 26th June 2020 at the Opel Hotel, Rikillagaskada, Nuwara Eliya District in collaboration with World Vision Lanka (WVL) and WaSo Project. A total of 102 participants (61 Males and 41 Females) participated in the programme.

The second programme of the Training on Capacity Building of the Leaders of Community Based Water Societies in Badulla & Nuwara Eliya was held on the 11th July 2020. A total of 104 participants (65 Males and 39 Females) participated in the programme. This was the second face to face training program conducted by Cap-Net Lanka after the Covid 19 Pandemic.

The third programme was held on the 18th July 2020 with a total of 100 participants (60 Males and 40 Females). The programme consisted of presentations and discussions on “Community Based Adaptation for Water Resource Management and Conservation”. At the end of the programme, the participants came up with Action Plans for Water Source Conservation as “Our actions to conserve our Natural Water Springs”. The programmes were coordinated by Mr. Dimuthu Daluwatte, World Vision Lanka (WVL) and Dr. S. Pathmarajah (Country Coordinator/Cap-Net Lanka).



Core-Group Meetings of Cap-Net Lanka



The decision-making body of Cap-Net Lanka, the Core-Group met twice in 2020. The first meeting was held on the 24th January 2020 and the second meeting was held on the 15th December 2020 at the Board Room of PGIA. Meetings were held in Hybrid mode via Zoom and in person.



In the first meeting, Dr. S. Pathmarajah was re-appointed as the Country Coordinator/Cap-Net Lanka for another three years starting from 01 January 2020.

Master of Science (M.Sc.) - 2020 (JULY TO DECEMBER)

B/S in Agricultural Biology

W.R.S. Kulathunge

S.Tharanya

B/S in Agricultural Economics

W.M.T.C.L. Madanayake
M.M.I.K. Marasinghe

T.H.C.S. Swarnathilake

K. Vallipuram

B/S in Agricultural Engineering

P.K.R. Chinthaka
S.C. Ekanayake
H.M.N.S. Herath
S. Kabilan

K.H.T.R. Kumara
G.U.D. Nipunajith
K.O.C.U. Samarasiri

G. Theavivirathan
E.M.T.G.A. Thennakoon
V. Vimaladhas

B/S in Agricultural Extension

I.D.K.S.D. Ariyawanse
D.D.P. Arunasiri

S.D. Mangalee

S. Sivasakthikaran

B/S in Animal Science

A.M.D.N.S Athapaththu
A.M.P.G.M.K. Aththanayake
W.A.J.R. Fernando

M.U.W. Muthunayake
S. Ravikumar
R.M.N.P.K Ranathunga

C.K. Sapumohotti
S.H.A. Sirikumara

B/S in Bio Statistics

D.M.P.H. Dissanayake
R.K. Dissanayake

H.A.C.S. Hapuarachchi

M.S.S. Suranga

B/S in Crop Science

J.A.M.M. Jayakody
S. Kohombange
B.A.M.S. Kumara
F.B.D.U. Kumari
L.S.B. Liyanage

M.A.U.P. Munasinghe
K.P.A.K. Pathirana
D.D.E. Piyathissa
K.A.E.C. Premalal

N. Saseekaran
R.W.M.N.K. Senevirathna
A.P. Wijesinghe
W.R.A.T.N. Wijesundara

B/S in Food Science & Technology

W.A.P.M.M. Ariyaratna
G.M.W.R. Bandara
A.H. Bogahawatta
M.C.W. Gamage
M. Mahendranathan

A.J.H. Mubarak
A.C.H. Perera
K.H.P. Rathnaweera
A.P.T. Samarasekara
W.A.P.C. Sathsarani

G.A.D.D. De Silva
M.M.H. Udeshika
H.M.I.A. Uduwerella
P.H. Vithana
A.G.N. Wimanshinee



B/S in Business Administration

MBA

P.A.G.T. Dharmasena
T.M. Dayananda
T.M.K.W. Dayananda

K.G.I. Dilrukshi
V.W. Jayaweera

L.R.K. Tilakaratne
W.L.R.K. Wimalarathna

PGD

D.N.B. Rajapaksha

NEW PUBLICATIONS

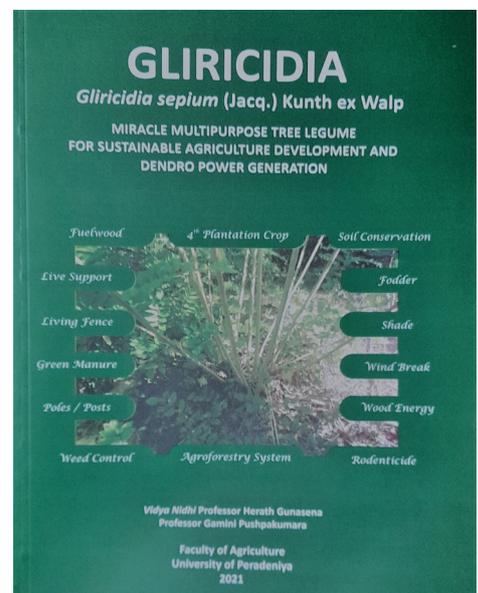
GLIRICIDIA, A MIRACLE MULTIPURPOSE TREE LEGUME FOR SUSTAINABLE AGRICULTURE AND DENDRO POWER GENERATION ;

Authors: *Vidya Nidhi* Prof. Herath Gunasena and Prof. Gamini Pushpakumara.

The above publication reviews local and international information on the use of this tree legume in sustainable land management systems and dendro power generation. It is a valuable source of information for policy makers, agriculturists, farming community and dendro power industries.

The book is available for sale at the Postgraduate Institute of Agriculture, University of Peradeniya.

Contact: Ms. Shanthi; 0812388219, 0714446752

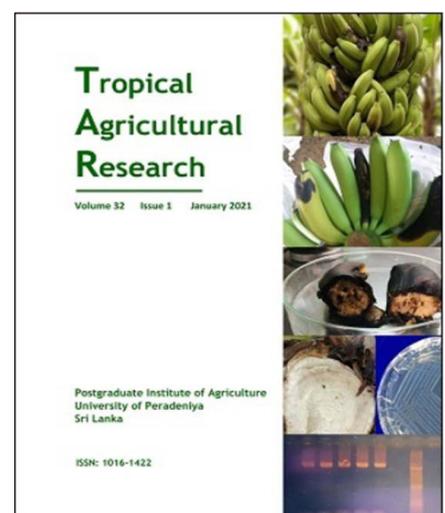


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Authors can obtain the hard copy of the journal from the TAR Journal Secretariat. This is also available online(<https://tar.sjloj.info/774/volume/32/issue/1/>).

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