



PGIA News



The Newsletter of Postgraduate Institute of Agriculture, University of Peradeniya



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



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CONTENTS

Main Story
Academic News
Staff/ Student News
Research (M. Phil. & Ph.D.) Briefs
Workshops/Short Courses/Symposia
Forthcoming Events
M.Sc./MBA /PGD. Pass List -2019
Social Events

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ABOUT THE NEWS LETTER

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.

PGIA'S PROUD SERVICE TO THE NATION...

Established in 1975, the Postgraduate Institute of Agriculture has served the nation for 45 years producing postgraduates in various disciplines in agricultural sciences. It is a unique institute and the first of its kind to be set up in the Sri Lankan university system. Its establishment has been a landmark achievement of tremendous significance to strengthen the higher level manpower development for the rapidly expanding and diversifying agricultural sector of the country.

The Faculty of Agriculture, the precursor of the PGIA works in unison and offer several postgraduate programs through Boards of Study corresponding to the departments/ disciplines of the faculty. At the inception, six Boards were created based on six departments of the faculty. Since then there has been a proliferation of Boards to cover the emerging disciplines such as Food Science & Technology, Entomology, Biometry & Statistics and Business Administration. These Boards are responsible for need assessment of postgraduate trained personnel for different sectors, design and development of new degree programs in emerging areas of agricultural sciences, regular review of existing degree programs and feedback, developing examination and assessment procedures etc. The Boards also develop criteria for student admissions and allocating students to the Boards to follow different study programs.

The PGIA operates under a unique system of management as a semi-autonomous institution attached to the University of Peradeniya and governed by a Board of Management. It has a measure of independence and some financial autonomy but in all other matters it comes under administration of the Peradeniya university, including and degree awarding authority. This is an advantage to the students to get a degree from a prestigious institution like the University of Peradeniya. PGIA's biggest asset is its teaching staff of 137 members of which more than 90% are holding Doctoral degrees from reputed foreign universities. The majority of the staff is from the Faculty of Agriculture. Presently, more than 98% of faculty staff is engaged in postgraduate teaching and research supervision. Over the years, the PGIA has been recognized as a premier national institute for postgraduate education in agricultural sciences. As a result the annual admissions have shown a positive trend and currently stand around 550 – 600.

The PGIA has continuously diversified its course offerings. Currently, it offers 31 taught Master's programs including a two year MBA. All these programs are in conformity with the Sri Lanka Qualification Framework (SLQF) levels 8-9 formulated by the UGC. The M. Phil/ Ph.D. degrees include an in-depth research component and conform to SLQF 11-12. The PGIA has so far awarded 6,700 postgraduate degrees and on average 15 -20 research degrees annually.

Vidya Nidhi **Prof. H. P. M. Gunasena**

MAIN STORY

31st PGIA Annual Congress

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 31st Annual Congress of the PGIA was held during 21-22 November, 2019 at Amaya Hills Resort, Kandy.

It provided an opportunity for postgraduate students to showcase their research findings to an audience comprised of academics, researchers, PGIA alumni and other stakeholders. In this year, 33 oral and 10 poster presentations were made under ten scientific sessions : Molecular Genetics and Biodiversity, Statistics and Forecast, Seeds to Product, Material Science in Agriculture, Developmental Extension, Food and Nutrition, Trade, Nutrition and Welfare of Animals, Land and Soils, Agricultural Pests and Diseases and Poster Session.

Prof. Alistair Hetherington, Melville Wills Chair of Botany, University of Bristol, United Kingdom and the Editor-in-Chief of 'New Phytologist' graced the inaugural session as the Chief Guest and also delivered the keynote speech on 'Successful Scientific Publishing: Lessons Learnt from New Phytologist'.

Several other dignitaries including Prof. Upul B. Dissanayake, The Vice Chancellor, University of Peradeniya, Prof. Gamini Pushpakumara, Dean, Faculty of Agriculture, Prof. C.M.B. Dematawewa, Director, PGIA addressed the Inaugural Session of the Congress. Prof. Casper Venk, ETH Zurich, Switzerland and Dr. Tadayuki Tsujita, Department of Applied Biochemistry and Food Science, Faculty of Agriculture, Saga University, Japan delivered the invited speeches.

Mr. George Daevey and Ms. Josephine Davey, Directors of Pirrama Consulting Pty Ltd., Australia joined the Congress as Panelists in the Panel Discussion on Shifting the Sri Lankan Dairy Farmer to a Market Orient Dairy Operator.

Mr. Andrew Samuel, Head of Micro Finance/ Chief Continuous Improvement Officer at Alliance Finance Co. PLC delivered the Distinguished Alumnus speech at the closing session.



BEST PRESENTERS IN THE TECHNICAL SESSIONS

Technical Session	Presenter	Title of the Paper
Molecular Genetics & Biodiversity	P. G. D. S. Amarasena	Morphometric and molecular characterization of isolates of the root lesion nematode, <i>Pratylenchus loosi</i> infecting tea in Sri Lanka
Statistics & Forecast	M.G.D Abeysekara	Equilibrium relations in the coconut market: A model of raw, oil and desiccated coconut for the period 1956-2017
Seeds to Products	K.A.P Dalpathadu	Physiochemical properties of Sri Lankan instant black tea manufactured using broken mixed fannings (BMF) as raw materials obtained from different elevation categories
Material Science in Agriculture	A. Ratnakumar	Microcrystalline cellulose as reinforcing agents for polypropylene composites
Developmental Extension	C.E. Munasinghe	Evaluation of tea smallholder attitudes on the sustainability of tea industry: A case study in Pussellawa tea extension officer range
Food & Nutrition	W.M.C.B. Wasala	Effect of different concentrations and exposure time of 1-methylcyclopropene (1-mcp) on physico-biochemical qualities of 'Ambul' banana at ambient conditions
Trade, Nutrition and Welfare of Animals	K.K.T.N. Ranaweera	Negative energy balance in tropical and temperate crossbred dairy cows at post-partum transition stage: A case study
Land & Soil	H. P. G. T. N. Kulasinghe	Physiochemical properties of Sri Lankan instant black tea manufactured using Broken Mixed Fannings (BMF) as raw materials obtained from different elevation categories
Agricultural Pests & Diseases	D.U.M. Gunawardhana	Potential for mass rearing of mealy bug predator <i>Cryptolaemus montrouzieri</i> Mulsant (Coleoptera: Coccinellidae) on two mealybug species, <i>Planococcus minor</i> and <i>Pseudococcus viburni</i>
Poster Session	K.K.L.Hasini	Small pelagic fish value chain and its' contribution to local food security in southern Sri Lanka

AWARDS

A.W.R. Joachim Memorial Award

This award is presented to the students who earned the highest GPA in each academic year. Chathuri Lankani Karunarathne of the B/S in Crop Science won this award for the year 2018.

Award from Alumni Association

Overall best presentation at the 31st Annual Congress won by M.G.D Abeysekara



ACADEMIC NEWS

Admissions for the Academic YEAR 2019

Applications for the new academic year were called and more than 750 applications have been received until 25 April. Considering the requests of the students closing date for applications has been extended until 17 July 2019.

The PGIA offers 31 M.Sc. Degrees and MBA Degree by course work and coursework & research , M. Phil and Ph.D. degree programmes. The new academic year commenced in June 2019. More than 370 students registered as regular students at the The PGIA.

Orientation Programme for new Students - Peradeniya Branch

An orientation programme was held for the new students on 06 April 2019 at the Auditorium of the Department of Animal Science , Faculty of Agriculture under the patronage of the Deputy Vice-Chancellor Prof. Parakrama Karunaratne. The Secretaries and Chairpersons and the members of the Postgraduate Agriculture Students Association (PASA) attended the orientation programme. The Vice Chancellor, Dean, Faculty of Agriculture , the Director, Deputy Registrar , System Analyst of the PGIA and the President of PASA addressed the new students in the morning session. Librarian and the Systems Analyst of the PGIA made presentations on the use of the Library and the Computer Unit and the MIS of the PGIA respectively. Afternoon session was administered by the Secretaries and Chairpersons of the Boards of Study in guiding the students to select relevant courses etc.



MBA Orientation Programme

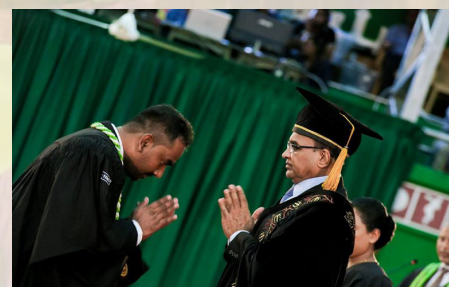
The orientation programme for the new students of 2019 batch of the MBA program was held on the 18 August 2019. The event was attended by the panel of lecturers , current students and members of the Alumni. The event included an introductory session , a motivational speech by an Alumni member followed by networking activities.



ACADEMIC NEWS Contd.

General Convocation 2018

Graduation is not an end of a tough journey. It is the beginning of a new era. The 81st General Convocation of the University of Peradeniya for the year 2018 held on 04 July 2019 with the presence of Vice Chancellor Upul B. Dissanayake and many distinguished guests. A total of 278 graduates of the PGIA inclusive of 06 Ph.D., 31 M.Phil, 196 M.Sc., and 45 MBA were conferred degrees at the afternoon session of the convocation.



Revitalizing Tropical Agriculture Research (TAR) Journal of PGIA



The first issue of the 31st volume of the Journal Tropical Agricultural Research (TAR) was launched at the Inaugural Session of the 31st Annual Congress. Dr. Chalinda Benaragama, one of the Chief Editors of the TAR Journal presented the achievements and the future directions of

the journal to the congress audience. From this year onwards, the journal is open for accepting papers year around and will also be open for non-postgraduate research. Tropical Agriculture Research Journal is an indexed Journal in Directory of Open Access Journals (DOAJ) and CiteFactor. Hard copies of the Journal can be purchased from the Congress office of the PGIA and also available online.

Growing Up with Technology - Prospectus and Student Handbook Available Online !!!

For the first time in history of PGIA, The Student Handbook and the Prospectus were published in the institute website with the aim of moving with the technology and to ease the access for students and interested candidates for information. Technology is advancing at a tremendous rate and youth today are more tech savvy and reliant on technology than ever before. Most people are on the internet nowadays. They access the web through their PCs, laptops, tablets and mobile devices. With as many people on the internet today, with more and more coming online every day, keeping ahead of technology is a necessity for long term stability and growth.

As the prospectus and student handbook are the bird's-eye view of the institute, the *online* availability would be highly advantageous for the institute as well.

Online Application Facilitates Student Admissions

PGIA accepts online applications throughout the year for both Peradeniya and Colombo branches. This decision was taken due to high demand and the frequent requests of the students. Any applicant can apply *via* the online portal of the institute's website.

Applications submitted online will be considered for the next student intake. This will not only increase the student intake but also ease the management tasks of the PGIA.

MOU between UOP and QUT Renewed

The MOU between University of Peradeniya and Queensland University of Technology (QUT) was first signed in 2014. Under this agreement, the collaborating institutes have agreed to jointly develop a system of academic exchanges that will allow for a joint Ph.D. programme.

-To perform coordinated research studies at both universities with a minimum total duration of one year full time studies spent at each university.



-To be jointly guided by supervisors from both universities with the aim of obtaining the joint Ph.D. by satisfying the requirements and quality standards for the degree of each university

-To submit one single thesis based on the result of the research undertaken in both universities for examination to each university.

Renewal of the agreement was done on March 2019 and extends till 2024 with the aim of providing this valuable opportunity to more students.

Under this collaborative program, three students already enrolled for Ph.D. degree programs at the PGIA have been selected by the University Grants Commission (UGC) to follow joint degree programs at the QUT. These students are Ms. A.M.N.L. Abeysinghe of the B/S in Animal Science and Ms. C.K. Pathirana and Ms. M.T.M. Perera of the B/S in Agricultural Engineering.

B/S in Crop Science Offers Two New Optional Courses

Two new optional courses will be offered by the Board of Study in Crop Science starting from the academic year 2019. New courses are: **Turf Grass Management** (CS 5145) and **Plant Functional Traits** (CS 5210).

Turf Grass Management course aims to enable the student to gain knowledge about biological characteristics of the turf grass species, their use in intensive & extensive lawns and skills on establishment, maintenance and regeneration of lawns (ornamental, commercial, golf and sports etc.).

Plant functional Traits course aims to provide knowledge on interspecific relationships among leaf structure and function and plant growth in different biome, global trends in plant functional traits (FT), competitive ability and the role of phenotypic plasticity in determining the response of individual plants to climate change, expertise on establishing plant functional trait scaling relationships and making predictions / forecasting using established trends.

Delegates from Melbourne University Visit PGIA



Prof. Frank Dunshea and Prof. E.N. Ponnampalam of the Faculty of Veterinary and Agricultural Sciences, University of Melbourne visited the PGIA on 15 December 2019. A meeting was arranged at the PGIA for the students of the relevant Boards of study and few Members of the teaching panel.

Prof. Buddhi Marambe chaired meeting.

Prof. Frank Dunshea presented an introductory presentation on the postgraduate opportunities and scholarships available for PGIA students at the University of Melbourne followed by a general discussion with the interested students on individual basis to discuss about their unique scenarios, and initiate contacts and the application process.



PGIA Promotes Postgraduate Research

Research Publication Facilitation Fund (RPFF)

The PGIA has taken a policy decision to encourage the students to publish the finding of their research at the earliest opportunity in high impact journals and present them orally or as poster presentations at overseas conferences. The objective of RPFF is to improve and strengthen the quality of the research degree programs offered by the institute in order to achieve excellence in postgraduate research.

The PGIA has established two schemes to promote the publication and wider dissemination of research findings of its research students by providing financial assistance as subscription fees for the publication of postgraduate research articles in high impact peer reviewed scientific journals and participation of postgraduate students at international conferences/workshops for oral/poster presentations.

In this year, the following students presented their research findings in international conferences using the RPFF



Ms. Gimhani Hemachandra, a student of the B/S in Agricultural Engineering attended the 7th International Conference on Water & Flood Management (ICW-FM 2019) held in Bangladesh on 2 - 4 March 2019 and presented her research findings on Developing a composite map of extreme rainfall anomalies in Sri Lanka.

Mr. S. Su-kirtharuban, a Masters student in Biotechnology in the Board of Study Agricultural Biology presented his research findings at the 35th TOCKLAI Conference, India held on 22-23 February 2019 as a poster presentation on Determination of LD₅₀ of gamma rays in vitro mutagenesis of tea (*Camellia sinensis* L.)



Ms. Amasha Withana a student of B/S in Soil Science participated in the 6th International Conference on Agriculture (AGRICO) 2019, held on 22nd – 23rd August 2019 in Bangkok, and presented her paper on Application of cattle manure affects phyto availability of Cadmium in Soil.

Ms. Thilini Ranasinghe a student of B/S in Agricultural Engineering participated in the 10th International Conference on Structural Engineering and Construction Management held on 12-14 December 2019 at Earl's Regency Hotel, Kandy, Sri Lanka and presented her research findings on Development of a composite construction material using post consumer plastic wastes.



Ms. Sandarenu Kodikara and **Ms. Lakmini Dissanayake** of the B/S in Soil Science published their research findings in the proceedings of the 14th International Conference of the East and Southeast Asia Federation of Soil Science Societies conference held on 3-8 November 2019 in Taiwan. These were on Baseline concentrations, solubility and spatial variability of potential toxic trace elements in soils in up and mid country wet zone in Sri Lanka and Development of slow release fertilizer using rice husk biochar to improve NOE in paddy cultivation respectively.

ACADEMIC NEWS Contd.

Research Facilitation Fund (RFF)

The PGIA basically a research institute and even taught Masters programmes contain a significant research component. With modern research facilities and a highly qualified teaching staff, the PGIA attracts a wide variety of researchers from various professions, academia and industries. The mingling of ideas with knowledge makes it the perfect place to broaden one's horizons.

The institute has established a Research Facilitation Fund to encourage postgraduate research of its students. Since its establishment in 2010 over 20 students research were facilitated by the RFF. Annually Institute allocate over Rs. 2 mn. to strengthen the fund. Many students who carry out research on national importance are facilitated by this fund. The Institute entertain applications for the fund throughout the year and select research on national importance for funding.

This year the following students have been awarded funds through the RFF.

Name of the student	Board of Study	Degree Programme	Research Title	Amount Approved (Rs.)
S.M. Amarathunge	Agricultural Economics	M.Sc. (CW & R)	Economical & botanical analysis of some selected <i>Salacia</i> species of low-land wet zone in Sri Lanka	120,000.00
D.U.M. Gunawardana	Plant Protection	M.Sc. (CW & R)	Bio-efficacy of the predatory beetle, <i>Cryptolaemus montrouzieri</i> (Coleoptera: Coccinellidae) for the management of papaya mealybug (<i>Paracoccus marginatus</i>) in Sri Lanka	212,000.00
A.G.K.S. Kodikara	Soil Science	M.Phil.	Baseline concentration, solubility and spatial variability of potential toxic trace elements in soils in up and mid country wet zone in Sri Lanka	450,500.00

Field Training Programme at MLBCRP

As a part of their practical training, the students following the Communication for Development (EX 5106) course offered by the B/S in Agricultural Extension visited the Minipe Left Bank Canal Rehabilitation Project (MLBCRP), of The Mahaweli Water Security Investment Programme on 11-12 of November 2019. The students were able to get an insight to the communication & participatory communication approaches of the MLBCRP. On-site discussions and knowledge sharing with the stakeholders including farmers, president of the Federation of Farmer Organizations, Minipe Irrigation Management Division officers, of the project and project's video production team and observation of the project implementation provided a great learning experience for the students.

The visit was coordinated by Prof. W.A.D.P. Wanigasundera (Course Coordinator, EX 5106), Dr. Uvasara Disanayeke (Co-lecturer, EX 5106) and Ms. Isuri Kumarasinghe (Tutor, B/S Agricultural Extension). Mr. K. D. Wijethilaka, Communication Specialist -MWSIP), Mr. E.M.I. Eranga and Mr. W.N.K. Wehalla-Senior Communications Officers participated in the discussion as key resource persons.



Field Visit to North Western Province Canal Project

The postgraduate student group following the course module on Social Impact Assessment (SIA), offered by the B/S in Agricultural Extension visited the North Western Province Canal Project (NWPCP) sites in Galewela in early March.

NWPCP is a part of the Mahaweli Water Security Investment Programme (MWSIP) funded by the Asian Development Bank and the Government of Sri Lanka. The programme aims to divert Mahaweli water to the target irrigable areas in the North Western Province. The students observed the social issues on various NWPCP sites including places of religious and archaeological importance, schools, agricultural and homelands directly affected by the project. They also had an interactive session with officials and public stakeholders. The visit enabled the students to develop skills related to SIA activities, reporting, while exposing them for the possible measures to be taken to minimize the social impact. The visit was coordinated by Dr.

Wijaya Jayatilake (Course Coordinator), Dr. Shamen Vidanage (Programme Coordinator, IUCN), Mr. Padmasiri Moonamale (Environment Specialist, MWSIP) and the staff of NWPCP.



Field Visit to Media Stations and Resettlement Villages in Jaffna



Students following the Development Journalism course module offered by the B/S in Agricultural Extension visited the 'Thinakkural' newspaper press, 'IBC Tamil' (International Broadcasting Corporation) studio & broadcasting station, and resettlement village in Kankasanthurai on 28 & 29

January 2019. The students were exposed to newspaper editing and printing process at 'Thinakkural' newspaper press, and the state of the art studios, television & radio broadcasting process. The students also met with the villagers of Kankasanthurei, resettlement village to explore the public opinion and views on post-civil war developmental projects. This exercise was helpful for the students to develop journalistic perspective. The visit was coordinated by Dr. S. Raguram, Department of Media Studies, University of Jaffna and Prof. W.A.D.P. Wanigasundera, Course Coordinator, B/S in Agricultural Extension.

Field Visit to SOFA (Small Organic Farmers' Association)



A group of 26 postgraduate students following the Community Development (EX 5105) course module offered by the B/S in Agricultural Extension visited SOFA, Matale; and the Wademada and Panwaththa

farmer societies on 25 November 2019. During the visit the students gained valuable exposure on the community development approaches carried out by the SOFA. Students were also able to interact with the stakeholders including farmer society members by visiting their households to observe the engagement of men, women and youth in agriculture and implementation of the community development activities. The visit was coordinated by Dr. Nishadi Somaratne and Ms. Isuri Kumarasinghe (Tutor, B/S in Agricultural Extension). Mr. Bernard Ranaweera, President and Mr. S.C.G. Pathiranage, ICS Manager- SOFA participated in the discussions during the field visit.

Progress Reviews to Improve Quality of Research

All research students are required to make a presentation on the progress of their research work at the Progress Review Meetings scheduled by the relevant Boards of Study every semester. These progress reviews help students to identify their shortcomings and the feedback from the members of Boards of Study will help them to improve the quality of their research.

New Boards of Study Members Approved

The following persons were approved as the Board of Study members from 16 January 2019.

Agricultural Biology

Prof. D.C. Bandara
Dr. S.A.C.N. Perera
Dr. N.U. Jayawardana
Dr. K.K.D.V. Jayatilaka
Dr. S. Kodithuwakku
Dr. H. Fonseka
Dr. S. Krishnarajah
Dr. G. Samarasinghe

Agricultural Economics

Prof. H.L.J. Weerahewa
Prof. L.H.P. Gunaratne
Dr. D.V. Pahan Prasada
Dr. P.M. Korale Gedera
Dr. S.P. Weligamage
Dr. R.M. Herath
Dr. A.D.H.K. Kankanamge
Dr. H.W. Shyamalie

Agricultural Engineering

Prof. R.P. de Silva
Prof. K.S.P. Amarathunga
Prof. NDK Dayawansa
Prof. P. Wickramagamage
Dr. A.K. Karunaratne
Dr. S. Pathmarajah
Dr. Sanjaya Rathnayake
Eng. Janaki Meegastenna

Agricultural Extension

Prof. E.R.N. Gunawardena
Dr. L.N.A.C. Jayawardena
Dr. U.I. Dissanayake
Dr. H.V.A. Wickramasuriya
Dr. H.M.G.S.B. Hitinayake
Dr. M.W.A.P. Jayatilaka
Dr. B.M.K. Perera
Mr. Charitha Ratwatte

Animal Science

Prof. J.K. Vidanarachchi
Prof. G.L.L.P. Silva
Prof. R.M.C. Deshapriya
Prof. S.K. Yatigammana
Dr. S.M.C. Himali
Dr. A.R.S.B. Athauda
Mr. Ajith H. Gunasekara

Bio-Statistics

Prof. T. Sivananthawerl
Prof. L.H.P. Gunaratne
Prof. L.D.B. Suriyagoda
Prof. R.O. Thattil
Prof. R. Abeynayake
Dr. K.W.L.K. Weerasinghe
Dr. B.L. Peiris
Dr. Gamini de Silva

Business Administration

Prof. K.A.S.S. Kodithuwakku
Prof. L.H.P. Gunaratne
Dr. S. Kumar
Dr. S.D.S. Hemachandra
Dr. D.V. Pahan Prasada
Dr. M.W.A.P. Jayatilaka
Dr. N. Sanderatne
Dr. M.V. Senanayake

Crop Science

Prof. B. Marambe
Prof. W.A.P. Weerakkody
Prof. S.P. Nissanka
Prof. M.C.M. Iqbal
Dr. H.M.G.S.B. Hitinayake
Dr. R.M. Fonseka
Dr. W.M.W. Weerakoon
Dr. Shelomi Krishnarajah

Food Science & Technology

Prof. D.C.K. Illeperuma
Prof. K.M.S. Wimalasiri
Prof. R. Sivakanesan
Dr. R.P.N.P. Rajapakse
Dr. B.E.P. Mendis
Dr. A. Chandrasekera
Mr. P.C. Arampath
Mr. S.M.A.C.U. Senarathne

Plant Protection

Prof. D.M. De Costa
Prof. B. Marambe
Dr. K.S. Hemchandra
Dr. N.U. Jayawardana
Dr. K.K.D.V. Jayathilake
Dr. J. de Zoysa
Dr. L. Nugaliyadda
Mr. A. Jayawardana

Soil Science

Prof. R.M.C.P. Rajapaksha
Dr. R.S. Dharmakeerthi
Dr. A.M.C.P.K. Attanayake
Dr. W.S. Dandeniya
Dr. W.A.U. Vitharana
Dr. A.P. Heenkende
Dr. A. de Silva
Dr. G.D.K. Kumara

STAFF / STUDENT NEWS

Sadamali completes postgraduate degree

- Mrs. Sadamali Ranasinghe, Senior Assistant Bursar of the PGIA completed her Masters of Professional Accounting (MPACC) degree at the University of Colombo.

Staff Changes/ New Appointments

Navoda Appointed as Course Coordinator

- Mrs. Navoda Bandaranayake was appointed as the Course Coordinator (Full time) of the PGIA on 15 June 2019. She obtained B.Sc. in Agricultural Technology and Management from the Faculty of Agriculture, University of Peradeniya and M.Sc. in Horticulture from PGIA. The above position fell vacant after Ms. Nithya Heenkenda, the previous Course Coordinator resigned to join the Sri Lanka Technology University.



Chamari joined as a Management Assistant to PGIA Congress Office

- Ms. Chamari Neranjala joined the PGIA on 15 June 2019 as a Management Assistant and she has been assigned to work at the Congress Office. Previously, she worked at the Audit Branch of Colombo University as an Internal Audit Assistant.



Senevirathne Retired

- Mr. R.M. Senevirathne, a lab assistant (special grade) retired from PGIA after serving the institute for 31 years. Since joining to Electrical maintenance unit, works department University of Peradeniya in 1978, he has rendered his service for 41 years for the University.



Shanika wins Gold Medal at ICAN 2019; Congratulations !



Shanika Warnakulasooriya, M.Sc. student in Food Science and Technology in Colombo branch participated in the 4th International Invention Innovation Competition in Canada, (iCAN 2019) The event took place on 24 August in Toronto where the finalists from 20 countries were in attendance from around the world. The overall participation for the competition this year marked a record-breaking 50 countries entering more than 500 inventions. All exhibitors made oral presentations of their inventions and innovation projects to the jury members for the finals evaluation and award selections. Shanika won the Gold Medal for the **innovation of Organic Fertilizer - Natural Magic Booster for Crops & Soil.**

SUSRED awards for the year 2019

During the National Science Foundation awards 2019 held on the 18 December 2019 at the BMICH Colombo, Dr. Venura Herath and Dr. Dimanthi Jayatilake received a SUSRED (Support Scheme for Supervision of Research Degrees) award under the M.Phil. category for the supervision of Mr. Asanga Nagalla (PGIA/15374) on his M.Phil degree offered by the Postgraduate Institute of Agriculture, University of Peradeniya.

The research thesis was titled "Functional and comparative genomics of grain number, plant height and heading date (Ghd7) in Sri Lankan rice varieties and its role in conferring abiotic stress. This research work was conducted with funding provided by the National Research Council grant NRC-14-117.



Prof. Costa awarded the CVCD Excellence Award 2018



The Committee of Vice-Chancellors and Directors (CVCD) Excellence Awards Ceremony was held on 19 March 2019 under the patronage of President Maithripala Sirisena at the President's House in Colombo.

The CVCD Excellence Awards are given to recognize and honour the outstanding contributions of the academic staff in the Sri Lankan Universities. The University of Peradeniya received the highest number of awards for Senior Researchers among the Sri Lankan Universities.

Prof. W.A.J.M De Costa of the Board of Study in Crop Science awarded the Most Outstanding Senior Researcher in the field of Biological Sciences including Agriculture and Allied Sciences.

President's Award for Scientific Research

In 2018 and 2019, the following members of the teaching panel of the PGIA have won the President's Award for scientific research

Prof. W.A.J.M. De Costa, B/S in Crop Science

Prof. L.D.B. Suriyagoda, B/S in Agricultural Biology, Bio-Statistics and Crop Science

Prof. R.M.C.P. Rajapaksha, B/S in Soil Science

Prof. B.C. Jayawardena, B/S in Animal Science and Food Science & Technology

Prof. J.K. Vidanarachichi, B/S in Animal Science and Food Science & Technology

Prof. D.G.N.G. Wijesinghe, B/S in Food Science & Technology

Dr. W.A.U. Vitharana, B/S in Soil Science and Crop Science

Dr. R.M. Fonseka, B/S in Crop Science

Dr. K.W.L.K. Weerasinghe, B/S in Bio-Statistics and Crop Science

Dr. B.D.R. Prasantha, B/S in Food Science & Technology

Development of an Industrial Scale Paddy Husk Pyrolyzer

Yushani Alahakoon a M.Phil. student of the B/S in Agricultural Engineering supervised by Dr. Anuruddha Karunaratna and the team successfully fabricated and tested an industrial scale pyrolyzer.



This study was aimed to design, fabricate and evaluate a pyrolysis unit (Down Draft Double Chamber pyrolysis reactor – DDDC reactor) to be used in continuous biochar production with the use of paddy husk as both feedstock and fuel material. Initially a small scale prototype with manual operation was designed and fabricated to optimize the design. The evaluation was done with the

conducted field trials and temperature variations, syngas composition and energy value, mass and energy balances. With the help of obtained parameter data, an industrial scale DDDC reactor was also designed and fabricated by mechanizing the reactor process. The fabrication and evaluation was done at the Meewathura Research Station, University of Peradeniya. The product was developed as part of the target oriented research project on “Development of Eco-friendly farming technologies to minimize inorganic fertilizer usage while maintaining productivity and improving soil fertility” funded by the National Research Council of Sri Lanka. Dr. Saman Dharmakeerthi served as the team leader of the project.



RESEARCH BRIEFS



P. G. D. S. Amarasena
Ph.D.
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A COMPARATIVE POLYPHASIC STUDY ON VARIATIONS OF MORPHOLOGICAL, MOLECULAR, REPRODUCTIVE FITNESS AND PATHOGENICITY OF *Pratylenchus loosi* POPULATIONS OWING TO CHANGING SOIL TEMPERATURES IN TEA PLANTATIONS OF SRI LANKA

The root-lesion nematode, *Pratylenchus loosi* Loof is the most economically important pest in tea in Sri Lanka. Under climate change scenario and inferior agricultural practices, unusual spread and damage levels of this nematode pest were evident in all tea growing regions which required specific nematode management strategies. In this study, variations of morphological, molecular, reproductive fitness and pathogenicity of *P. loosi* populations in six locations from different agro-ecological regions in Sri Lanka were assessed. Results revealed an increase in mean soil in tea in Sri Lanka with significantly different virulence and pathogenicity levels triggered by soil temperature variations temperature above the optimal range (18-24°C) resulting in different

symptomological expressions and damage levels in tea. Contrasting deviations to the existing climatology graphs using data on rainfall, soil temperature and moisture and *P. loosi* populations in respective locations were seen in the six locations. Morphometrics of *P. loosi* showed intraspecific variability and clustered in four groups in Principal Component Analysis. Sequence analysis of D2/D3 expansion segments of the 28SrDNA and ITS region of rDNA further validated the results. Morphometrically different and molecularly divergent *P. loosi* populations in tea with significantly different virulence and pathogenicity levels triggered by soil temperature variations were proven. This warranted appropriate nematode management and mitigation strategies in different tea growing regions.



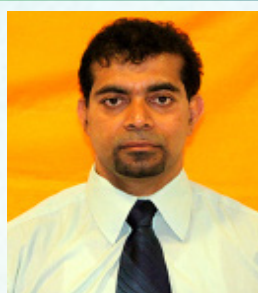
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SUITABILITY ASSESSMENT OF RAINFED LOWLAND PADDY FIELDS IN KURUNEGALA DISTRICT USING GEO-INFORMATICS

A study was conducted in three Agrarian Service Centre regions representing Dry, Intermediate and Wet Zones of Kurunegala district to find out a methodology to estimate rainfed paddy lands and to assess suitability of rainfed lowlands for successful rice cultivation. Rainfed paddy fields were extracted from 1:10,000 topographic maps and a methodology was developed to extract rainfed paddy fields from MODIS 8 day composite images. Soil suitability was assessed using soil chemical (Available-P, exchangeable-K, pH, Electrical Conductivity) and physical (soil texture, saturated hydraulic conductivity, and available water) parameters by overlay analysis in GIS. Maps of maximum and minimum temperatures and relative humidity were overlaid to get the climatic suitability. Spatial and temporal (weekly) variability of rainfall and evaporation were evaluated and climatic suitability and moisture availability were combined to get the overall suitability. Results show that 1:10000 maps are more suitable to extract paddy extent while the 8 day composite

time series of MODIS is capable of identifying NDVI at different phenological stages of rice. According to this study, none of the area in three zones is highly suitable for paddy due to very low levels of soil pH and exchangeable K. Rainfed rice cannot be grown in *Yala* season in DZ due to climate and moisture unsuitability but it can be grown in IZ and WZ in *Yala* season and all three zones in *Maha* season. Application of soil remedial measures, selecting suitable varieties and suitable date of crop establishment are needed to achieve good results. This approach with geo-informatics can be applied to other rice growing areas in the country to assess the land suitability and to identify constraints for paddy land productivity by taking this study as a model.



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INVESTIGATION OF INTERRELATIONSHIPS AMONG SOCIOECONOMIC, HYDRO CLIMATIC, AND FISHING PARAMETERS IN VICTORIA, SORABORA AND ULHITIYA RESERVOIRS AND THEIR IMPLICATIONS ON RESERVOIR FISHERIES MANAGEMENT

Objectives of the study were to investigate socioeconomic aspects and perceptions of fishing communities on reservoir fisheries management and seasonal fluctuation of fishing efficiency of three perennial reservoirs, and their implications on sustainable management. Three perennial reservoirs in Sri Lanka namely Victoria (major), Sorabora (minor) and Ulhitiya (major) were used. The analysis showed the potential for improvement expressed by some variables such as the degree of willingness of the fisher to be involved in fisheries organization activities and the effectiveness of the training and other intervention strategies adopted by the authorities. The investigation on illegal fishing practices indicates the relative importance of certain socioeconomic factors of fishing community and partial effectiveness of present management steps on mitigating illegal

fishing activities. Considerable prevalence of alcohol use was evident among the fishermen in the three reservoirs though extreme cases were rare. However, contrary to the popular belief, many moderate alcohol users of the three reservoirs have come forward as active members contributing to fisheries management. The investigation on population dynamics confirms the distinct and reservoir-specific seasonal patterns of rainfall, water level, fish yield, fishing effort, catch efficiency, species diversity and income and their statistical interrelationships existing in those reservoirs. Also study reveals the differences between the efficiency of current gill net usage pattern among the fishers and the optimum gill net selectivity that has a greater potential for income and sustainability.



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A COMPARATIVE POLYPHASIC STUDY ON VARIATIONS OF MORPHOLOGICAL, MOLECULAR, REPRODUCTIVE FITNESS AND PATHOGENICITY OF *Pratylenchus loosi* POPULATIONS OWING TO CHANGING SOIL TEMPERATURES IN TEA PLANTATIONS OF SRI LANKA

Evaluating productivity and yield stability of crops in water-limited environments and under climate change scenarios is difficult in real field conditions. Modelling approaches can be used as alternative and efficient methods to evaluate the above. APSIM is a simulation model used to study the performance of crops under diverse management and environmental conditions. APSIM-oryza, APSIM-maize and APSIM-mungbean modules were parameterized and validated for widely grown Sri Lankan varieties, i.e. short (Bg300) and medium (Bg359) duration rice varieties, local variety Ruwan and hybrid variety Pacific for maize, and variety MI-6 for mungbean, across all three major climatic zones of the country. Historical rainfall data were analyzed to study the changes in rain

fall onset and amount of rainfall received in those seasons. Moreover, validated models were used to evaluate the crop and water productivities (CP and WP, respectively) under different management and climate change scenarios.



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IMPROVED WEED MANAGEMENT AND CROP ESTABLISHMENT METHODS FOR RICE GENOTYPES CAPABLE OF GERMINATING UNDER ANAEROBIC CONDITIONS IN DIRECT-SEEDED RICE PRODUCTION SYSTEMS

A series of screen-house and field experiments were conducted at the International Rice Research Institute (IRRI), Philippines to develop improved crop establishment and weed management methods in direct-seeded rice (DSR) production systems involving anaerobic germination (AG)-tolerant rice genotypes (IR64+AG1, *Ciherang*+Sub1+AG1, GSR1, and GSR2), two AG-tolerant donor accessions (*Khao Hlan On* and *Ma Zhan Red*), moderately AG-tolerant genotypes (*Ciherang*, *Ciherang*+Sub1, and IR64) and three major weed species (*Echinochloa crus-galli*, *Cyperus difformis*, and *Ludwigia hyssopifolia*).

In the dry-DSR experiments, rice crop emergence and growth decreased with increasing sowing depths (SD) from 0.5 to 2 cm when combined with 2 or 5 cm flooding depth (FD). Genotype IR64+AG1 and IR64 decreased by 10–14% due to weed competition under 2 cm FD. Genotype *Ciherang*+Sub1+AG1 resulted in >280 plants m⁻², higher leaf area, and shoot biomass under flooded conditions in water-DSR. Emergence of *E. crus-galli* and *L. hyssopifolia* decreased, but that of *C. difformis* increased with increasing depth of flooding under wet and dry DSRs. The 1 cm SD showed better growth for all genotypes under different FDs. The 2 cm FD is sufficient to have significant control of problematic weed species. The results of water- and dry-DSR experiments highlighted the probable shift of currently problematic weed flora in DSR to a few flood-tolerant weed species. Water-DSR with AG-tolerant genotypes is recommended as the best alternative especially in areas where complete inundation occurs during initial phase of rice seed germination.



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WATER ACCESS, ALLOCATION, PRODUCTIVITY AND CONFLICTS IN HAKWATUNA OYA SUB WATERSHED IN DEDURU OYA BASIN

This study was initiated to identify the factor affecting water accessibility and productivity among different water users, namely irrigation scheme users, in-stream users and agro well users and to identify the existing water rights of above groups, allocation mechanisms, institutional arrangements available for water allocation and a factor leading to water conflicts within the Hakwatuna Oya sub-watershed. A detailed study was conducted among these three groups with regard to their water use, land and water productivity and income for both *Yala* and *Maha* seasons. The results showed that in-stream and agro well users have access to more water compared to the farmers in the irrigation command. There is no system of water allocation among and between different types of water users in the Hakwatuna Oya catchment area. Farmers within the Hakwatuna Oya Irrigation scheme have water rights. Though there are provisions in existing regulations to take action against illegal water users, taking legal action against a large number of farmers scattered along the tributaries, and the catchment appears to be a problem. water conflicts exist the irrigation command as well in the catchment of Hakwatuna Oya sub-watershed. Integrated approach within the different sectors in the area is needed for the sustainable management of the sub-watershed.



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INVESTIGATION OF THE RECENT CHANGES IN PADDY CULTIVATION IN TERMS OF FOOD QUALITY AND ECOSYSTEM SUSTAINABILITY

Farmers in *Awlegama* area had changed conventional paddy farming practices to new innovative practices. Cultivation of traditional varieties, use of minimum tillage practices, use of parachute method, mechanical weeder, biological methods were prominent among the changes. Support from the Department of Agrarian Development, limitation of resources (labor, machineries), health issues and environmental consideration were the major driving forces. The highest yield was obtained for newly improved varieties which are grown using inorganic methods. The lowest concentration for all heavy metals (Pb, Cr, As, Hg, Cu) was observed for the traditional varieties which are cultivated through organic inputs. The lowest protein content in rice grain was observed for the cultivation of traditional rice varieties using organic methods. The highest species richness and diversity was observed for organic fields. Based on that it can be concluded that the organic fields are well managed by the natural processes (>2 level of natural protection)

and the stability of the ecosystem is very high (> Shannon index). Recent changes are more towards the solutions for the problems that farmers have. Even though the organic paddy gives low yield, there is a market for organic paddy. And also it sustains the health of ecosystem and farmers. Output of different farming categories should be looked at in a border perspectives rather than considering the yield.



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MORPHOLOGICAL, BIOCHEMICAL AND MOLECULAR CHARACTERIZATION OF FRUITS AND RAPID MULTIPLICATION OF FIVE SELECTED BAEI ACCESSIONS [*Aegle marmelos* (Lin.) Correa]

The objectives of the present study were to assess the fruit morphological diversity, optimize the DNA extraction and PCR protocols, assess the genetic diversity using SSR and ISSR markers, assess the bioactivity and phytochemical profiles of the fruit pulp and establish a micropropagation protocol for field grown trees of bael. The five elite trees *Beheth Beli* (BB), *Mawanella* (MA), *Paragamma* (PA), *Polonnaruwa Supun* (PS) and *Rambukkana* (RA) were assessed. PS and RA produced the biggest fruits. PS also owned significantly least number of seeds that are also small and sterile. RA possessed the darkest flesh with the highest Chroma. The modified CTAB method yielded a higher amount of DNA than commercial kits, without conceding the quality. The inclusion of spermidine at the rate of 0.8 μ M improved the efficiency of PCR. The polymorphic SSR and ISSR markers

PS are genetically similar at 98 % of Nei's genetic distance. The FRAP and DPPH assays revealed that the bael fruit pulp has an antioxidant capacity. The bael fruits extracts can prevent the DNA nicking caused by free radicals. The antibacterial activity of ethanol and water extracts of bael possess inhibition against *Escherichia coli*, *Staphylococcus aureus* and methicillin-resistant *S. aureus*. The best explant sterilization method was the washing of explants in a 2.5% fungicide for two hours. The successful micropropagation is possible if the explants are harvested during April to May. The MS medium with 1 mg/l of BAP generated the highest number of multiple shoots and the most extended shoots. The most successful rooting was observed with full MS supplemented with 1 mg/ml NAA and 3% sugar. The success of acclimatization was 42%. The present study laid a foundation to develop bael as a lucrative horticultural crop in Sri Lanka.



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EVALUATION OF GROWTH, DEVELOPMENT AND YIELD PARAMETERS OF SELECTED COMMERCIAL VARIETIES OF POTATO (*Solanum tuberosum*) IN CONTRASTING AGRO-ECOLOGICAL REGIONS OF SRI LANKA

The study was conducted with the objective of assessing productivity of different potato varieties under conventional areas of Nuwara Eliya, Badulla and Jaffna vs. non-conventional areas of Mannar and Sooriya Kanda which are having variable climatic conditions. The experiment was arranged using two factor factorial RCBD, where the blocks are nested within locations during 2015-2017. Above mentioned 5 locations were the levels of the factor 1 and commercial potato varieties of *Cal white*, *Red La Soda*, *Constance*, *Connect*, *Faluka*, *Laperla*, *Arnova* and *Granola* were the factor 2. Results indicated that, *Red La Soda*, *Cal White*, *Faluka* and *Arnova* can be recommended for Mannar. *Faluka*, *Laperla*, *Arnova* could be recommended for Jaffna in addition to *Cal White* and *Red La Soda*, which have already been recommended. Since

variety *Cal White*, *Faluka* and *Arnova* can be easily adopted to changing weather conditions, especially increasing temperature, they can be recommended even for conventional potato growing areas of the country to minimize climate change impacts on potato production.



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INVESTIGATION ON RELATIONSHIP BETWEEN WATER REGIME AND ECOSYSTEM IN PADDY CULTIVATION; A CASE STUDY IN BAYAWA MINOR IRRIGATION SYSTEMS IN DEDURUOYA RIVER BASIN

Paddy fields are man made ecosystems with prolonged cultivation practices and different water management systems that can affect to the biodiversity of the field. This study was conducted in the command area of "Bayawa" tank in Kurunegala, Sri Lanka to assess the water regime and respective ecosystem of the paddy field. Water regime was assessed using two separate indices namely Potential Water Regime Index (PWRI) and Actual Water Regime Index (AWRI). PWRI was developed to assess the overall water regime using physical factors of field in term of three indices "Vulnerability", "Resilience" and "Reliability". Social capacity of farmers' can interpret the wet/dry conditions in the field and it was used in developing AWRI. PWRI and fauna survey of the field was conducted at six randomly selected locations in the fields. The water fluctuation in the field leads to higher aquatic fauna diversity. Alternative wetting and drying have created more

favorable habitats for aquatic fauna to increase the biodiversity of the fields. Water regime Vulnerability index was positively correlated to diversity of aquatic invertebrates during *Maha* season. Therefore, ecosystem enhancement can be achieved through appropriate water management in the rice field to achieve environmental sustainable paddy cultivation.



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THE IMPACT OF ADVERSITY QUOTIENT ON PERCEIVED STRESS OF NGO SECTOR MANAGERS IN SRI LANKA

Individual differences in the capacity to bounce back from adversities are emphasized under the concept of Adversity Quotient (AQ); the measure of an individual's ability to bounce back and cope with adverse situations. The aim of this study was to investigate the relationship between perceived stress and AQ among middle-level managers employed in the Sri Lankan Non-Governmental Organizational (NGO) sector. The study population consisted of middle-level managers representing both Sri Lankan (SLNGO) and International (INGO) NGOs in Sri Lanka. Two-hundred-and-twenty-three valid responses were collected using stratified random sampling method in a questionnaire survey. Findings revealed a significant negative association between AQ and perceived stress. Age, work experience, and academic qualifications were found to significantly influence the level of AQ. AQ revealed no significant moderation between demographic factors and perceived stress. However, gender and marital status did not record such influence on AQ. Results

further revealed higher AQ levels among INGO managers when compared to SLNGO managers. In addition, the study found that dimensions of AQ predict the variance in perceived stress. However, among demographic factors, only age and marital status explained the variance in perceived stress. The type of NGO was not a significant determinant in explaining stress. Further, AQ revealed no significant moderation between demographic factors and perceived stress.



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REGULATION OF GROWTH AND FLOWERING OF HEEN-BOVITIYA (*Osbeckia Octandra*(L.) DC.) TO DEVELOP AS A FLOWERING ORNAMENTAL

Heen-bovitiya (*Osbeckia octandra* (L.) DC.) is a branched shrub, endemic to Sri Lanka and commonly distributed in dry, wet and montane zone within the country. It is one of the wild plants identified by Royal Botanic Gardens, Peradeniya to introduce to the floriculture industry as it has potentials to be improved as a flowering ornamental. However potential to be improved as a flowering ornamental plant, has not been fully exploited. This plant is underutilized, unexploited and poorly understood in aspects such as propagation, growth and development and flowering behavior. To exploit this plant, the knowledge on its propagation, growth and development, and manipulation of flowering and growth habit is essential. However, there is no published information on Heen-bovitiya on the factors such as its nutrient requirements, application of plant growth regulators

and pruning and training methods that influence plant growth and development, floral induction, floral initiation or the rate of flower development. Thus, in the present study, the suitable techniques to multiply the plant and the possibility of manipulation of plant growth and flowering with plant nutrition and physical and chemical methods were investigated.



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EFFECT OF INTRODUCING *Macrobrachium rosenbergii* (GIANT FRESH-WATER PRAWN) TO PERENNIAL RESERVOIRS IN NORTHERN PROVINCE, SRI LANKA

This study on *M. rosenbergii* in the selected reservoirs and the baseline for evaluating and monitoring how well it perform in perennial reservoirs in northern Sri Lanka. Results revealed that introduction of *M. rosenbergii* as culture-based fisheries (CBF) in selected five reservoirs has achieved considerable success, especially in terms of economic benefits. Even though the recapture rate was low, it improved the livelihood of fishers while increasing their interest in fisheries. Other benefits included increased fish consumption at household level and household food and income security. Also, from the additional income, the fishers were able to invest on personal assets, other livelihoods such as agriculture and social events. Furthermore, as the fishers had a high interest on harvesting

of *M. rosenbergii*, environmentally harmful destructive fishing practices, such as hit and harvest have been reduced. Further, despite production being higher in larger reservoirs, production per unit area was higher in smaller reservoirs. Modified gillnets, with 3-5 polypropylene floaters and more weights attached to create slackness (small hanging ratio) and hanging twine, were developed and applied by fishers played a significant role in catch of *M. rosenbergii*.



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IMPACT OF USERS' TECHNOLOGY READINESS AND PERCEIVED VALUE ON MOBILE PHONE ENABLED INTERNET USAGE IN CENTRAL PROVINCE OF SRI LANKA

The primary objective of this study was to investigate the impact of users' Technology Readiness and Perceived Value on Mobile Phone Enabled Internet Usage. The data collection of the study was done through a survey. The study sample consisted of 522 adult mobile phone users covering the Central Province of Sri Lanka. Data analysis was done using the Covariance-based structural equation modeling. Findings of the study revealed differences in users' technology readiness across different groups of demographic factors such as the level of education, age, and civil status. The adoption intention of mobile internet services was indirectly influenced by users' technology readiness. Utilitarian, Epistemic and Hedonic value dimensions indicated mediation effects on the effect of users' technology readiness on the adoption intention of mobile phone enabled internet services. Findings also

revealed some moderating effects by certain demographic factors. Strategies to increase the mobile data usage and the offering of more customized mobile packages were identified. Policy implications in considering the users' level technology readiness to digitalize the public services and the inefficiencies of using price as a controlling mechanism for mobile internet services have been discussed.



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IMPROVEMENT OF LD 99-12-38 HIGH YIELDING RICE LINE FOR BACTERIAL LEAF BLIGHT RESISTANCE THROUGH BACKCROSS BREEDING AND VALIDATION BY MOLECULAR MARKERS

Bacterial leaf blight (BLB) disease is an emerging issue in rice cultivation of Sri Lanka. *Xanthomonas oryzae* pv. *oryzae* is casual organism. There are no chemical control method practices to control the disease. Use of resistance varieties is most appropriate mode of control. Bacterial blight resistance *Xa21* and *Xa4* are dominant genes responsible for durable resistance of rice varieties for the disease. The advanced rice line, Ld 99-12-38 is farmer demanding, non lodging type, high yielding rice line and is susceptible to BLB. Therefore, an attempt was taken to improve it resistant to BLB through marker-assisted backcross breeding (MAB) by crossing the rice line with resistant variety IRBB60 and advanced plants up to BC3F2 level. At the beginning selected two molecular markers namely pTA248 (*Xa21*) and *PM1*+ *MP2* (*Xa4*) were tested for their polymorphism with parental materials. To

identify BLB resistance *Xa21* and *Xa4* alleles, markers were validated in thirty five BC3F2 progenies derived from a cross between Ld 99-12-38/ IRBB 60. As the results selected two molecular markers were polymorphic with parental materials with the expected fragment sizes. Out of the tested 35 lines, eight were confirmed with possessing both *Xa21* and *Xa4* with resistant to the disease, twenty one lines carried only the resistant allele *Xa4*. A paired t test revealed that there is a significant difference in the resistance level exerted by progeny carrying resistance alleles of two genes than with one ($p = 0.0064$). In addition, six progeny lines were heterozygote for *Xa4* locus; one progeny line was heterozygous at both loci. No lines were identified carrying only the *Xa21*. Therefore it can be concluded that resistant genes *Xa4* and *Xa21* has been pyramided to rice lines derived from cross between Ld 99-12-38/IRBB60 in BC3F2 progenies with similar morphological characters Ld 99-12-38 to withstand BLB. The selected markers pTA248 and MP1+MP2 can be recommended to in marker-assisted selection of *Xa21* and *Xa4* genes in crosses involving the tested genetic background.



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PINEAPPLE (*Ananas comosus* var. *comosus*) IMPROVEMENT BY HYBRIDIZATION

Two experiments were conducted at Regional Agriculture Research and Development Centre, Department of Agriculture, Makandura, Sri Lanka from January 2014 to August 2016. First experiment was carried out with the objective of improving the fruit quality characters of pineapple hybrids, H3 (Kew ♀ x Mauritius ♂) and H4 (Kew ♀ x Mauritius ♂) by backcrossing with Mauritius. Plant and fruit characters and fruit quality parameters of 14 offspring derived from H3 x Mauritius and 21 offspring of H4 x Mauritius backcrosses were evaluated. Among these, only 3 offspring showed greater fruit quality characters along with desirable plant and fruit characters than its parents suitable for both fresh and canning were selected as breeding material for future pineapple improvement programs. Second experiment was carried out to determine the probable genotypic constitution of

Kew and Mauritius for leaf spininess trait. F1 progeny obtained from Kew x Mauritius cross evaluated for spiny character. Evaluation result showed 51.5 % offspring having completely spiny character and 48.5 % plants having spiny tip character recording 1:1 ratio. Therefore, the probable genotypic constitution for Kew should be ppSs and for Mauritius ppss (P and S are the genes which control the spiny leaf trait of pineapple).



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PREVALENCE AND ECONOMIC IMPACT OF CONTAGIOUS PUSTULAR DERMATITIS (CPD) AND MOLECULAR CHARACTERIZATION AND PHYLOGENETIC ANALYSIS OF CPD VIRUS AMONG SMALL RUMINANTS IN SRI LANKA

In the 10 districts included in the survey the majority of goats (91%) were indigenous type while others (9%) were Jamunapari crosses. Most farmers (69.97%) preferred sole livestock farming to integrated farming, and adopted extensive (59.94%) or semi intensive (30.43%) management practices. The prevalence of CPD in goats in the surveyed 10 districts was 51.39%. Apparent prevalence of CPD was higher in Ampara district (69%) and in extensively managed farms (64.2%). In 23.08% farms, CPD has lowered milk yield, while in 83.97% farms CPD has increased cost of production. Estimated farm gate price of cured goat meat (Rs.320.28 \pm 47.19/kg) was lower than that of healthy goat meat (Rs.628.55 \pm 59.65/kg) resulting in significant economic losses. Following complications were reported from CPD affected farms: anorexia (2.31%), dehydration (35.26%), lameness (61.54%) and foot rot (9.62%). Laboratory analysis (through PCR) showed eighty six samples out of ninety two (93.47%) were positive for CPD viral DNA. In phylogenetic analysis based on the partial B2L gene, Sri Lankan isolates were closely related among themselves. One of the strains could be used as a vaccine candidate. Two isolates from India (Accession No JN 846834, KU128538) were closely related to isolates from Anuradhapura, Mannar, Jaffna and Kilinochchi districts. Two isolates from China (Accession No KU 199831 and KC 568397) were closely related to isolates from Vavuniya and Trincomalee.



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BIOLOGICAL CONTROL OF BEAN APHID, *Aphis craccivora* (Koch) (HEMIPTERA: APHIDIDAE) USING LOCALLY AVAILABLE PREDATORY COCCINELLID SPECIES (COLEOPTERA : COCCINELLIDAE) THROUGH AUGMENTATION AND RELEASE

This study was conducted to generate biological and ecological data to initiate a biological control programme targeting *Aphis craccivora*, using locally available coccinellid beetle species. During the field survey eight coccinellid species were found in Kurunegala district and seven in Kandy district. *Me. sexmaculatus* and *Mi. discolor* were selected for further evaluation due to their higher abundance. The total larval period of *Mi. discolor* was 9 days, during this period total of 117 aphid nymphs were consumed. *Me. sexmaculatus* consumed 125 aphid nymphs during the larval period 7 days. *Me. sexmaculatus* took 14 days to complete development from egg to adult while *Mi. discolor* took 18 days. *Me. sexmaculatus* is an efficient predator of *A. craccivora* with a high consumption rate. Feeding efficiency increases with increasing larval instars. Preliminary mass rearing protocol was developed for *Me. sexmaculatus* under laboratory conditions. The highest survival percentage was recorded when the larvae were fed only with aphids. The lowest survival percentage was recorded when the larvae reared only on chicken liver. The highest number of eggs per female was laid on the walls of plastic box and addition of 2-3 papers into the rearing boxes or cages. The least aphid density was recorded in case of releasing more adult beetles. The findings of these experiments disclose the suitability of *Me. sexmaculatus* to be used as a biocontrol agent in augmentative release programme to manage *A. craccivora*.



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GENETIC AND PHENOTYPIC CHARACTERIZATION OF HAEMONCHOSIS RESISTANCE IN SRI LANKAN INDIGENOUS GOATS AND THEIR JAMUNAPARI CROSSBREDS

Genetic resistance for haemonchosis found in different goat breeds can be applied in control of *Haemonchus contortus* in goats. The present study which consists with two stages; an artificial challenge trial and a field trial was focused on identifying the parasitic resistance in Indigenous goats and their Jamunapari crossbreds. The faecal egg counts, haematological parameters and serum chemistry reveals Indigenous goats are more resistant to haemonchosis compared to their Jamunapari crossbreds. Though Jamunapari crossbred goats showed a low level of resilience to parasitic infection, Jamunapari crossbreds have developed a high level of parasitism during the artificial challenge trial. However, both genotypes showed inclining trend in body weight reflecting possibility of tolerating parasite infection without severe production losses. Further, high within goat type variability was observed in both goat types. Moreover, a total of 17 loci with single nucleotide polymorphism were identified for genetic characterization of parasitic resistance, since these loci are having significant associations with faecal egg counts. The comparison of different genotypes in a single locus showed that certain SNP genotypes were having significant associations with phenotypic parasitic resistance. The identified genomic information on 17 SNP loci should be coupled with phenotypic information to identify appropriate breeding goals for future selection programs.



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Dr. Venura Herath

PHENOTYPIC AND GENOTYPIC EVALUATION OF SELECTED RECOMMENDED RICE VARIETIES FOR SALINITY TOLERANCE

Soil salinity is one of the major constraint to expanding rice cultivation and it has the potential to reduce national rice production significantly. It affects all growth stages of rice in varying degrees starting from germination up to maturation. Though salt tolerant varieties have been developed, their level and stage of salt tolerance have not been estimated properly. Therefore, the present study was carried out at the Rice Research and Development Institute, Batalagoda to identify salinity tolerance of popular local rice varieties at different stages of the life cycle, and to identify promising rice varieties for saline areas and to detect their genotype at *Saltol* region aiming at finding the relationship with salt tolerance. Twenty one improved rice varieties were tested at seed germination, seedling, seedling to harvesting and booting to harvesting stages and DNA samples were amplified using 8 SSR markers located between 10.8-16.4 Mb, on the *Saltol* QTL region of the chromosome1. Eight markers used were

highly polymorphic and 45 alleles were amplified with the band size of 100-300 bp. The varietal response in different stages of the life cycle against to salinity *Bg 406* was categorized in moderately tolerant or highly tolerant in all stages of the life cycle and *At 402*, *Bg 369* and *At 354* were categorized as tolerant or highly tolerant after the germination stage. Therefore the varieties *Bg 406*, *At 402*, *Bg 369* and *At 354* can be identified as promising salinity tolerant varieties from the selected rice varieties. Eight markers selected in the 10-16 Mb of *Saltol* region on chromosome 1 were highly polymorphic and of them RM 562 would be more useful for screening of rice germplasm for salinity tolerance.



L.D.I.De.S. Wijethilaka
M. Phil
B/S in Agricultural Extension
Senior Supervisor
Dr. K.F.S.T. Silva

DAIRY VALUE CHAIN ANALYSIS IN THE UVA PROVINCE OF SRI LANKA

This study presents the results of a survey designed to identify and examine the prevailing causes for current situation of the dairy industry with special emphasis on the Uva Province in Sri Lanka. The study revealed that consistent policies and government support are inevitable in dairy sector development and in Sri Lanka's inconsistent policies have negatively affected the dairy industry. Technical, economic and social aspects were analysed through a questionnaire survey of 297 farmers and technical analysis using Cobb Douglas Production function revealed that herd composition, breed type, labour usage, and feeding methods affected output gains at farm level and socioeconomic factors of farmers such as education, gender, full or part-time farming and membership of a farming society are closely related to milk production. The analysis of cost of production and income revealed that the highest income per cow was in intensive farming but profit

per litre was the lowest mainly because of high cost of concentrate feed. The study suggests recommendations to the dairy model in the Uva province and to be replicated in most parts of the country, particularly in the Northern and Eastern parts of the country to become self-sufficient in milk.



R.A. A. S. Rathnayaka
M.Phil.
B/S in Soil Science
Senior Supervisor
Dr. W.A.U.Vithana

SITE SPECIFIC NUTRIENT MANAGEMENT FOR PADDY SOILS ON THE BASIS OF POTENTIAL MANAGEMENT ZONES DELINEATED THROUGH PROXIMAL SOIL SENSING

Site Specific Nutrient Management (SSNM) is an approach to manage soil nutrients in cost-effective and eco-friendly manner while enhancing the yield and the productivity. This study was conducted to investigate short-scale spatial variability of a paddy grown Alfisol using proximal sensing and to delineate potential management zones (PMZs) of the studied soil as well as to explore the relevance of these delineated PMZs for SSNM. Proximally sensed apparent electrical conductivity (ECa) measured by DU-ALEM-1S sensor was used as a secondary information to investigate short-scale spatial variability of the studied paddy soil efficiently. Proximally sensed ECa showed a strong correlation with soil clay% and sand%. Hence, ECa showed high potential of predicting soil texture of the study field. Regression kriging procedure was used to

prepare the detailed soil texture maps (sand and clay). Fuzzy k-mean classification system identified two distinguished texture-based PMZs based on soil texture data extracted from detailed texture maps. Routine analysis and nutrient fixation study revealed the existence of significant differences of availabilities and dynamics of soil nutrients between the texture-based PMZs in the study site. Finally, the significant differences in rice plant growth in response to added nutrients doses between the delineated PMZs were observed in greenhouse experiment emphasizing high potential for SSNM on the basis of texture-based PMZs in the study site.



E.A.D. Siriwardana
M.Phil.
B/S in Soil Science
Senior Supervisor
Prof. R.M.C.P. Rajapaksha

ISOLATION AND SCREENING OF BENEFICIAL *Arbuscular mycorrhizae* FOR EXOTIC VEGETABLES GROWN IN UP COUNTRY OF SRI LANKA AND PRODUCTION OF MASS CULTURES

Arbuscular Mycorrhiza Fungi (AMF) colonize roots of many food crops and enhance plant growth and yields by mobilizing unavailable forms of soil nutrients directly to plants. This study was conducted to assess the abundance and the diversity of AMF associated with vegetables grown in Nuwaraeliya, and to screen the best suited AMF inoculants for leeks under field conditions. Leeks, carrot and lettuce plants along with rhizosphere soils were collected from conventional fields (n=30) and organic fields (n=9) and analyzed for AMF infection, spore diversity and soil properties. The growth response of leeks to axenic cultures of AMF was investigated in pot and field experiments with 50% cut down of P fertilizer. The AMF infection in field samples remained above 50% correlated with available P negatively and N positively. Diversity of AMF was higher in conventional fields (22 spore types) than in organic farm (6 types). Inoculation with AMF increased root infection (97%) < and growth by 72% over the non-inoculated leeks in pots. In the conventional and organically managed fields, inoculation increased yield of leeks by 43-110% and 36-171%, respectively over the non-inoculated treatment. Therefore, AMF inoculants are a viable option to mobilize reserved forms of P and Mg in soils.



M. Kuruppu
M. Phil
B/S in Plant Protection
Senior Supervisor
Prof. D.M. De Costa

MANAGEMENT OF ROOT DISEASE OF JACK TREES (*Artocarpus Heterophyllus*) THROUGH INTEGRATED APPROACH

Soil borne plant pathogens act as silent killers of perennial trees and disease diagnosis is most difficult in early ages. The specific objectives of this study were to: collect information on the present status of root diseases of perennial fruit trees in the Western province, isolate and molecular identification of possible pathogens causing root rot and collar rot diseases of jack trees, confirm pathogenicity, determine the effects of selected microenvironmental conditions on growth of fungal pathogens causing root rot and collar rot of jack tree, determine the cross infection ability of those pathogens, assess fungicides efficiency *in vitro* on the pathogens, isolate and identify *Trichoderma* species from rhizosphere of Jack trees and to determine antagonistic ability of *Trichoderma* species against to pathogens of root diseases of Jack. According to results of this study, significant influence was on Jack when previous crop was rubber in same land. *F.solani*, *F.oxysporum* and *R.microporus* were identified pathogens, Favorable micro-environmental conditions are pH 6 for *R. microporus* and *F. oxysporum* and pH4 was *F.solani*. 30°C for *R. microporus* isolates and 25°C for *Fusarium* isolates. No light intensity affected on colony growth of *Rigidoporus* and *Fusarium* isolates. *Tebuconazole* (250EW) with 250ppm was effective in controlling both *Rigidoporus* and *Fusarium* pathogens. There were six *Trichoderma* species identified from rhizosphere of jack and they had an ability to control these pathogens by antibiosis, competition or both.



N.A. Sanjeevani
M.Phil.
B/S in Agricultural Biology
Senior Supervisor
Prof. P.H.P. Fernando

DETERMINATION OF HYPOGLYCEMIC ACTIVITY, TOXICOLOGICAL EVALUATION AND FORMULATION OF CAPSULE USING LEAF EXTRACT OF

Adenanthera pavonina (L)

Adenanthera pavonina L is a plant belonging to the family Fabaceae. Objectives of this study were to investigate the aqueous and ethanol extracts of the leaves of *A. pavonina* for their hypoglycemic activity and associated toxicity. It was also aimed to develop a hard gelatin capsule formulation which is safe, cheaper and can also alleviate the diabetic symptoms, thereby providing multifaceted benefits. Sprague Dawley male rats were used for the study. Control group (Group I) was treated with distilled water and Group II, III, and IV were treated with 250, 500, 1000 mg/kg/day b.wt. dose of aqueous extract of leaves of *A. pavonina* respectively. Group V treated with 500 mg/kg/day b.wt. dose of standard drug Tolbutamide and Group VI and VII were treated with 250, 500 mg/kg/day b.wt. dose of ethanolic extract of leaves of *A. pavonina* (EEAP) respectively. The results revealed that EEAP has the capability of regulating blood glucose concentration and most effective dose in rats was 250 mg/kg/day b.wt. There were no any toxicity associated with this extracts and those extracts were consisting of phytochemicals which have potential hypoglycemic activity. The prepared formulation which contained EEAP can further be developed to be used as a potential hypoglycemic agent with several benefits.



S.A.K.D. Hemantha
M.Phil.

B/S in Food Science and Technology
Senior Supervisor
Dr. R.P.N.P.Rajapaksha

homogenization were 8.67 μm & 5.4 μm respectively. The size of agglomerates in colloidal milled & colloidal milled s. coconut milk was 2613.4 μm^2 and 2921.0 μm^2 respectively. Therefore Demeter coconut milk processed by colloidal milling result fat globules with relatively high diameter and fat agglomerates with relatively low area compared to high pressure homogenized product. Therefore it can be concluded that colloidal milling of coconut milk with 0.2% Guar gum and 4 second resident time can be adopted as an alternative method of conventional high pressure homogenization, complying with Demeter processing requirement.

COLLOIDAL MILLING AS AN ALTERNATIVE FOR HOMOGENIZATION OF CANNED HIGH FAT COCONUT MILK TO COMPLY WITH DEMETER PROCESSING REQUIREMENTS

This research was conducted to evaluate the possibility of adopting colloidal milling as an alternative process of homogenization for Demeter international to develop standards. Gua gum was used (0%, 0.05%, 0.1%, 0.15%, 0.2%, 0.25% and 0.3%) as an additive to stabilize the food system and suitable level was determined with combination of various resident time on colloidal mill (2S, 4S, 6S, 8S). Product quality *via* sensory tests and variation of pH, microbial level, layer separation, grittiness; fat particle size and degree of agglomeration were used to evaluate the outcome. It was determined that .2% guar gum with 4 second resident time was suitable. With increasing residence time, the density was reduced (0.982 g/l to 0.980 g/l), TPC was increased (300 cfu/ml to 1300 cfu/ml), and pH was reduced (6.9 to 6.7). The resulted mean fat droplet size at colloidal milling &



S.T.Munasinghe
M.Phil.

B/S in Soil Science
Senior Supervisor
Dr. R.S. Dharmakeerthi

soil fertility, quantify the optimum nutrient requirement and determine the effect of RH-BC and CC-BC on nutrient uptake and yield of maize growing in the Alfisol that has received the optimum level of major nutrients. Traditional Kunthaniya was improved to produce BC from rice husk with less variability and greater efficiency and showed that the application of biochar (2% w/w) produced from rice husks and corn cobs were able to increase the maize yield by 11-37% with appropriate quantities of nutrients and the optimum nutrient contents to achieve the maximum maize yield which varies with the type of amendments.

A SYSTEMATIC EVALUATION OF FERTILITY AND PRODUCTIVITY OF MAIZE GROWING SOIL IN THE DRY ZONE OF SRI LANKA AMENDED USING RICE HUSK AND CORN COB BIOCHAR

Maize is the second most important cereal crop in Sri Lanka mainly cultivated on Reddish Brown Earth (RBE) soils (Typic RhodustalFs). Low yield of maize mainly is due to low fertility of RBE soils having low organic matter (OM) content. Biochar (BC) is an alternative soil amendment which persists for long period in this soil. In the study rice husk biochar (RH-BC) and corn cob biochar (CC-BC) were produced using locally available low cost pyrolysis techniques. Supply of deficient nutrients in balance quantities is also an important factor for long term soil fertility. Adsorption capacity of soil should be adequate consideration when making recommendations. BC application alters the nutrient availability and transformation. A systematic approach is required to assess soil fertility status in BC amended soil prior to fertilizer recommendation. In the study 2% (w/w) RH-BC and CC-BC amended soils were systematically evaluated for



W.S. Priyantha
M.Phil.

B/S in Agricultural Biology
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Prof. V.A. Sumanasinghe

be considered as a comparatively better tester. IR73885-1-4-3-2-1 was identified as a better restorer in this study since it showed significantly high GCA (5.12) for grain yield in *Yala* 2015 season. No combinations did show significant difference for grain yield during *Maha* season. But the cross combinations 22 (IR78354A/IR73885-1-4-3-2-1) and 2 (BgCMS4A/IR73885-1-4-3-2-1) have recorded significantly higher grain yield than others during *Yala* season. Therefore, these two cross combinations can be used as hybrids in the Low Country Intermediate Zone during *Yala* season.

IDENTIFICATION OF BETTER PARENTS VIA COMBINING ABILITY TO DEVELOP HETEROTIC RICE HYBRIDS (*Oryza Sativa* L)

This study was conducted at the Rice Research and Development Institute (RRDI), Bata-lagoda in the Low Country Intermediate Zone (LCIZ) of Sri Lanka. The study period was over three consecutive seasons namely *Yala* (2014) *Maha* (2014/2015) and *Yala* (2015). Twenty five hybrid cross combinations were included in the experiment, developed by crossing five cytoplasmic male sterile (CMS) lines (BgCMS4A, IR68902A, IR70369A, IR78359A, and IR78354A) with five elite restorer lines (IR72998-93-3-3, IR73885-1-4-3-2-1, IR183325-66-2-1, IR75282-58-1-2-3, and SN10-2071) following the Line x Tester mating design. The experiment was established in a Randomized Complete Block Design (RCBD) with two replications in each season. BgCMS4A was identified as the best tester for grain yield out of 5 testers. It recorded high grain yield (39.18g/hill) over seasons and high number of panicles per hill (NP/H) during *Maha* 2014/15 season. IR78354A exhibited significantly higher GCA for GY/H and NP/H. Therefore, IR78354A also could

RESEARCH BRIEFS Contd.



Y.M.U.K.Y. Silva
M.Phil.
B/S in Agricultural Biology
Senior Supervisor

HOST PATHOGEN INTERRELATIONSHIPS DUE TO PRE HARVEST TREATMENT OF *Burkholderia spinosa*, A BIO CONTROL AGENT OF BANANA (*Musa acuminata*) ANTHRACNOSE

This study was conducted to determine the effects of *Burkholderia spinosa*, a bacterial antagonist when applied as a pre-harvest treatment to banana plants, on population dynamics of epiphytic and pathogenic microorganisms dwelling on the banana phyllosphere along with the fate of population build up of the bacterial antagonist applied. Moreover, the efficiency of *B. spinosa* as a pre-harvest treatment for controlling banana anthracnose and the effect of *B. spinosa* in inducing host plant resistance through the synthesis of defense related enzymes were also determined. Field established banana (cultivar Kolikuttu) were applied with *B. spinosa* as a foliar spray (FS) and a soil drench (SD), nine times repeatedly at bi weekly intervals. A gradual increase of *B. spinosa* population was observed in FS -treated plants but not in SD-treated or untreated controls. Density and diversity of bacteria

other than *B. spinosa* were higher in control plants and yeast spp. were more prevalent on SD-treated plants. FS-treated plants had the lowest colony density of *Aspergillus* spp. and other unidentified fungal spp. FS and SD-treated plants resulted in a rapid decline of *Fusarium* spp. on the phyllosphere. Leaf washings from *B. spinosa* treated plants declined the spore germination of anthracnose causal agent (*Colletotrichum musae*). Findings revealed the potential of reducing banana anthracnose incidence and severity by *B. spinosa* when applied as a FS or a SD. Pre-harvest application of *B. spinosa* increased the synthesis of defense enzymes, β -1,3-glucanase and chitinase on the peel of banana fruits significantly. Therefore, pre-harvest application of *B. spinosa* a FS or a SD is desirable to build up considerable population density of the antagonist on the phyllosphere, to suppress a range of microbes on the phyllosphere, to reduce anthracnose incidence and severity and to induce defense related enzymes on treated fruit peels.

CONFERENCES, SEMINARS AND WORKSHOPS

Workshop on Writing an Impactful Research Article

Prior to the 31st PGIA Annual Congress a One-day workshop on "Writing an Impactful Research Article Workshop" was held on 21 November 2019 with the objective of encouraging young scientist to share their scientific knowledge and experience through publishing their research work. Prof. Alistair Hetherington, Melville Wills Prof. of Botany, University of Bristol, UK, the Chief Guest of the PGIA Annual Congress conducted a session on "How to get published in high profile journals". Prof. Buddhi Marambe, Prof. Janak Vidanarachchi, and Dr. Chalinda Beneragama served as resource Persons.

The workshop consisted of six sessions. They were 5 W's in publishing research articles, Do's and don'ts in scientific writing, Stating 'Materials and Methods' precisely targeting reproducibility, Presenting and writing tables and figures, a practical session on Spot-the-mistake and a panel discussion on creating a high impact.

Target Audience of the workshop was undergraduates, postgraduates and researchers. The workshop was an immense success with over 50 participants as the feedback of the trainees was highly positive.

CONFERENCES, SEMINARS AND WORKSHOPS Contd.

Workshop on Dining Etiquette



A workshop on Dining Etiquette was successfully conducted by the B/S in Agricultural Extension, for students following the Professional Skills (EX 5193) course module coordinated by Dr. Wijaya Jayathilaka. This workshop was held on 15 December 2019 at the Amaya Hills, Kandy.



Thirty students participated in the workshop. Mr. Rushdy Raheem, Resident Manager of the above hotel was the main resource person. The workshop covered areas of formal table settings, dining etiquette, socializing and networking at formal events followed by a formal sit down dinner.

Short Course on Dairy Farm Mechanization and Milk Processing Machines

A 3- day short course was organized by the B/S in Agricultural Engineering on 29 to 31 January 2019 targeting the Livestock development instructors of the Department of Animal Production and Health, North Western Province.

The course addressed the areas of milk processing machines, farm implements and forage machinery and milking machine selection, use and maintenance. Feedback of the trainees was highly positive and they suggested few areas for further trainings.

Dr. K.F.S.T. Silva , Dr. A.K. Karunaratne, Mr. B.M.P Mahipala, Mr. C. Vidyaratne and Mr. F. H.C.A. Silva served as resource persons. The program was coordinated by Dr. A.K. Karunaratne, Senior Lecturer, Department of Agricultural Engineering, Faculty of Agriculture.

Curriculum Revision Workshop- B/S in Agricultural Economics



The above Board of Study conducted a stakeholder meeting on 6 December, 2019 at Hanthana Tea Research Institute to revise the curriculum of M.Sc. in Agriculture Economics, M.Sc. degrees in Environmental Economics and Natural Resource Management.

The workshop was sponsored by the Postgraduate Institute of Agriculture and around 20 teaching panel members attended the workshop.

CONFERENCES, SEMINARS AND WORKSHOPS Contd.

Workshop on Public Procurement Procedures for PGIA Staff

Workshop on “Public Procurement Procedures” was conducted for the staff of the PGIA on 29 May at the PGIA Board Room.

Mr. Anura Lokugamage, a Senior Consultant from Sri Lanka Institute of Development Administration (SLIDA) participated the workshop as the Resource person. Workshop content included Government Procurement Procedure & Procurement Methods,

Limits & Bid Evaluation Process, Contract Management, Payment Process and Practical Problems in Current Procurement Activities.



CAPNET LANKA - PGIA PROJECT HOLDS SEVERAL ACTIVITIES....

PGIA Junior Water Awards-Aqua Republica - 2019

Aqua Republica, a connective programme of PGIA Junior Water Awards for Innovations and Knowledge Management was held for school children by Cap-Net Lanka. St. Sylvester's College, Kandy and Rambewa Central College, Anuradhapura



were awarded Trophies and Certificates by the Director, PGIA at the Symposium on “Urban Water and Coastal Zone Management” held in the International Water Management Institute (IWMI), on 28 November 2019. Students of Rambewa Central College have obtained a score of 246,858 which was the highest score achieved since the competition was introduced in Sri Lanka by Cap-Net Lanka in 2016.

Watershed Management for Hill Country in Sri Lanka



Two-day residential workshop on Watershed Management for Hill Country in Sri Lanka was organized by Cap-Net Lanka in collaboration with World Vision Lanka on 25 and 26 November 2019 at Sathyodaya Educational Training Centre, Kandy. A total of 25 participants including 20 females participated the programme.



CONFERENCES, SEMINARS AND WORKSHOPS Contd.

World Water Day 2019



Ms. Gimhani Pabodha, an IWRM masters student of the PGIA, University of Peradeniya made a demonstration of Aqua Republica (watershed management game) to the school children. Prof. C.M.B. Dematawewa, Director, Postgraduate Institute of Agriculture and Dr. R.S.K. Keerthisena, Additional Director General (Research), Department of Agriculture addressed the gathering. The programme was coordinated by Dr. S. Pathmarajah, Country Coordinator, Cap-Net Lanka.

A half a day programme for 11 government schools children in Kandy district was held at the Plant Genetic Resources Centre (PGRC), Ganoruwa, Peradeniya on 22 March 2019 to mark the World Water Day. More than 100 participants including 87 advanced level school children and 09 teachers participated the programme. Mr. C.K. Wickramathunga, Assistant Director of Agriculture, Department of Agriculture, Mr. A.L.M. Sharudeen, Additional Provincial Director of Education, Kandy, and Prof. E.R.N. Gunawardena, Faculty of Agriculture, University of Peradeniya served as resource persons.



Technological and Cropping Options to Mitigate Impacts of Climate Change

Two programmes on “Technological and Cropping Options to Mitigate Impacts of Climate Change” was conducted in two northern districts was organized by Sri Lanka Water Partnership (SLWP) and Cap-Net Lanka on the 18 March 2019 at the District Agriculture Training Centre, Jaffna and on 19 March 2019 at the District Agriculture Training Centre, Kilinochchi. Around 65 participants including officers and farmer representatives participated in each Programme.

Mrs. Kailesvaran, District Director of Agriculture, Jaffna, Mr. A. Selvarajah District Director of Agriculture, Killinochchi, Dr. M.S. Nijamudeen, Principal Scientist, Department of Agriculture and Mr. S Shanmuhanthan, Deputy Chief Secretary, Northern Provincial Council served at resource persons. Mr. Vethanahayan, District Secretary, Jaffna also addressed the audience.

Climate Change Adaptation Programme for Farmer Leaders



A Climate Change Adaptation (CCA) programme for farmer organization leaders of Bathalagoda, Hakwatuna oya and Kimbulwana oya major irrigation schemes (Deduru oya basin) was held at the Rice Research and Development Institute (RRDI) Bathalagoda on 22nd July 2019.



A total of 81 participated including 63 FO representatives of the above schemes, Development Officers of the 3 schemes and Resident Project Manager Batahalagoda. Dr. S Pathmarajah and 4 graduate students from PGIA attended the Programme. The programme included a field visit conducted by Mr. Rohana Thilakasiri Principal Agriculturist of RRDI.

CONFERENCES, SEMINARS AND WORKSHOPS Contd.

Hands on training on Aqua Republica

Hands-on trainings on watershed management game for School children and teachers were held in Anuradhapura and Kandy Districts on 30 October and 08 November 2019, respectively. A total of 50 school children including 13 females and 10 teachers were trained. IWRM students of the PGIA served as resource persons.



Capacity Building of the Leaders of Community Based Water Societies



Two programmes were organized in collaboration with Cap-Net Lanka and WASO Project of the University of Jaffna for the Leaders of the Community Based Water Societies. Programmes were conducted on 23 and 30 November 2019 in Badulla and Nuwara Eliya Districts, respectively.

Altogether 89 participants (48 males and 41 females) attended the Badulla Programme and 75 participants (37 males and 38 females) attended the Nuwara Eliya programme.

MELP of the ToT (WASH) Programme for Local Animators – Participants' Reflection

A half-day programme to evaluate the outcomes of the training programme on Training of Trainers for implementation of Hygiene Education and Promotion at rural level was organized by Cap-Net Lanka in collaboration with World Vision Lanka (WVL). The programme was held on the 24 October 2019 in Green Hill Hotel, Hatton. A total of 24 including 10 females participated. The programme was based on both written feedback and discussions on opportunities and constraints for knowledge sharing. Dr. S. Pathmarajah, Country Coordinator, Cap-Net Lanka organized the programme.



CONFERENCES, SEMINARS AND WORKSHOPS Contd.

Symposium on Urban Water and Coastal Zone Management

To align with UNDP's "Water and Ocean Governance Programme", the above symposium was organized by Cap-Net Lanka in collaboration with the PGIA, Water Resources Science and Technology (WRST) and Lanka Jalani (Sri Lanka Water Partnership) on the 28 November 2019 at the International Water management Institute (IWMI), Colombo, Sri Lanka. The event was attended by more than 50 participants from relevant institutions. Dr. S. Pathmarajah, Country Manager, Cap-Net Lanka coordinated the event.



Mr. Lim Chow Hoc, Manager, MyCDNet, Malaysia delivered a guest speech on Coastal Reservoirs. Dr. Terni Pradeep Kumara, General Manager, Marine Environment Protection Authority (MEPA) delivered a key note speech on "Marine Pollution" and Mr. Gamini Hewage, Director, Coastal Resource Management of the Cost Conservation Department (CCD) made an invited presentation on "Coastal Water Pollution and Management Interventions".

A panel discussion on Issues and Essence of Urban Water and Coastal Zone Management was held with the participation of managerial level officials from Government and Non-governmental organizations. Altogether, six invited presentations were made in the Technical Sessions in the afternoon.

The symposium recognized that policies and plans to protect the urban waters and coastal zones are already available; what is lacking is action which require political will and financial assistance.



CONFERENCES, SEMINARS AND WORKSHOPS Contd.

Climate Change Adaptation Programme for Government Officers

Cap-Net Lanka together with the Sri Lanka Water Partnership (SLWP) organized a one-day training programme for 61 government officers of the Irrigation Department (ID) including Engineering Assistants, Development Officers, Work Supervisors and Senior Anicut Gate Keepers at the Zonal Reception Hall, Nittambuwa (Gampaha District) on the 13 June 2019.

Senior Officials from the Department of Meteorology, Ministry of Agriculture, and Irrigation Department served as resource persons. The program was organized by the Director, Irrigation Department, Gampaha and coordinated by Mr. Ranjith Rathnayake, Country Coordinator, SLWP.

Ayesha participated in International Summer School for the United Nation's SDGs



Ms. Ayesha Warnasooriya a student of the B/S in Crop Science participated in the “International Summer School for the United Nation's Sustainable Development Goals (SDGs) in Hiroshima-2018” Hiroshima University, Japan from 24 September to 03 October 2018. The event was sponsored under the Japan-Asia Youth Exchange program in Science of Japan Science and Technology Agency.

She made a presentation on **“Enhancing production stability of tropical fruits through variety selection and propagation”** based on her research project, conducted under the supervision of Prof. W.A.P. Weerakkody. Recently improved technologies for sustainable fruit production in Sri Lanka directly relate to the SDG, ‘Food and Nutritional Security’ contributed a lot to the conference.



SAWA regional workshop held in Kathmandu, Nepal



Prof. N.D.K. Dayawansa, the IDRC-SAWA Coordinator and three SAWA fellows following M.Sc. (Coursework & Research) in Integrated Water Resources Management (2018/2019) attended the workshop on ‘Leadership and research methods for interdisciplinary water research’ organized by SaciWATERS, Hyderabad, India in partnership with Nepal Engineering College from 24 August to 5 September 2018 in Nepal.

The aim of this workshop was to impart training on leadership building, climate change, gender, theoretical and methodological frameworks for interdisciplinary water research. SAWA Fellows and coordinators of Nepal Engineering College, Anna University, Chennai, India and BUET, Bangladesh also attended the workshop.

Master of Science (M.Sc.)/ Postgraduate Diploma (PGD) Pass List - 2019

B/S in Agricultural Biology - M.Sc.

D.M.L.N.K. Dissanayake
G. Hariharan
D.Y. Jayasinghe

M.S. Malika
M. Nethaji
N. Sanotharan

J.K.A. De Silva
S. Selvaraj
G. Vaikunthanathan

B/S in Agricultural Economics - M.Sc.

S.M. Amarathunga
E.G.C.D. Bandara
K.R.S. Chathurangi
K.G.P.N. Gamage
B. M. A. Guruge
J.R.S.R. Jayakody

B.M.N.C. Karunarathna
S. Kirubananda
M.M. Kumari
L.L.U. Mandakini
H.K.R. Manori
H.P.M.K.S.S. Pathiraja

M.N.T. Peiris
R.M.H. Rathnayaka
S.T. Ratnayake
S. Srishankar
K. Sivapatham
Y.S.M.M.P. Yallarawa

B/S in Agricultural Engineering

M.Sc.

W.A.S. Anuradha
Bandara B.E.S.
H.S.N.M. Caldera
M.P. Charithangi
A.A.K.N. Dias
E.D.V.S.L. Edirisinghe
K.Y.B. Gamagedara
L.H.S.D. Gunarathne

R.P. Gunawardhana
I.K.K.G. Ihalakodippily
A.U. Iddawela
V. Jeevaratnam
J. Kamsika
K. Mathusuthan
E.P.R.H.H.W. Nilmalgoda

P. Ramanan
S.M. Shifar
K. Sarangan
T. Sathyendra
E. Suganya
V.V.D.N.G. Vidanage
W.M.A.K. Wijekoon

PGD

R.P. Gunawardhana

B/S in Agricultural Extension

M.Sc.

I.C. Abeynayake
B. Suthan
E. Basnagala
L.H.D.H.K. Lakshman
A. Lawrence
T.M.S.C. Menike

A.S. Marasinghe
S.C.E. Narangaspitiya
E.A. Ninthussha
G.S. Pradeep
B.D.P. Rangoda

R.M.D.C. Rathnayake
S.G.V.J.N. Senarath
C.P. Upathakumbura
W.N.K. Wehalla
Withanage S.D.

B/S in Animal Science

M.Sc.

W.M.D.R. Bakmeewewa
C.N.K. Balasooriya
S.L.C.A. Dharmaratna
S.S. Hettiarachchi
M.R.B.G.T.K. Jayasinghe

M.P.G.H.P. Keerthirathne
A.M.C.P. Kumara
M.H.M.M.T. Maddegoda
D.D.R. Padmalal

N. Sanotharan
Y.G.M.P. Senadheera
M.J.S.M.S. Shariff
M.G.C.C. Vidyarthna

PGD

R.P. Gunawardhana

B/S in Bio Statistics**M.Sc.**

A.G.K.N. Alupotha
F.F. Farook
H.K.W.K.K. Hitibandara

J.M.D.R. Jayawardana
B. Odoi

G.G.S. Ranasinghe
M.M.T.D.M. Wilgamuwa

PGD

N.C. Weeraratne
B.K.W. Priyanath

B/S in Crop Science**M.Sc.**

M.P. Ariyaratne
R.D.S.M. Bandara
R.M.S.R. Chamara
D.L.J.P. Gunathilake
W.M.D.K. Ethulgama
G.R.P.I. Abeysiri
H.M.K.I. Herath
J.M.C.K.K. Jayasundara

K.A.M.Y.C. Jayathissa
R.M.S.P. Karunadasa
B.H.K.T. Kumari
M.W.R.G. Monarawila
N.M.G.D.N. Menike
P. Eliyathamby
A. Perinparasa
R.J. Rathnayake

R.M.S.J. Rathnayake
T.M.N.B.K. Thotagodawatta
U.M.C.S. Udagedara
W.J.H.W. Dinoshanee
W.M.J.B. Wijesinghe
W.K.S.W. Watawala
K.A.N. Wijesinghe

PGD

I.L.F. Ameen

B/S in Food Science & Technology**M.Sc.**

M.C.L. Aththanayake
P.P.G.S.P. Bandara
L. Chandana
D.D.T.L. Gnanasena
L.A. Gunathilaka
S.A.K.D. Hemantha
H.M.R. Hemanthika
M.P.D.J. Jayamali
J.M.C.D. Jayathilake
P.G.T.T. Lakmali
M.H.G.C. Mapa

K. Navaratnarajah
A.P.C.S. Pathirana
P.D.S. Peragasthenna
W.A.M. Piyaruwan
S. Ramamoorthy
R.A.G.W. Rathnayaka
H.P.D. Srimali
E.W.S. Samanmali
S.R.A.N.A. Samaratunge
S.H.M.P. Senanayake

T.S.M. Thilakarathna
S.A.D. Maduwanthi
J.Y.K. Udayadiwakara
I.H.R. Uthpala
N.P. Waidyarathne
W.V.V.R. Weerasingha
L.R.S.P. Wijebandara
G.E.S. Wimalasiri
T.M.A.N. Weerasinghe
W.M.R.D.H. Welikala

PGD

H.A.C. Hettiarachchi
K.P.W. Kahandawa
D.I.U.K. Karannagoda
C.W. Madage
K.G.D. Prasadi
P.S.M. Ranaweera

B/S in Plant Protection**M.Sc.**

N.N. Abeysekara
A.A.I.M. Amarasinghe
V.N.D. Bulathsinhalage

Y. Kulasingam
T.P. Madusani
R.M.C. Udeshini

H.R.M.A.S. Premarathna
S.P.D.S. Weerasinghe

PGD

S.A.S.M. Silva
N.T. Warnakula

B/S in Soil Science**M.Sc.**

R.G.N.B. Gunawardhana

S. Senthuran

V.A.N. Wickramasinghe

PGD

K.A.C. Jeewandarie

Master of Business Administration (MBA)/ Postgraduate Diploma (PGD) Pass List - 2019

B/S in Business Administration

MBA

R.W.M.K.G.D.N. Amunugama
B.M.S. Balasuriya
K.K.G.J. Bandara
K.M.R.C. Bandara
P.M.U.S.B. Bulumulla
H.M.U.C. Bandara
M.S.K. Doolwala
D.C.G.M. Galapita

K.A.K. Geethanjalie
B.H.M.P.K. Herath
H.M.G.B. Herath
N.A.R.S. Jayarathne
I. Karunanayake
G.M.M.R.K.B. Karunarathne
P.H.G.T.D. Nawaratna
M.F. Nizamdeen

M.D.D. Perera
M.N.C. Piyathilaka
Y. Rajany
K. Suparaajuthan
C.S. Thanthirige
M.I. Upendra
W.M.S.S. Waliisinghe
W.M.J.B. Wijesinghe

PGD

J.A.N.E. Jayasinghe
B.M.D.S. Bandara
K. Meegoda

L.W.C. Mihiruk
M.N.T. Mohamed

R.M.D.S.P. Mahanama
K.M.T.D. Wijedasa

SOCIAL EVENTS

Blessing for New year - A Dhamma Sermon

As the year 2019 is dawning, PGIA staff commenced their work on the 1st of January with the Blessing of the noble triple Gem. A dhamma sermon was organized by the PGIA staff before commencing the office works for the new year.



Aurudu Ulela 2019

Avurudu is the perfect time to shed all ethnic, religious & political differences and support endeavours to establish lasting peace. With the aim of strengthening the unity and peace among the staff, Welfare Society of the PGIA organized the Sinhala & Tamil New Year Festival 2019 at the PGIA premises on 5 June 2019. PGIA staff and their families joined in the event and had a great time enjoying a series of games and sharing happiness with each other.



Computer Donation to Schools

Welfare Society of the PGIA staff donated 23 desktop computers to 12 selected needy schools with the aim of exposing the students to new technology and thereby make a confident student. Computer donation was done at the PGIA auditorium in May 2019. PGIA staff and the teachers representing the schools participated to this occasion.



MBA Padura



The MBA Padura organized by the MBA Batch of 2018 was held successfully on 21 December 2019 at the PGIA. This event brought all the lecturers, current students and past students together for a fun-filled evening with music and dance. This event is an annual event in the MBA Association Calender.

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