

Contents

Preface.....	iii
Message from the Chief Guest.....	vi
Message from the Vice Chancellor	vii
Message from the Dean	viii
Message from the Coordinator of the Symposium.....	ix
Keynote Speech of the Inaugural Session.....	xiii
Paper Index	xxi
Technical Sessions	
Plant Resource Management.....	11
Soil and Water Management	96
Economics and Social Sciences.....	147
Innovative Technologies.....	203
Food and Nutrition.....	229
Aquaculture and Livestock.....	265
ISAE 2016 - Organizing Committee.....	288
Sponsors of the ISAE 2016.....	290

Paper index

Abstracts of the papers selected to be published as full papers in the TARE journal

Ratoonability of Some Commercial Sugarcane Varieties under Irrigated and Rain-fed Conditions in Uda Walawe Sri Lanka ALC De Silva and WAJM De Costa	3
Effects of inorganic phosphorus fractions under different tillage practices on wheat (<i>Triticum aestivum</i>) in an acid soil of West Bengal (India) K Mandal and D Mukhopadhyay	4
Plant Growth Regulators for In-vitro Direct Plant Regeneration from Sugarcane (<i>Saccharum</i> spp. hybrid) Leaf Tissues BRMGWDN Balagalla, A Wijesuriya, NP Ranathunge and AMMS Perera	5
Exogenous nitric oxide donor sodium nitroprusside enhanced growth attributes of polybagged rubber (<i>Hevea brasiliensis</i>) seedlings NMC Nayanakantha, NN Hettiarachchi, AMWK Senevirathna, and P Seneviratne	6
Effect of Parboiling on Minerals and Heavy Metal contents of Selected Sri Lankan Traditional Rice Varieties Grown under Organic Farming TI Kariyawasam, PI Godakumbura, MAB Prashantha, and GAS Premakumara	7
Academic performance and the perception about the educational environment: A comparison between ethnic minority and majority students following three Degree programs WTS Maduwanthi, SKK Mudalige, and NSBM Atapattu	8
Assessing Consumer Demand for Food Quality Certification: Case of "HACCP Certified Eggs" RMS Ranasinghe, UK Jayasinghe-Mudalige, LDMN Lokuge, JC Edirisinghe, TPSR Guruge, JMM Udugama and HMLK Herath	9
Impact of Temporal Changes of Rainfall on Major Climatic Zones of Sri Lanka AD Ampitiyawatta and AW Wijeratne	10

Plant Resource Management

A Corrective Measure to Problematic Conventional Agricultural Approach (Keynote Speech) Gamini Seneviratne	13
Effects of Soil Moisture Stress on the Nitrate Reductase Activity of Selected Chilli (<i>Capsicum annuum</i> L.) Cultivars during the Flowering Stage and its Impact on Yield S Mahendran and N Sujirtha	17
Parasitism efficiency of Trichogramma embryophagum (Hymenoptera: Trichogrammatidae) on the eggs of brinjal shoot and fruit borer, Leucinodes orbonalis (Lepidoptera: Crambidae) RF Niranjana , M Devi , W Shanika and RP Sridhar	20

Survival and Development of <i>Menochilus sexmaculatus</i> (Fabricious) (Coleoptera: Coccinellidae) Larvae on Formulated Diet: An Attempt for Mass Rearing	TDC Priyadarshani, KS Hemachandra, UGAI Sirisena and HNP Wijayagunasekara	23
Physiological indices for salt tolerance of lipo-chitooligosaccharide primed maize	UN Dhandayuthapani and E Somasundaram	26
Allelopathic Potential of <i>Lantana camara</i> (L.) and <i>Parthenium hysterophorus</i> (L.) Weeds on Germination and Growth Behaviour of <i>Thespesia populnea</i> (L.)	M Senthivelu, P Thiruppathi and AC Surya Prabha	29
Different Latex Harvesting Systems and Their Impact on Bark Consumption and Economic Lifespan of Rubber Plantations in Sri Lanka	TUK Silva, AMWK Senevirathna, P Seneviratne and WAJM De Costa	33
Correlation among Agronomic Characteristics and their Contribution for the Yield Improvement in F4 Generation of Cowpea (<i>Vigna unguiculata</i> (L.) Walp)	MC Millawithanachchi, VA Sumanasinghe, AP Bentota and NT Prethapasinghe	36
Efficacy of five selected bacterial antagonists in suppressing foliar colonization of <i>Colletotrichum truncatum</i> on <i>Capsicum annuum</i>	HBP Sandani, NP Ranathunge, PLN Lakshman and WMW Weerakoon.....	40
Germination Behavior of Selected Improved Rice Varieties under Salt Stress	APT Subhashi, HLC Himanda, and D Ratnasekera.....	44
Synthetic Seed Production in <i>Chirita zeylanica</i> as a Conservation Method	HN Aluthgamage, HMI Herath, DLCK Fonseka	46
Screening and Evaluation of the potential use of <i>Fusarium</i> spp., for effective stimulation of resin production in <i>Gyrinops walla</i>	BGR Madushanka, NP Ranathunge, HKMS Kumarasingha, HBP Sandani	49
Effect of four plant-based soil amendments on root knot nematode species, <i>Meloidogyne incognita</i>, infesting tomato plants	KJ Thalagala and WTSD Premachandra.....	53
Effect of different forms of keppetiya (<i>Croton aromaticus</i> L.) leaves on promotion of ripening in banana variety Embul	WAH Champa, RMRNK Ratnayake, MM Herath, BMKS Tilakaratne, DMCC Gunathilake and UG Chandrajith.....	56
Evaluation of Indigenous Organic Foliar Nutrition (Panchagavya) in Maize Based Cropping System	E Somasundaram and V Sathya.....	59
Effect of Substrate Mixture on the Growth Performance of Ornamental Aquatic Plant <i>Echinodorus bleherae</i> "Broad leaved Amazon Swords"	MSS Sandamini and K Radampola.....	62
Nod factor (Lipo-chito oligosaccharide) induced Salt Tolerance of Maize	E Somasundaram and UN Dhandayuthapani.....	64
Influence of Organic Manures and Spacing on Herbage Yield in Tulsi (<i>Ocimum sanctum</i> L.)	S Sukumar, V Swaminathan, P Arularasu	67

Morphological variations of twelve accessions of the Traditional rice, Heenati, deposited at the Plant Genetic Resource Center, Sri Lanka	69
GWDK Jayasinghe, AL Ranawake, SGJN Senanayake	69
Evaluation of two Bacterial Antagonists in Controlling Tomato Damping off Pathogen, <i>Rhizoctonia solani</i> under In Vitro and In Vivo conditions	73
MI Dilhani, HBP Sandani, NP Ranathunge.....	73
In vitro Establishment and Browning Control of Cinnamon Nodal Explants from Field-Grown Plants (<i>Cinnamomumverum: Sri Gamunu and Sri Vijaya</i>)	76
DLCK Fonseka and APA Bandusiri.....	76
Review on Potential for Keyhole Gardening Concept in Sri Lanka	79
APS Chathurika, PCD Perera and LDM Zoysa	79
Awareness about <i>Exacum</i> species (Binara/Ginihiriya) Among the University Students of Sri Lanka	82
PCD Perera and N Dahanayake	82
Effect of Pre-sowing Seed Treatments on Drought Tolerance of Rice (<i>Oryza sativa L.</i>) Seedlings	85
GAH Galahitigama and DL Wathugala.....	85
Morphological Diversity of wild rice (<i>O. nivara</i> S.D. Sharma and Shastry) accessions in Sri Lanka	88
D Ratnasekera, APT Subhashi, T Eledchumysankar, K Jesuthasan, K Thananjeyan, V Vairavanathan and R Rajapakse	88
Evaluation of the Crop Establishment methods for Submerge Tolerant Rice Variety: Bg455 under Waterlogged Conditions	91
MGN Rupasinghe and KMS De Silva.....	91
Determination of Critical Weed Free Period for Peanut Cultivation in Hambantota Area in Sri Lanka	94
DPP Liyanage, LG Malanie, WAC Ruwan and DLD Lakmali	94
Soil and Water Management	
Decomposition of Soil Organic Component under Organic Rice Cultivation in Bali, Indonesia (Keynote Speech)	98
Nobuo Sakagami	98
Effect of Sulphur Fertilization on Different Forms of Sulphur in the Soil under Mustard Cultivation in Terai Region of West Bengal, India	103
S Rakesh and GC Banik	103
Phytoextraction of Nickel from Contaminated soils by Employing Bioamendments	106
V Sathya, S Mahimairaja and A Bharani.....	106
Status of Wetlands of Urban Coimbatore, Tamil Nadu and Their Characterization	109
A Bharani, P Gopinathan and S Mahimairaja.....	109
Influence of Integrated Nutrient Sources on Agronomic Traits of Maize	112
V Kalaiyarasan, DU Nandhini and K Udhayakumar	112

Enzyme activity of Bt cotton grown soils as influenced by bio-fertilizers and foliar application of nutrition	114
T Laxman, T Ramprakash, K Avil Kumar and A Srinivas	
Nitrogen and Phosphorous Dynamics and Water Purification Ability of Vegetation and Soil in Uma Oya Catchment	118
RMIS Rajapaksha, EPN Udayakumara, JMCK Jayawardana	
Assessment of Lead and Cadmium Levels in Selected Soils of Anuradhapura District of Sri Lanka	121
S Vijayakumar, RR Ratnayake, and N Gnanavelraja	
Effects of different forms of Palmyrah coir dust as soil amendments on some physical and chemical characters of calcic red yellow latasole soil and the yield of <i>Capsicum annum</i>	124
G Tharani, N Gnanavelraja, AM Nilushiny and S Srivijeindran	
Impact of Sulphate of Potash and Partially Burned Paddy Husk on soil pH, electrical conductivity and plant phosphorus content in saline paddy soil	127
M Kanimoly and P Premanandarajah.....	
Distribution of selected soil properties under different land use patterns in Terai region of West Bengal (India)	130
D Pal, PK Patra and D Mukhopadhyay	
Effect of Soil Erosion on Water Quality of Streams in Badulu Oya Watershed in Sri Lanka	133
WMNS Wijesinghe, JMCK Jayawardana and EPN Udayakumara	
Quantitative Assessment of Soil Erosion and its Association with River Health of Uma Oya Watershed, Sri Lanka	137
RNN Weerasinghe JMCK Jayawardana and EPN Udayakumara	
Comparison of Heavy Mineral Composition along Mahaweli River with Placer Deposits at North East Coast of Sri Lanka	141
RML Udarika, EPN Udayakumara, K Amalan, NP Ratnayake and HMR Premasiri	
Effects of Inorganic Soluble Phosphate on Phosphate Solubilization and Acid Phosphatase Activity of the Bacterial Strain <i>Pantoea agglomerans</i>, Isolated from Soil	144
BC Walpola and KKIU Arunakumara	

Economics and Social Sciences

India's Bioeconomy: A Brief Overview of the Status, Challenges and Opportunities (Keynote Speech)	149
Jeena T Srinivasan	
Consumer Demand for Food Quality: A Study Exploring the Search, Experience and Credence Attributes of Powdered Milk	154
MDSG Piyathilaka, UK Jayasinghe-Mudalige, LDMN Lokuge, JMM Udugama, JC Edirisinghe and HMLK Herath	
Farmers Perception on Cultivating Medicinal Plants as an Agribusiness Venture: A Study at Pambahinna Agrarian Services Division	157
TM Liyanagamage, IC Hettiarachchi, P Sivashankar, RP Mahaliyanaarachchi	

Impact of Home Gardening on Food Security among Households: A Case Study in Kandy District, Sri Lanka	160
ST Ratnayake, NR Abeynayake, and KDRR Silva	
Factors Affecting the Popularity of Selected Underutilized Fruits within Urban Households: Evidence from Maharagama Divisional Secretariat Division	164
GDDM Rangani, RP Mahaliyanaarachchi, P Sivashankar, IC Hettiarachchi and BES Bandara	
Factors Affecting the Expansion of Micro-enterprises: A SWOT Analysis on Cottage Level Rice Processing	167
CAK Dissanayake, LAS De Silva, WMCB Wasala, BMKS Thilakarathne	
Potential of Mobile Communication for Agricultural Knowledge Sharing: Exploring the Case of Ginger Farmers in the Kurunegala District	170
HACK Jayathilake, UK Jayasinghe-Mudalige, LDRD Perera, GA Gow, N Waidyanatha, LMJK Lindara and T Barlett	
A Study on the Present Situation of Dairy Farming Practices in Divisional Secretariat Division of Kamburupitiya, Matara District, Sri Lanka	173
A Manawadu, APS Chathurika, DSP Munasinghe, MAMI Perera, SM Opatha, KN Kaumudu, LDM Zoysa	
Key Indicators of Decision Making Style of Urban Consumers in the Purchase of Flavored Yoghurt	176
AMIP Abeysinghe, HSR Rosairo, JPNW Kumari	
Consumer Responses to Perceptions of DCD in Milk Powder: A Case Study in the Southern Province of Sri Lanka	179
LM Abeywickrama MI Dilhani and SSM Peramunagama	
Value Chain Management of Moringa (<i>Moringa oleifera</i>): A Case Study in Ratnapura District	181
TM Liyanagamage, DAM De Silva and P O'Reilly.....	
Purchasing and Consumption Patterns of Green Leafy Vegetables in Maharagama Divisional Secretariat in Colombo District, Sri Lanka	184
LNS De Silva, RP Mahaliyanaarachchi, and P Sivashankar	
Potential of Improving Rural Livelihood through Mushroom Production: A Case Study of Kamburupitiya Ekamuthu Bimmal Samajaya	187
DTPS Dharmawardhana, LM Abeywickrama, SGY Aravinda and PSH Pelpola	
An overview of Sri Lankan Ginger Export Market and Prevailing Barriers for Exports	189
UPM De Silva, M De Zoysa, and IN Wanasinghe	
Kandyan Home Gardens and Rural Economy: Case of Athipola Village in Matale District	192
APS Fernando, MIK Athipola, GAS Ginigaddara and SP Dissanayaka.....	
Income Creation and Distribution along the Value Chain: A Case of Finger Millet Value Chain in Hambanthota District	195
MGNA Wijewardhana, DAM De Silva, P O'Reilly	
Awareness and the use of Open Educational Resources (OERs) among Academics and Students in Teaching-Learning process: A case study at Faculty of Agriculture, University of Ruhuna, Sri Lanka	198
MEKK Fernando, UPM De Silva, APS Chathurika, N De Silva, AL Abeywickrama	

Effect of Consumer Accused Product Harm on Consumer Moral Reputation	
GC Samaraweera	201

Innovative Technologies

In Need of Innovations: Research into Rupees (Keynote Speech)	
Ajith de Alwis.....	205
A Simple and Reliable Unstructured Data Synchronization Technique for Biogas Data	
KKLB Adikaram, MA Hussein, M Effenberger, T Becker	206
Evaluation of the Efficacy of Deltamethrin Incorporated Polysack Bags for the Control of Stored Grain Pests of Maize during Storage	
WMCB Wasala, CAK Dissanayake, CR Gunawardhane , RMNA Wijewardhane, DMCC Gunathilake, and BMKS Thilakarathne.....	209
Determinations of Optimum Pyrolysis Conditions for Producing Refuse Tea Biochar	
HAHI Amarasinghe, SK Gunathilake and AK Karunaratna.....	212
Mechanization of Growing Media Preparation and Poly Bags Filling in Oyster Mushroom (<i>Pleurotus ostreatus</i>) Cultivation	
PD Kahandage, CP Rupasinghe, GVTW Weerasooriya and PLAG Alwis	215
Mechanization of Palmyrah peeling process to promote Palmyrah based products	
DPL Perera, M Rambanda, PD Kahandage	218
Modification and Evaluation of Parboiling Wastewater Discharge System for Minimizing the Effluent Volume to Be Treated In Rice Processing	
HMAP Rathnayake , WMCB Wasala, TMR Dissanayake , , DMSP Bandara and DP Senanayake	221
Design and Performance Evaluation of an Active Solar Dryer for Cinnamon Quills	
HKSR Sampath, CP Rupasinghe and MGG Awanthi	225

Food and Nutrition

On the Hybrid Approaches for Innovative Process Analysis Technology (Keynote Speech)	
Mohamed Hussein	231
Utilization of sweet potato (<i>Ipomoea batatas</i>) flour as an alternative for wheat flour in bun preparation	
RMNA Wijewardane, MSMF Asfana, S Ranadeera, DMRT Dissanayake, WMCB Wasala, BMKS Thilakarathne	235
Lipogenesis inhibition by water-soluble components from Monascus-fermented rice on 3T3-L1 cells	
IP Wanninaika, , H Asato, H Toyama, , S Tachibana,	238
Effect of Furnacing Time Periods and Temperature on the Purity Quick Lime for the Production of Palmyrah Jaggery	
S Mary and S Srivijeindran	241

Development of Instant Pudding Mix Incorporated with Palmyrah (<i>Borassus flabellifer</i>) Boiled Seed Shoot Flour	.....	244
A Marinkumar , AM Nilushiny, MCN Jeyasooriya and S Srivijeindran		
Antioxidant Activity of Thebu (<i>Costus speciosus</i>) Rhizome and Leaves	.....	247
SHNT Suwendarathna, P Ranasinghe, U Binduhewa, PABN Perumpuli.....		
Development and Sensory Assessment of Ginger (<i>Zingiber officinale</i>), Lime (<i>Citrus aurantifolia</i>) and Palmyra Sugar Candy incorporated Ready-to-Serve Functional Beverage	.....	250
G Hariharan and T Mahendran		
A Study on Quantitative and Qualitative Characteristics of Fruit Wine Produced from <i>Syzygium cumini</i> (Maadan)	.....	253
KGD Prasadi, PLN Lakshman, KH Sarananda		
Development of a Mushroom curry ball as an Alternative protein source for Vegetarians	.....	256
GSN Fernando, PABN Perumpuli, SHNT Suwendarathna, KGD Prasadi, and V Wijeratne.....		
Development of a Jam Using Bilin Fruit (<i>Averrhoa Bilimbi L.</i>) And Evaluation of Its Sensory and Physico-Chemical Properties	.....	259
UG Chandrajith, RMNA Wijewardana, CR Gunawardane, BMKS Tilakaratne.....		
Edible Salt: A Possible Source of Heavy Metal Intake in Sri Lanka	.....	262
WMCJ Wijekoon, MN Kaumal and PABN Perumpuli		

Aquaculture and Livestock

Towards a Knowledge-based Bio-economy: New Challenges, Opportunities and Solutions Livestock Production and Aquaculture (Keynote Speech)	.....	267
MCN Jayasuriya		
Measurement of ileal and excreta endogenous losses of phosphorus in broiler chickens	.....	269
RK Mutucumarana, and V Ravindran		
Effect of different feeding frequencies on the digestibility parameters of Lohi lambs in Pakistan	.....	272
MZ Farooq, M Abdullah , M Younus, S Sattar, N Ahmad, AH Saleem, M Mahmood.....		
Animal Source Food Consumption among Sri Lankans: A 24-Hour Recall Study in Galle and Matara District	.....	275
ADP Prasangika, WTL Fonseka, and NSBM Atapattu		
Effect of Feeding Aqueous Extracts of <i>Sargassum Crassifolium</i> and <i>Ulva Fasciata</i> on Biochemical and Hematological Parameters of Laboratory Mice	.....	279
M Wickramanayake, L Wanasinghe, E Pathirana, RPVJ Rajapakse		
Age Related Changes in Serum Concentrations of Insulin-like Peptide 3 and Testosterone in Male German shepherd Dogs	.....	282
WTL Fonseka, JJWK Gamage, HDA Wimalarathne, IN Pathirana, N Kawate		
Effects of Supplemental Dietary Emulsifier (LIPOSORB) on Growth Performance and Visceral Organ Weight	.....	285
VGS Shanaka, NSBM Atapattu and AASSM Amarasinghe		