

Tropical Agricultural Research

Volume 30 Number 1

Editor-in-Chief
Dr. U.W.A. Vitharana

Postgraduate Institute of Agriculture
University of Peradeniya
Peradeniya, Sri Lanka

November, 2018

Editor-in-Chief

Dr. U.W.A. Vitharana

B.Sc.(Peradeniya, Sri Lanka), M.Sc., Ph.D. (Ghent, Belgium)

Department of Soil Science,

Faculty of Agriculture,

University of Peradeniya,

Peradeniya, Sri Lanka.

Editorial Advisory Board

Prof. P. Abeygunawardena, Former Professor, Texas A & M University, U.S.A

Prof. B.F.A. Basnayake, University of Peradeniya, Sri Lanka

Prof. W.A.J.M. De Costa, University of Peradeniya, Sri Lanka

Prof. D.M.De Costa, University of Peradeniya, Sri Lanka

Dr. H.M.V.G. Herath, University of Peradeniya, Sri Lanka

Prof. A. Hetherington, University of Bristol, United Kingdom

Dr. W. Jenner, Centre for Agriculture and Biosciences International, Switzerland

Prof. D. Kumaragamage, University of Winnipeg Winnipeg, Canada

Dr. B.E.P. Mendis, University of Peradeniya, Sri Lanka

Prof. N. Mukhopadhyay, University of Connecticut, USA

Prof. D. Pavelkova, Tomas Bata University in Zlin, Czech Republic

Prof. R. Pegg, University of Georgia, USA

Dr. B.L. Peiris, University of Peradeniya, Sri Lanka

Dr. N. Sanderatne, Postgraduate Institute of Agriculture, University of Peradeniya

Dr. U.W.A. Vitharana, University of Peradeniya, Sri Lanka

Dr. S. H. Wani, Michigan State University, USA

Prof. W.A.D.P. Wanigasundera, University of Peradeniya, Sri Lanka

Prof. M.P.B. Wijayagunawardhana, University of Peradeniya, Sri Lanka

Editorial Board

Prof. D.U. Ahn, Iowa State University, USA

Prof. J.M.R.S. Bandara, University Brunei Darussalam, Brunei

Dr. R.S. Dharmakeerthi, University of Peradeniya, Sri Lanka

Prof. D. Banks, Duke University, USA

Prof. G.M. Hettiarachchi, University of Kansas, USA

Dr. N. S. Hettiarachchi, University of Arkansas, USA

Prof. V. Hurry, Swedish University of Agricultural Sciences, Sweden

Prof. K. Kawamoto, Saitama University, Japan

Prof. S. Kodithuwakku, University of Peradeniya, Sri Lanka

Dr. J. Lam, Memorial University, Canada

Prof. W.M.T. Madhujith, University of Peradeniya, Sri Lanka

Prof. B. Marambe, University of Peradeniya, Sri Lanka

Prof. J. Prohens, Universitat Politècnica de Valencia, Spain

Prof. G.L.L.P. Silva, University of Peradeniya, Sri Lanka

Prof. R.P. de Silva, University of Peradeniya, Sri Lanka

Prof. C. Sivayoganathan, Emeritus Professor, University of Peradeniya, Sri Lanka

Dr. R. Sulaiman, Centre for Research on Innovation and Science Policy (CRISP), India

Prof. R.O. Thattai, Emeritus Professor, University of Peradeniya, Sri Lanka

Prof. J. Weerahewa, University of Peradeniya, Sri Lanka

Prof. S. Wijesundara, National Institute of Fundamental Studies, Sri Lanka

Prof. C. Wilson, Queensland University of Brisbane, Australia

ISSN: 1016 – 1422

Abstracting and Indexing: The Journal is indexed by CAB Abstracts

© Postgraduate Institute of Agriculture
University of Peradeniya
Peradeniya, Sri Lanka

EDITORIAL

As the Coordinator of 30th Annual Congress of the Postgraduate Institute of Agriculture (PGIA), University of Peradeniya, Sri Lanka, I am pleased to write this Editorial for the 30th volume of the 'Tropical Agricultural Research', which is the official scientific journal of the Postgraduate Institute of Agriculture.

The Congress is an annual, international event which provides a platform to publish findings of postgraduate research carried out in Sri Lanka and elsewhere. The papers submitted channel through a meticulous process of reviewing and the selected papers are presented at the Congress. The journal 'Tropical Agricultural Research' publishes the papers accepted for presentations at the Congress. The volume 30 of the journal contains forty scholarly articles of varying disciplines related to agriculture and allied fields. These includes, food science and nutrition, genetics and plant breeding, germplasm characterization and plant protection, animal science and fisheries, land resource management, agricultural engineering and material sciences and agricultural economics and extension. Initially, the journal was published annually, and since 2009, it has been published quarterly and is accessible online. In the past, the journal 'Tropical Agricultural Research' carried scholarly articles submitted to the annual congress. Moving a step further, the editorial board welcomes submissions throughout the year. Further, submissions can be made throughout the online submission system available at the official website of the PGIA. Over the years, the journal has evolved as an international journal which is now abstracted and indexed in CAB Abstracts.

Many deserve a word of appreciation in supporting me to perform this task as the Editor-in-Chief. I extend my sincere thanks for the guidance and support rendered by the Director/PGIA, the members of the Editorial Board, reviewers and the authors who submitted their research work for publication. I gratefully acknowledge the contribution made by Prof. G.L.L.P. Silva, Dr. A.M.C.P.K. Attanayake, Dr. D.V. Jayatilake, Prof. J. K. Vidanarachchi, Dr. W.S. Dandeniya, Dr. S.M.C. Himali, Dr. A.J. Mohotti, Dr. K.K.S.P. Kodithuwakku, Dr. C.K. Benaragama, and Dr. S.A.C.N. Perera of the Faculty of Agriculture, University of Peradeniya in various ways in preparing the journal on time. Special thanks are due to Mr. Samantha Thilakaratne for his assistance in formatting the journal to this standard. Moreover, I extend my sincere thanks to "Nethvin Printers (Pvt) Ltd." printers' for printing the journal in excellent quality.

*Dr. U.W.A. Vitharana
Editor-in-Chief
November, 2018*