



Indian Journal of Agriculture and Allied Sciences

A Refereed Research Journal

Editorial Board

Editor-in-Chief

Ratnesh Kumar Rao, 194, Karaundi, Banaras Hindu University, Varanasi-221 005, UP, India, E-mail: mrfsw_kvns@yahoo.com, mahimafound@gmail.com, Website: www.mrfsw.org

Editors

Dr. P.K. Sharma, Department of Soil Sc. & Agricultural Chemistry, Institute of Agricultural Sciences., BHU., Varanasi-221005, E-mail : pkssac@gmail.com

Dr. M. Raghuraman, Department of Entomology & Agricultural Zoology, Institute of Agricultural Sciences, BHU, Varanasi, E-mail:raghu_iari@yahoo.com

Associate Editors

Prof. P.Dwivedi, Department of Plant Physiology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India

Prof. Ram Mandir Singh, Department of Farm Engineering, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India

Prof. J.S. Tripathi, Department of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India

Prof. K.R.C. Reddy, Department of Rasa Shastra, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India

Dr. O.P. Mishra, Department of Extension Education, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India

Dr. Y.V. Singh, Department of Soil Sciences and Agricultural Chemistry, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India

Dr. Abhishek Singh, Department of Farm Engineering, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India

Dr. V. Kamalvanshi, Department of Agricultural Economics, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India

Dr. Ram Keval, Department of Entomology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India

Dr. B.K. Sharma, Department of Plant Pathology and Mycology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India

Dr. Neeraj Kumar, Department of Soil Science, NDU&T, Kumarganj, Faizabad

Dr. B.P. Dhyani, Department of Soil Science, SVBU&T, Modipuram, Meerut

Prof. V.K. Rao, Department of Horticulture, GBPUABT, Pantnagar

Dr. P.K. Singh, Nagaland University, Mezhiphera campus, Nagaland

Dr. A.K. Dwivedi, Department of Shalya Tantra, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India

Dr. Sunita Suman, Department of Prasuti Tantra, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India

Dr. Parameswarappa S. Byadgi, Department of Vikriti Vigyan, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University Varanasi, India, E-mail : psbyadgi@rediffmail.com

Dr. Mangalagowri V. Rao, Department of Swasthavritta and Yoga, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India, E-mail : mangowri_rao@yahoo.co.in

Dr. N.S. Tripathi, Department of Kriya Sharir, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India, E-mail : drnstripathi@yahoo.co.in

Dr. Arun A. David, Associate Professor, Department of Soil Science, Allahabad School of Agriculture, SHIATS-DU, Allahabad 211 007, (U.P.), India.

Prof. Shriram Singh, Programme Co-ordinator, KVK, Institute of Agricultural Sciences, Barkaccha, Banaras Hindu University, Mirzapur, Cell: 09450232889, E-mail : srsinghkvk@rediffmail.com

Dr. S.N. Singh, KVK, Institute of Agricultural Sciences, Barkaccha, BHU, Mirzapur-231001, Cell : 09453791916, E-mail : snsingh.agro@gmail.com

Dr. Sanjay K. Shahi, Department of Agricultural Chemistry and Soil Science, Udai Pratap Autonomous College, Varanasi-221 002, E-mail: ssssupc@gmail.com

Dr. Neeraj Kumar, Department of Soil Science, N.D.U.A. & T., Kumarganj, Faizabad

Dr. Shivram Singh, Principal Scientist, Indian Institute of Sugarcane Research, Lucknow

Dr. Ramesh Singh, Department of Plant Pathology, T.D. College, Jaunpur

Dr. J.K. Singh, Department of Agronomy, Institute of Agricultural Sciences, B.H.U., Varanasi

Dr. Anil Kumar Singh, Department of Agronomy, T.D.P.G. College, Jaunpur

Guest Editors

Prof. Bharat B. Aggarwal, Ransom Horne, Jr., Professor of Cancer Research, Professor of Cancer Medicine (Biochemistry) and Chief, Cytokine Research Laboratory, Department of Experimental Therapeutics, The University of Texas M. D. Anderson Cancer Center, 1901 East Road, Unit 1950, Houston, TX 77054, USA, Phone: 713-794-1817, Email: aggarwal@mdanderson.org

Prof. A. Hemantaranjan, *Formerly Head*, FISPP, Department of Plant Physiology, Institute of Agricultural Sciences, BHU, Varanasi 221 005, INDIA, E-mail: hemantaranjan@gmail.com; Phone: 91-542-6702939 (O); 91-542-2575362 (R); Mobile No. +9415302653

Prof. G.C. Mishra, Department of Farm Engineering, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi

Dr. Prashant Srivastava, Demonstration Programme Coordinator, CRC Care Pty Ltd., CRC for Contamination Assessment & Remediation of the Environment, Buiklding X (Environmental Sciences Building), University of South Australia, Mawson Lakes, SA 5095, Australia

Dr. R.S. Jaywardhane, Institute of Indigenous Medicine, University of Colombo, Rajagiriya, Sri Lanka

Dr. Hem Kanti Kultunga, Institute of Indigenous Medicine, University of Colombo, Rajagiriya, Sri Lanka

Dr. R.R. Koirala, Consultant Ayurveda and Yoga Physician. Nepal Ayurveda Society, Tilingtar, Dhapasi-7, Kathmandu, E-mail: ayurveda@wlink.com.np

Dr. Ravi S. Pandey, RAMA-Prema-Sadan, Belvan Mirzapur UP India, Satya Dham RAMA World center of Truth & Peace India, World Health Piety and Peace Center India, University of Missouri Columbia, USA, Distinguished Scientist, Mahima Research Foundation and Social Welfare BHU Varanasi India, Email: dr.rspandey@yahoo.com

Dr. A.A. J. Pushpakumara, B.A.M.S(Hons), M.S(Ay) India B.H.U,PGDHD (faculty Medicine Colombo), PhD(Scholar), Department of Microbiology, Senior lecturer/consultant surgeon, Head of the Department Shalya Shalakya, Gampaha Wickramarachchi Ayurveda Institute, University of kelaniya, Sri Lanka, E-mail : mrsnhkumara@gmail.com

Dr. Simone Hunziker, President, Verband Schweizer Ayurveda-Mediziner und-Therapeuten, 3000 Bern, Tel: +41(0) 32-313-02, asmta@ayurveda-verband.eu, simone.hunziker@ayurveda-verband.eu

Dr. Ajai Kumar Pandey, Department of Kayachikitsa, Faculty of Ayurveda, IMS, BHU, Varanasi

Dr. K.H.H.V.S.S.N. Murthy, Department of Kayachikitsa, Faculty of Ayurveda, IMS, BHU, Varanasi



Indian Journal of Agriculture and Allied Sciences

A Refereed Research Journal

ANNUAL SUBSCRIPTION RATES INCLUSIVE OF AIR MAIL AND HANDLING CHARGES

Membership	India (INR)	Overseas (USD)
Institutional	Rs. 5,000.00	\$ 200.00
Individual	Rs. 1000.00	\$ 100.00
Life Membership	Rs. 10,000.00	\$ 300.00

All payments should be made to the “**Mahima Research Foundation and Social Welfare**”, 194, Karaundi, BHU, Varanasi-221 005, UP, India

Ratnesh Kumar Rao

Editor-in-chief

Mahima Research Foundation and Social Welfare

194, Karaundi, BHU, Varanasi-221 005,

E-mail: mrfsw_kvns@yahoo.com, mahimafound@gmail.com

Website : www.mrfsw.org,

Cell : 09335094154

International Conference on
**Recent Innovations in Ayurvedic Sciences and
Technology (ICRIAST)**

24-25 October, 2015

Venue: Prof. K.N. Udupa Auditorium, IMS, BHU, Varanasi

Important Date: Abstract Submission-10th October 2015



Jointly Organized by:

Mahima Research Foundation & Social Welfare

194, Karaundi, BHU, Varanasi-221005, www.mrfsw.org

E-mail : mrfsw_kvns@yahoo.com, Cell : 09335094154

&



Department of Kayachikitsa, Faculty of Ayurveda, IMS,
Banaras Hindu University, Varanasi

International Conference on
**Frontiers of Plant Sciences & Developing
Technologies (ICFPSDT)**

7-8 November, 2015

Venue: Seminar Hall, Institute of Agricultural Sciences, BHU, Varanasi

Important Date: Abstract Submission-30th October 2015



Organized by:

Mahima Research Foundation & Social Welfare

194, Karaundi, BHU, Varanasi-221005, www.mrfsw.org

E-mail : mrfsw_kvns@yahoo.com, Cell : 09335094154

Conference Secretariat

Ratnesh Kumar Rao

Org. Secretary

Mahima Research Foundation and Social Welfare

194, Karaundi, BHU, Varanasi-221 005, E-mail: mrfsw_kvns@yahoo.com

Website : www.mrfsw.org, Cell : 09335094154



Indian Journal of Agriculture and Allied Sciences

A Refereed Research Journal

Volume: 1

No. 2

Year: 2015

Editor-in-Chief

Ratnesh Kumar Rao

194, Karaundi, Banaras Hindu University,
Varanasi-221 005, UP, India,

E-mail: mrfsw_kvns@yahoo.com, mahimafound@gmail.com,

Website: www.mrfsw.org

Editors

Dr. P.K. Sharma

Department of Soil Science & Agricultural
Chemistry, Institute of Agricultural Sciences,
Banaras Hindu University, Varanasi-221 005,
E-mail: pkssac@gmail.com

Dr. M. Raghuraman

Department Entomology & Agricultural
Zoology, Institute of Agricultural Sciences,
Banaras Hindu University, Varanasi-221 005,
E-mail: raghu_iari@yahoo.com



Published by

Mahima Research Foundation and Social Welfare

194, Karaundi, Banaras Hindu University, Varanasi-221 005, UP, India

Reg. # 643/2007-2008



Indian Journal of Agriculture and Allied Sciences

A Refereed Research Journal

Editorial

The very purpose of the Indian Journal of Agriculture and Allied Sciences (IJAAS) is to bring positive thinking towards the Indian Agriculture, so that they can show their performance on a high level and thus contribute towards the development of the Agriculture as well as national GDP.

The New Vision for Agriculture initiative, led by the Consumer Industries Community of the World Economic Forum, works to develop a shared agenda for action and foster multi-stakeholder collaboration to achieve sustainable agricultural growth through market-based solutions. The initiative has defined a vision that highlights agriculture's potential as a positive driver of food security, environmental sustainability and economic opportunity worldwide. Indian Journal of Agriculture and Allied Sciences (IJAAS) believes that achieving this vision will require the leadership and capacity of all stakeholders—government, business, civil society, academia, farmers and consumers.

The very purpose of the Indian Journal of Agriculture and Allied Sciences (IJAAS) is to bring positive thinking towards the social order, so that they can show their performance on a high level as thus contribute towards the development of the society as well as nation. The main objective of the journal is to present the various types of research paper on Agricultural Sciences and Medical Sciences subjects in front of the readers so that they can have the full knowledge of different aspects of the Agricultural Science and Medical Sciences.

We believe that Indian Journal of Agriculture and Allied Sciences (IJAAS) will be in a position to maintain its standard in future too with the help of all scientists working in agriculture and allied sciences. We intend to present research paper focused on science and technology in the next issue. We always respect your kind suggestion and instruction for the elevation of the journal.

We best wishes

Ratnesh Kumar Rao

Editor-in-Chief

194, Karaundi, Banaras Hindu University,
Varanasi-221 005, UP, India

Volume 1, No. 2
30th June 2015