



Indian Journal of Agriculture and Allied Sciences

A Refereed Research Journal

ISSN 2395-1109

Editorial Board

Editor-in-Chief

Ratnesh Kumar Rao, 194, Karaundi, Banaras Hindu University, Varanasi-221 005, Uttar Pradesh, 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. K. Srivastava, Department of Genetics and Plant Breeding, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India

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. R.K. Patra, Department of Soil Science, OUA&T, Bhubaneswar

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. Raghvendra Singh, Sr. Scientist (Agronomy), ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok-737102, Mob. : 91-9475582991

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. R.N. Meena, Department of Agronomy, 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. U.K. Paswan, Department of Animal Husbandry and Dairying, 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. Alok 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. A.K. Sachan, Department of Soil Science & CS, CSAUA&T, Kanpur

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

Dr. Santhan Barthwal, “Scientist F”, IIRI, Dehradun, Uttarakhand
Dr. A.K. Dwivedi, Department of Shalya Tantra, Faculty of Ayurveda, IMS, BHU, 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: sssupc@gmail.com
Dr. Manoj Kumar Singh, Krishi Vigyan Kendra, Pampoli, East Kameng, Arunachal Pradesh
Dr. Vivek Kumar Pandey, Department of Vegetable Sciences, College of Forestry, Uttarakhand University of Horticulture and Forestry, Uttarakhand, Ranichauri Campus, Tehari Gahwal
Dr. Sanjoy Borthakur, Krishi Vigyan Kendra, Pampoli, East Kameng, Arunachal Pradesh
Dr. Narendra Deo Singh, Krishi Vigyan Kendra, Dirang, West Kameng, Arunachal Pradesh

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, Univ. 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
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



ISSN 2395-1109

Indian Journal of Agriculture and Allied Sciences

A Refereed Research Journal

Volume: 2

No. 1

Year: 2016

Editor-in-Chief

Ratnesh Kumar Rao

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

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

Website: www.mrfs_w.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

ISSN 2395-1109

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 and 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 2, No. 1
31st March, 2016