Current Trends and Advances in Agricultural Sciences

Vol II

Chief Editor

- Mr. Satyanarayan Soni

Editors

- Ms. R. Manisha
- Khushboo Yadav
- Mr. Vikash Tyagi
- Dr. Sujeet Deshmukh
- Dr. Nivetha Thangavel

CURRENT TRENDS AND ADVANCES IN AGRICULTURAL SCIENCES

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PREFACE

"**Current Trends and Advances in Agricultural Sciences Vol. 2**" offers a captivating journey through the forefront of agricultural research and innovation. Through its diverse array of chapters, the volume provides a comprehensive exploration of emerging trends and advancements shaping the agricultural landscape. The chapter on Nano DAP introduces readers to the revolutionary potential of nanotechnology in fertilizer production. By harnessing the unique properties of nanoparticles, this chapter explores how Nano DAP enhances nutrient uptake efficiency, reduces environmental impacts, and improves crop yields, paving the way for sustainable agricultural practices. Contract farming emerges as a pivotal mechanism for agricultural development in another chapter. Readers are immersed in the intricacies of contractual agreements between farmers and agribusinesses, examining their role in improving market access, technology adoption, and income generation for smallholder farmers. Sericulture, the practice of silk production, takes pivotal position in this volume, offering insights into its historical significance, technological advancements, and economic implications. From silkworm rearing techniques to silk processing methods, this chapter provides a comprehensive overview of sericulture's contribution to rural livelihoods and global textile industries. Genome editing emerges as a transformative tool in agricultural biotechnology, unlocking new avenues for crop improvement and trait enhancement. Polyploidy, the phenomenon of possessing multiple sets of chromosomes, is examined in depth, shedding light on its role in crop domestication, evolution, and breeding. This chapter elucidates how polyploid crops exhibit enhanced genetic diversity and resilience, offering novel opportunities for crop improvement in the face of climate change. Beekeeping and biopesticides round out the volume, highlighting the crucial roles of pollinators and eco-friendly pest management strategies in sustainable agriculture. From the benefits of beekeeping for biodiversity conservation to the efficacy of biopesticides in pest control, readers gain insights into holistic approaches to agricultural production. Therefore, "Current Trends and Advances in Agricultural Sciences Vol. 2" stands as an indispensable resource for researchers, educators, and policymakers seeking to stay abreast of the latest developments in agricultural sciences. With its interdisciplinary approach and forward-thinking perspective, this updated volume serves as a catalyst for innovation and sustainability in global food systems.

CONTENT

ABOUT THE EDITORS

Mr. Satyanarayan Soni, son of Mr. Shiv Kumar belongs to village Ganiyari, post- Ganiyari, Tehsil Sakri (Takhatpur) district Bilaspur Chhattisgarh is currently a research scholar in final year of PhD Agricultural Economics at college of agriculture Raipur (I.G.K.V). His graduation is from Bhatapara College of agriculture and research station and post graduation from college of agriculture Raipur (I.G.K.V). Many of his articles have been published in national and international agriculture conferences. Along with being a book editor, he is also the author of many articles, research papers and book chapters. During his studies in college, along with holding positions like College president, AIASA university president, he is also currently active in the student union. He Have great interest in writing, editing and publishing articles related to agriculture. He has research worked with economic analysis of production and marketing of biopesticides in Chhattisgarh, Economic analysis of major constraints in establishment of production unit of biopesticides in Chhattisgarh state and economic analysis of production and growth rate of paddy in Bilaspur district of Chhattisgarh.

Ms. R. Manisha, currently pursuing her Ph.D., degree program from Department of Plant Pathology, Faculty of Agriculture, Annamalai University, She has completed her B.Sc., (Agriculture) from Adhiparasakthi Agricultural college, Kalavai, Vellore and M.Sc., (Plant Pathology) at Sam Higginbottom University of Agriculture Sciences & Technology, Allahabad, Uttar Pradesh during 2020 & 2022 respectively. She got Young Scientist Award in ICRSP-2023 and best paper presenter award in IFBT-2022. She has presented papers in 2 International conference and attended more than 12 webinars, 3 conferences (National & International level). She has completed 1 training program at ICRISAT, 2 National seminars, 3 workshops. She has published 1 book chapter and 6 book chapter articles. Apart from her Education and Research, she worked as a project coordinating intern at Geolife Agritech India Pvt. Ltd.

Dr. Sujeet Deshmukh is an agricultural meteorologist with a Ph.D. in Agricultural Meteorology from M.P.K.V. Rahuri. His groundbreaking research on climate change impacts on agricultural productivity has garnered widespread acclaim, complemented by extensive experience in analyzing meteorological data and collaborating on multidisciplinary research projects. Proficient in crop modelling using DSSAT and INFOCROP, they excel in statistical analysis using R. With a Master's in Business Administration specializing in Project Management and having qualified the ASRB NET Examination, they possess a unique blend of technical and managerial skills. Their exceptional achievements include being awarded a University Gold Medal and the Best Research Scholar Award for outstanding contributions to Agricultural Meteorology. Dr. Sujeet Deshmukh has authored over 19 research papers, 8 popular articles, and 5 technical publications, showcasing their expertise and dedication to advancing the field. Additionally, they have completed more than 18 international and national trainings, further solidifying their status as a leader in the field of Agricultural Meteorology.

Khushboo Yadav is a scholar in Community Science. She obtained a Master's in Home Science Extension Education and Management by passing the ICAR AIEEA PG 2019 exam after completing her B.Sc. Hons. in Home Science at Chandra Shekhar Azad University of Agriculture and Technology, Kanpur. Currently pursuing a Ph.D. in Extension Education and Communication Management, she passed the ICAR AIEEA PhD test in 2021 with a remarkable AIR 11. Along with her academic achievements, Khushboo qualified for the UGC NET twice and passed the UGC NET JRF in the Dec 2021- June 2022 merged cycle. She actively participates in several international and national conferences, training programmes, workshops, and seminars. She was awarded Best Oral Presentation Award at an international conference. She has also published six book chapters and three research articles, contributing significantly to her field.

Dr. Nivetha Thangavel have completed Ph.D. (Agri Business Management) from Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu. Her specialization is in Marketing and operations management. Currently, she is working as an Assistant Professor in PGP College of Agricultural Sciences, Tamil Nadu. She has published 14 articles in national and international Journals, three book chapters, presented 10 papers in national and international conferences and has got four best article awards. In addition to this, she has attended numerous workshops and seminars related to agriculture and data analytics.

Mr. Vikash Tyagi was born on 17 march 1999. He has completed his graduation B.sc (Hons.) Agriculture in 2021 from S.V.P.U. A & T, Meerut (U. P) and M.sc (Horti) Vegetable Science in 2023 from S.V.P.A & T, Meerut. On the topic 'study on genetic diversity analysis in cucumber (Cucumis sativus L.)'. and now pursuing Ph.D. (Vegetable science) from S.V.P.U. A & T Meerut 250110 (U. P). on the topic "Molecular Characterization and Evaluation of Genotypes for Morphological & Qualitative Traits of Tomato (Solanum Lycopersicum L.) Under Protected & Open Field Condition' He has published 4 research paper ,5 National conference, 1 international conference,15 abstract,2 training program.

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