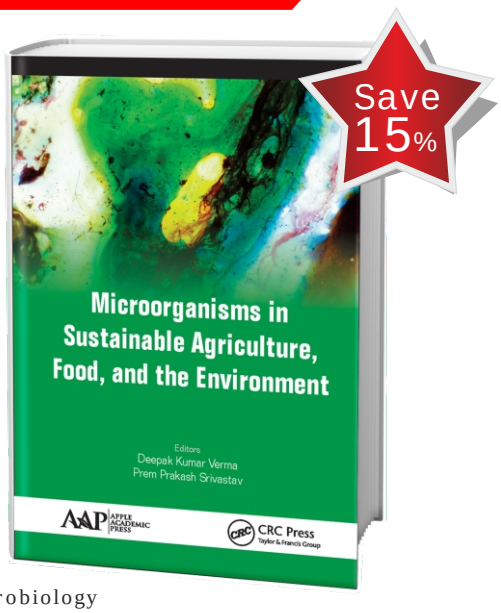
New Book Announcement

October 2016

Microorganisms in Sustainable Agriculture, Food, and the Environment



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In agricultural education and research, the study of agricultural microbiology has undergone tremendous changes in the past few decades, leading to today's scientific farming that is a backbone of economy all over the globe. Microorganisms in Sustainable Agriculture, Food, and the Environment fills the need for a comprehensive volume on recent advances and innovations in microbiology.

The book is divided into four main parts:

- food microbiology
- soil microbiology
- environmental microbiology
- industrial microbiology and microbial biotechnology

The first section addresses advances in microorganism research, which present threats and benefits to abundant, healthy food, and associated environments. The constant spread and evolution of agricultural pathogens provides a continually renewed source of challenges to productivity and food safety. Pathogens continue to cause once food has left the farm, causing spoilage, and in some cases poisoning and of humans and animals.

Part 2, on soil microbiology, deals extensively with studies on the isolation, culture, and use of Rhizobium spp. and mycorrhizae to improve soil fertility, plant growth, and yield. It includes research progress on biogeochemical cycles, plant growth promoting rhizobacteria (PGPR), microbial interactions in soil and other soil activities, microbial diversity in soil, biological control and bioremediation, and improvement of beneficial microorganisms (N2 fixers, phosphate solubilizers etc.).

The volume goes on to address environmental microbiology as it deals with the composition and physiology of microbial communities in the environment (soil, water, and air), including air pollution and bioremediation, microbiological control of agricultural enemies, and pathogens of agricultural important crop plants. The last section presents new advances on industrial microbiology and microbial biotechnology, both associated with the commercial exploitation of microorganisms for products or services, such as waste treatment and pollution control. The chapters explore the wide range of industrial microbial processes and products, including traditional fermented foods and beverages as well as the production of numerous chemical feedstock's (primary and secondary metabolites and products for application in human and animal health), the provision of animal feed production, alternative energy sources, and biofertilizers production.

With contributions from a broad range of leading researchers, this book will be valuable to students, instructors, and researchers. In addition, microbiology professionals seeking recent advanced and innovative knowledge in agriculture will find this book helpful, serving as a reference source in microbiology research, processing, and product development.

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ABOUT THE EDITORS

Deepak Kumar Verma is an agricultural science professional and is currently a PhD Research Scholar in the specialization of food processing engineering in the Agricultural and Food Engineering Department, Indian Institute of Technology, Kharagpur (WB), India. In 2012, he received a DST-INSPIRE Fellowship for PhD study by the Department of Science & Technology (DST), Ministry of Science and Technology, Government of India. Mr. Verma is currently working on the research project "Isolation and Characterization of Aroma Volatile and Flavoring Compounds from Aromatic and Non-Aromatic Rice Cultivars of India." His previous research work included "Physico-Chemical and Cooking Characteristics of Azad Basmati (CSAR 839-3): A Newly Evolved Variety of Basmati Rice (*Oryza sativa L.*)". He earned his BSc degree in agricultural science from the Faculty of Agriculture at Gorakhpur University, Gorakhpur, and his MSc (Agriculture) in Agricultural Biochemistry in 2011 with First rank and also received award from the Department of Agricultural Biochemistry, Chandra Shekhar Azad University of Agricultural and Technology, Kanpur, India. In addition to his work in plant biochemistry, he has also built a sound background in plant physiology, microbiology, plant pathology, genetics and plant breeding, plant biotechnology and genetic engineering, seed science and technology, food science and technology etc. In addition, he is member of different professional bodies, and his activities and accomplishments include conferences, seminar, workshop, training, and also the publication of research articles, books, and book chapters.

Prem Prakash Srivastav, PhD, is Associate Professor of Food Science and Technology in the Agricultural and Food Engineering Department at the Indian Institute of Technology, Kharagpur (WB), India, where he teaches various undergraduate, postgraduate, and PhD level courses and guides research projects at PhD, masters and undergraduate levels. His research interests include the development of specially designed convenience, functional, and therapeutic foods; the extraction of nutraceuticals; and the development of various low-cost food processing machineries. He has organized many sponsored short-term courses and completed sponsored research projects and consultancies. He has published various research papers in peer-reviewed international and national journals and proceedings and many technical bulletins and monographs as well. Other publications include books and book chapters along with many patents. He has attended, chaired, and presented various papers at international and national conferences and delivered many invited lectures in various summer/winter schools. Dr. Srivastav has received several best poster paper awards for his presentations. He is a member of various professional bodies, including the International Society for Technology in Education (ISTE), the Association of Food Scientists and Technologists (India), the Indian Dairy Association (IDA), the Association of Microbiologists of India (AMI), and the American Society of Agricultural and Biological Engineers and the Institute of Food Technologists (USA).

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