



## Plant Microbes Symbiosis: Applied Facets

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### Plant Microbes Symbiosis: Applied Facets From Springer

Plants form mutualistic association with various microorganisms, particularly in the rhizosphere region. The association benefits both the partners in a number of ways. A single plant can support the growth of diverse microbes and in reciprocation these microbes help the plant in several ways. A great deal of knowledge is now available on the mechanisms of action of plant growth promoting microbes in forming association with their partner plant and benefitting it. With ever increasing population and to achieve food security it has become utmost necessary to utilize these friendly microbes to enhance the crop yield and quality in an ecofriendly and sustainable manner. We already know about the huge negative impact of chemicals used in agriculture on the humans and the ecosystems as whole. 'Plant Microbes Symbiosis – Applied Facets' provides a comprehensive knowledge on practical, functional and purposeful utility of plant-microbe interactions. The book reviews the utilization of beneficial microbes for crop yield enhancement and protection against diseases caused by phytopathogens and nutrient deficiencies. The tome also reviews the utility of plant growth promoting microbes in helping the plants to deal with abiotic stresses imposed by climate change and anthropogenic activities. The book showcases how plant-microbe interactions are or can be utilized for reclamation of stressed soils and degradation of pollutants in a most effective and environment friendly manner. It also ascertains the reasons for the below par performance of the microbial based inoculants. The utilization of biotechnological tools for development of next generation bioformulations to combat the new challenges and overcome past hurdles has been discussed. This wonderful association between plants and microbes if used properly will not only enhance the crop yields and reclaim barren lands but also make our planet a better place to live on for all of its habitants.

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## **Editorial Review**

### **Review**

“The book addresses the role of beneficial microbes and plant–microbe relationships in crop yield augmentation and protection against diseases due to phytopathogens and nutrient scarcity. ... both the publisher and the author deserve praise for bringing out this valuable book. ... I sincerely recommend this significant book to institutional libraries, researchers, agricultural and soil scientists, and peoples who desire to work on sustainable agriculture development and restoration ecology.” (Jay Shankar Singh, *Applied Soil Ecology*, Vol. 92, August, 2015)

### **From the Back Cover**

Plants form mutualistic association with various microorganisms, particularly in the rhizosphere region. The association benefits both the partners in a number of ways. A single plant can support the growth of diverse microbes and in reciprocation these microbes help the plant in several ways. A great deal of knowledge is now available on the mechanisms of action of plant growth promotory microbes in forming association with their partner plant and benefitting it. With ever increasing population and to achieve food security it has become utmost necessary to utilize these friendly microbes to enhance the crop yield and quality in an ecofriendly and sustainable manner. We already know about the huge negative impact of chemicals used in agriculture on the humans and the ecosystems as whole. *Plant Microbes Symbiosis: Applied Facets* provides a comprehensive knowledge on practical, functional and purposeful utility of plant-microbe interactions. The book reviews the utilization of beneficial microbes for crop yield enhancement and protection against diseases caused by phytopathogens and nutrient deficiencies. The tome also reviews the utility of plant growth promotory microbes in helping the plants to deal with abiotic stresses imposed by climate change and anthropogenic activities. The book showcases how plant-microbe interactions are or can be utilized for reclamation of stressed soils and degradation of pollutants in a most effective and environment friendly manner. It also ascertains the reasons for the below par performance of the microbial based inoculants. The utilization of biotechnological tools for development of next generation bioformulations to combat the new challenges and overcome past hurdles has been discussed. This wonderful association between plants and microbes if used properly will not only enhance the crop yields and reclaim barren lands but also make our planet a better place to live on for all of its habitants.

### **About the Author**

Dr. Naveen Kumar Arora, PhD Microbiology, Associate Professor in Department of Environmental Microbiology, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow, Uttar Pradesh, India is a renowned researcher in the field of Environmental Microbiology and Biotechnology. His specific area of research is rhizosphere biology and PGPRs. He has 38 research papers published in premium international journals and several articles published in magazines and dailies. He is an editor of the book ‘Plant Microbe Symbiosis: Fundamentals and Advances’, published by Springer. He is a member of several national and international societies and reviewer of several international journals. He has delivered lectures in conferences and seminars around the globe. He has a long standing interest in teaching at the PG level and is involved in taking courses in bacteriology, microbial physiology, environmental microbiology, agriculture microbiology and industrial microbiology. He has been an advisor to 57 post graduate and 03 doctoral students. Recently, he was awarded for excellence in research by the Honorable Governor of Uttar Pradesh.

Although an academician and researcher by profession, he has a huge obsession for the wildlife and its conservation and has authored a book, Splendid Wilds. He has a dedicated website [www.naveenarora.co.in](http://www.naveenarora.co.in) for the cause of wildlife and environment conservation.

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