

Preface

Agricultural sustainability requires a major slave from ecosystem management which is better paid by microbial diversity in general and bacterial diversity in particular. Diversity of bacteria influences crop productivity providing nutrient convenience from soil instead altering per se community and diversity in the rhizosphere where they may influence mechanistic component with deleterious microflora.

Bacteria are minute, pervasive in nature and alleged as disease host instead of being tiny organisms and are recognized as employee of agro-biological ecosystem indulge in agricultural development. The diverse nature proved them as potential contributors in world of ecological and economical wealth creation. This step pertinently may help to launch the scientific motivation required for support to refrain of microbial diversity and conservation.

The present book has 13 chapters that cover various facets of current scientific scenario on bacterial diversity that are associated with agro-ecosystem, so as to benefit plants for sustainable agriculture. The agro-ecosystem enriched with rhizosphere implicit abundant and species-rich component of beneficial diversity. A due account is provided with respect to global biological significance of diversity of actinobacteria, rhizobia and bacteria from vermicompost, which have an ecological significance. Besides natural microorganisms, role of cold tolerant bacteria from Himalayan region and osmotolerant from coastal region have suitably described. Transgenic Bt cotton on the soil microbial diversity and other related functions has also been included. Microbial population in agro-ecosystem is essential and is subjective to their maintenance for use around the globe. It is therefore, important to explore secrets of culture independent diversified microbial communities for improvement in agricultural system with economically sound production of human food and animal feed.

This book will be useful for students, teachers and researchers but also to those interested to strengthen subjects of microbiology, ecology, phytopathology, physiology, environmental biology and NGO's working for the protection of species, loss of genetic material and consequently overall agricultural sustainability.

I would like to express my sincere thanks to all the subject experts for their much needed co-operation authoritative and up to date information organized in a befitting manner. I acknowledge with thanks the assistance rendered by my Ph.D.

students Shrivardhan, Mohit, Chitra and Garima. I am also thankful to University Grant Commission, New Delhi and UCOST, Dehradun for their support in execution of my research projects on microbial diversity as a prelude to lay foundation for compilation of the volume like this. I extend thanks to Dr. Valeria Rinaudo from the publisher Springer for her valuable support. Last but not the least, I owe thanks to my wife Dr. Sadhana and my children Dr. Charul and Ashish for taking care of me during this project.

‘Basant Panchmi’
Haridwar, India

Dinesh K. Maheshwari

Bacterial Diversity in Sustainable Agriculture

Maheshwari, D.K. (Ed.)

2014, XI, 376 p. 30 illus., 10 illus. in color., Hardcover

ISBN: 978-3-319-05935-8