

Contents

Foreword	v
Preface	vii
1. Unraveling plant microbiome: proteins and small molecules in signaling and improving plant health	1
<i>Ramasamy, K., Sivakumar, U. and K. Sara Parwin Banu</i>	
2. Dissection of molecular and physiological mechanism governing the interaction of root lesion nematodes and <i>Burkholderia</i> species group of bacteria to host cereals and non-cereal energy plants	29
<i>Shiveta Sharma, Shailendra Sharma and Akhouri Vaishampayan</i>	
3. Recent advances in proteomics approaches in understanding plant-microbe interactions	55
<i>Jahangir Imam, Nimai Prasad Mandal, Mukund Variar and Pratyosh Shukla</i>	
4. Applicability of microbial phytases in plant growth promotion and development	71
<i>Bijender Singh, Amit Kumari and Satyanarayana, T.</i>	
5. Plant Growth Promoting Rhizobacteria – Some Aspects and Prospects	87
<i>Tilak, K.V.B.R.</i>	
6. A closer look at <i>Enterobacter</i> sp. as plant growth promoting rhizobacteria	99
<i>Manoharan Shankar, Jeyaprakash Rajendhran and Paramasamy Gunasekaran</i>	
7. Bacterial endophytes represent the hidden treasure for potential applications in agriculture	123
<i>Sadaf Kalam, Ankati Sravani, Vaikunthapu Papa Rao and Appa Rao Podile</i>	

8. Exploring plant-endophytic relationships to enhance plant growth and production of natural compounds	143
<i>Patil, C.R. and Alagawadi, A.R.</i>	
9. An insightful overview on multifaceted perspectives of Plant Growth Promoting Rhizobacteria (PGPR)	153
<i>Lakshmanaperumalsamy, P., Karthikeyan, K. and Jayanthi, G.</i>	
10. Understanding of abiotic stress alleviation in plants through rhizobacteria	173
<i>Rashi Vishwakarma, Sangeeta Paul and Dolly Wattal Dhar</i>	
11. Beneficial effect of PGPB on the growth and yield of medicinal plant [Nithyakalyani] <i>Catharanthus roseus</i> Linn. G. Don	193
<i>Karthikeyan, B. and Deiveekasundram, M.</i>	
12. Pink pigmented facultative methylobacteria can alleviate drought stress in crop plants	203
<i>Sundaram, S.P.</i>	
13. Plant – microbe Interactions: the mandatory requirement for soil fertility management practices in organic crop production standards	217
<i>Bisoyi, R.N.</i>	
14. Microbes associated with rice soils	237
<i>Rao, V.R.</i>	
15. Role of <i>Azospirillum</i> in plant growth promotion: a review	257
<i>Ramanathan, N.</i>	
16. Preponderance and relationship of agromicrobes with maize ecosystem	273
<i>Manindra Nath Jha, Kumar M. and Chourasia, S.K.</i>	
17. Plant-Microbe interactions in Tobacco Rhizosphere	291
<i>Subhashini, D.V.</i>	

18. Significance of cyanobacteria and their associations with crop plants in agriculture	319
<i>Radha Prasanna, Siddarthan Venkatachalam, Anjuli Sood, Shobit Thapa, Amrita Kanchan and Balasubramanian Ramakrishnan</i>	
19. Arbuscular mycorrhizal symbiosis from basics to application: potential & prospects in soil-plant production systems	347
<i>Shivani Garg, Mahaveer Sharma and K. Annapurna</i>	
20. Arbuscular mycorrhizal fungi: role in ecosystem services, plant diversity and land productivity	369
<i>Bagyaraj, D.J.</i>	
21. Biosolubilizers – a boon to farmers	383
<i>Anthoni Raj, S.</i>	
22. Microbial inoculants for stressed environments	395
<i>Govindan Selvakumar, Periyasamy Panneerselvam, Gurupadam Hema Bindu and Arakalagud Nanjundaiah Ganeshamurthy</i>	
23. Efficacy of carrier-based and liquid microbial inoculants on field crops in tropical soils	419
<i>Trimurtulu, N. and Rao, D.L.N.</i>	
24. Soil fertility sustainability : long-term nutrient management adoptions on biological and biochemical properties of Indian semi-arid tropical Alfisol	449
<i>Balachandar, D., Chinnadurai, C. and S.M. Tamilselvi, K. Arulmozhiselvan and K. Ilamurugu</i>	
25. N cycling in rhizospheres, microbes of concern, and nitrification inhibitors regulating the release of NO_3^- into agricultural soils and the emission of N_2O into the atmosphere	471
<i>Gero Benckiser</i>	
26. Two step treatments by bacteria and rhizofiltration for bioremediation of complex industrial wastewater: a novel approach for safe disposal	483
<i>Ram Chandra, Sangeeta Yadav and Vineet Kumar</i>	

Keywords : Microbiome; Proteins; Small molecules; Signaling; Plant health