

Contents

1 Endophytic Bacteria: A Biotechnological Potential in Agrobiological System	1
Paulo Teixeira Lacava and João Lúcio Azevedo	
2 Beneficial Effects of Plant Growth-Promoting Rhizobacteria on Improved Crop Production: Prospects for Developing Economies	45
A.O. Adesemoye and D. Egamberdieva	
3 Role of Plant Growth-Promoting Rhizobacteria for Commercially Grown Medicinal Plants	65
B. Karthikeyan, U. Sakthivel, and J. Sriman Narayanan	
4 Rhizosphere Bacteria from Coastal Sand Dunes and Their Applications in Agriculture	77
Aureen Godinho and Saroj Bhosle	
5 Plant-Associated Bacteria in Nitrogen Nutrition in Crops, with Special Reference to Rice and Banana	97
Md. Abdul Baset Mia, Md. Motaher Hossain, Zulkifli Haji Shamsuddin, and M. Tofazzal Islam	
6 Potential of Rhizobia in Productivity Enhancement of <i>Macrotyloma uniflorum</i> L. and <i>Phaseolus vulgaris</i> L. Cultivated in the Western Himalaya	127
Dinesh K. Maheshwari, Mohit Agarwal, Shrivardhan Dheeman, and Meenu Saraf	
7 Root Nodule and Rhizosphere Bacteria for Forage Legume Growth Promotion and Disease Management	167
Nora Altier, Elena Beyhaut, and Carlos Pérez	

8	Bioinoculants: Understanding Chickpea <i>Rhizobia</i> in Providing Sustainable Agriculture	185
	Hammad Khan and Nagina Parmar	
9	Plant Growth-Promoting Rhizobacteria as Zinc Mobilizers: A Promising Approach for Cereals Biofortification	217
	Fauzia Yusuf Hafeez, Muhammad Abaid-Ullah, and Muhammad Nadeem Hassan	
10	Functional Aspect of Phosphate-Solubilizing Bacteria: Importance in Crop Production	237
	Mohammad Saghir Khan, Ees Ahmad, Almas Zaidi, and Mohammad Oves	
11	The Role of Siderophores in Plant Growth-Promoting Bacteria . . .	265
	Ana Fernández Scavino and Raúl O. Pedraza	
12	Role of Microbial Siderophores in Improving Crop Productivity in Wheat	287
	Prashant Sarode, Makarand Rane, Meghraj Kadam, and Sudhir Chincholkar	
13	Induction of Plant Defense Response and Its Impact on Productivity	309
	Louis-Philippe Hamel and Nathalie Beaudoin	
14	Plant Growth-Promoting Rhizobacteria for Plant Immunity	329
	Marilyn Sumayo and Sa-Youl Ghim	
15	Integrated Diseases Management in Groundnut for Sustainable Productivity	351
	Urja Pandya and Meenu Saraf	
16	The Effects of Volatile Metabolites from Rhizobacteria on <i>Arabidopsis thaliana</i>	379
	Katrin Wenke and Birgit Piechulla	
17	Exopolysaccharides of <i>Paenibacillus polymyxa</i> Rhizobacteria in Plant–Bacterial Interactions	401
	Irina V. Yegorenkova	
18	Interactions in Rhizosphere for Bioremediation of Heavy Metals	439
	Thounaojam Nevita, Piyush Pandey, Dinesh Kumar Maheshwari, and Anchal Sood	
19	The State of the Rhizoinhabitants in Bridging the Gap Between Plant Productivity and Persuasiveness During Remediation	463
	Narayanan Rajendran	
	Index	497