

1. Record Nr.	UNINA9910253946803321
Titolo	Rhizotrophs: Plant Growth Promotion to Bioremediation // edited by Samina Mehnaz
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2017
ISBN	981-10-4862-2
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (289 pages) : illustrations (some color), photographs, tables
Collana	Microorganisms for Sustainability, , 2512-1898 ; ; 2
Disciplina	581.10428
Soggetti	Agriculture Microbial ecology Microbiology Industrial microbiology Microbial Ecology Industrial Microbiology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Chapter 1. Gluconactobacter Azotocaptans: A Plant Growth Promoting Bacteria (Samina Mehnaz) -- Chapter 2. Modifying the Rhizosphere of Agricultural Crops to Improve Yield and Sustainability: Azospirillum as a Model Rhizotroph (María Alejandra Pereyra) -- Chapter 3. Pseudomonadaceae: From Biocontrol to Plant Growth Promotion (Roxane Roquigny) -- Chapter 4. Rhizobial Bioformulations: Past, Present and Future (Naveen Arora) -- Chapter 5. Rhizotrophs in Saline Agriculture (Faizan Ullah) -- Chapter 6. Challenges Faced in Field Application of Phosphate-Solubilizing Bacteria (Abdul Aziz Eida) -- Chapter 7. Corn and its Interaction with Bacterial Communities (Shimaila Ali) -- Chapter 8. Bacteriocins Producing Rhizosphere Bacteria and their Potential as a Biocontrol Agent (Naheed Mojjani) -- Chapter 9. Role of Hydrolytic Enzymes of Rhizoflora in Biocontrol of Fungal Phytopathogens - An Overview (Jadhav HP) -- Chapter 10. Role of Quorum Sensing Signals of Rhizobacteria for Plant Growth Promotion (Anton Hartmann) -- Chapter 11. Tripartite Interaction among Root Associated Beneficial Microbes under Stress (Dilfuza Egamberdieva) --

Chapter 12. Frankia and Actinorhizal Plants: Symbiotic Nitrogen Fixation (Thanh van Nguyen) -- Chapter 13. Application of Protists to Improve Plant Growth in Sustainable Agriculture (Alexandre Jousset) -- Chapter 14. Bioremediation of Heavy Metals for Sustainable Agriculture (Zakia Lateef).

---

Sommario/riassunto

This book describes the contributions of rhizotrophs – microbes associated with the parts of plants below ground – in sustainable agriculture. It covers a broad range of aspects, from plant growth promotion to bioremediation. It highlights the role of bacteria, actinomycetes, mycorrhizal fungi, and most interestingly protists, in the sustainability of agriculture. Further, it addresses in detail the involvement of quorum sensing signals, and the role of hydrolytic enzymes and bacteriocin in combating the phytopathogen. The book sheds light on the interaction of rhizotrophs in rhizosphere and how these microbes support plants growing under adverse stress conditions such as saline, drought or heavy-metals contamination. Challenges faced in the field application of these microbes, strategies for modifying the rhizosphere to improve crop yield, and the latest advances in rhizobial bioformulations are also discussed. Overall, the book provides comprehensive information on how various microbes can be used to improve the sustainability of agriculture without disturbing the environment.

---