1. Record Nr. UNINA9910768478403321

Titolo	Bacilli and Agrobiotechnology: Phytostimulation and Biocontrol : Volume 2 / / edited by Md Tofazzal Islam, M. Mahfuz Rahman, Piyush Pandey, Michael Henry Boehme, Geert Haesaert
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-15175-1
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (VI, 335 p. 66 illus., 26 illus. in color.)
Collana	Bacilli in Climate Resilient Agriculture and Bioprospecting, , 2524-5139
Disciplina	338.16 630.2
Soggetti	Bacteria Agriculture Botanical chemistry Enzymology Plant Biochemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Management of fungal diseases on cucumber (Cucumis sativus L.) and tomato (Solanum lycopersicum L.) crops in greenhouses using Bacillus subtilis -- 2. Bacillus species: A potential plant growth regulator -- 3. Bacilli in the Biocontrol of Mycotoxins -- 4. Bacillus subtilis and its effect on the post-harvest of fruit and flowers -- 5. Plant growth-promotion by ACC deaminase-producing Bacilli under salt stress conditions -- 6. Bacillus subtilis-mediated Abiotic Stress Tolerance in Plant -- 7. Exploring the Utility of Aneurinibacillus as a Bioinoculant for Sustainable Crop Production and Environmental Applications -- 8. Phylogeny and Taxonomy of agriculturally important Bacillus species -- 9. Endophytic Bacillus species induced systemic resistance to plant diseases -- 10. Genomics and Post-genomics Approaches for Elucidating Molecular Mechanisms of Plant Growth Promoting Bacilli -- 11. Tapping the Potential of Metabolomics in New Natural Products Discovery from Bacillus Species -- 12. Genomicinsights and comparative genomics of Bacillus species having

diverse mechanisms of biocontrol against fungal phytopathogens -- 13. Bacillus species as biocontrol agents for fungal plant pathogens -- 14. Application Method and Efficacy of Bacillus spp in Mitigating Abiotic and Biotic Stresses and Enhancing Plant Performance -- 15. Bacillus thuringiensis-based Gene Pyramiding a way Forward for a Combined Horizontal and Vertical Resistance in Plant -- 16. Probiotic Bacilli in Sustainable Aquaculture.

Sommario/riassunto

This book provides a comprehensive resource for researchers and students involved with studying the roles of Bacilli in sustainable crop production technologies. Chapters included in the book not only elaborate on beneficial traits of Bacilli, but also highlight utilization of these microbes for producing industrially important antibiotics, enzymes, probiotics and other useful biochemicals. Feeding ever increasing world population from shrinking arable acreage led to a synthetic input (fertilizer, growth regulator, pesticide etc.) based crop production system, which has been creating both environmental and health hazards and may also make the whole production system unsustainable. Researchers, food producers and consumers alike, now realize that this world needs effective, environmentally smart agricultural technologies that are safe for people use less synthetic inputs and protect natural resources. To overcome the challenge of increasing food production witha significant reduction of agrochemicals use, a great deal of interest and research have been devoted to beneficial microorganisms/biostimulants in recent days with noteworthy positive results. Bacillus based biopesticide together with other bio-rational approaches may play a critical role in helping all the key drivers of sustainable, environmentally responsible food production with enhanced food quality. Although multiple strains of Bacillus spp. showed promise to contribute to the sustainable agriculture by making nutrients available to plants, providing additional defense to adverse abiotic and biotic stresses, research on Bacillus based product formulation, rate and crop selection, optimization of application timing are urgently needed. As crop plants are more vulnerable to abiotic and biotic stresses at the seedling stage, optimization of application timing should aid in alleviating those stresses for the successful completion of life cycle of a plant.