1. Record Nr. UNINA9910254059803321

Titolo	Microbial Inoculants in Sustainable Agricultural Productivity [[electronic resource]] : Vol. 2: Functional Applications / / edited by Dhananjaya Pratap Singh, Harikesh Bahadur Singh, Ratna Prabha
Pubbl/distr/stampa	New Delhi : , : Springer India : , : Imprint : Springer, , 2016
ISBN	81-322-2644-5
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (316 p.)
Disciplina	570
Soggetti	Microbial genetics Microbial genomics Microbial ecology Agriculture Microbial Genetics and Genomics Microbial Ecology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	1. Soil Microbes: The Invisible Managers of Soil Fertility -- 2. Efficacy of Biofertilizers: Challenges to Improve Crop Production -- 3. Revisiting Action of Bioinoculants: Their Impact on Rhizospheric Microbial Community Function -- 4. Phenazine-Producing Pseudomonas spp. as Biocontrol Agents of Plant Pathogens -- 5. Role of Non-pathogenic Fungi in Inducing Systemic Resistance in Crop Plants against Phytopathogens -- 6. Stress Management Practices in Plants by Microbes -- 7. Contribution of Microbial Inoculants in Soil Carbon Sequestration and Sustainable Agriculture -- 8. Remediation of Heavy Metals Contaminated Agricultural Soils using Microbes -- 9. Role of Microbial Inoculants in Nutrient Use Efficiency -- 10. Nutrient Management Strategies based on Microbial Functions -- 11. Organic Acids in the Rhizosphere- Their Role in Phosphate Dissolution -- 12. Formulations of Biofertilizers- Approaches and Advances -- 13. Delivery Systems for Introduction of Microbial Inoculants in the Field -- 14. Advances in Formulation Development Technologies -- 15. Formulations of Plant Growth-Promoting Microbes for Field

Applications -- 16. A Novel Tool of Nanotechnology- Nanoparticle Mediated Control of Nematode Infection in Plants -- 17. Understanding the Role of Nanomaterials in Agriculture -- 18. Nanoparticles - The Next Generation Technology for Sustainable Agriculture -- 19. Challenges in Regulation and Registration of Biopesticides: An Overview.

Sommario/riassunto

The performance of crops in the soil largely depends on the physico-chemical components of the soil, which regulate the availability of nutrients as well as abiotic and biotic stresses. Microbes are the integral component of any agricultural soil, playing a vital role in regulating the bioavailability of nutrients, the tolerance to abiotic and biotic stresses and management of seed-borne and soil-borne plant diseases. The second volume of the book Microbial Inoculants in Sustainable Agricultural Productivity - Functional Applications reflects the pioneering efforts of eminent researchers to explore the functions of promising microbes as microbial inoculants, establish inoculants for field applications and promote corresponding knowledge among farming communities. In this volume, readers will find dedicated chapters on the role of microbes as biofertilizers and biopesticides in the improvement of crop plants, managing soil fertility and plant health, enhancing the efficiency of soil nutrients and establishing systemic phytopathogen resistance in plants, as well as managing various kinds of plant stress by applying microbial inoculants. The impact of microbial inoculants on the remediation of heavy metals, soil carbon sequestration, function of rhizosphere microbial communities and remediation of heavy metal contaminated agricultural soils is also covered in great detail. In this Volume, a major focus is on the approaches, strategies, advances and technologies used to develop suitable and sustainable delivery systems for microbial inoculants in field applications. Subsequent chapters investigate the role of nanomaterials in agriculture and the nanoparticle-mediated biocontrol of nematodes. An overview of the challenges facing the regulation and registration of biopesticides in India rounds out the coverage.