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Nota di contenuto	Part 1. Microbes for Sustainable Food Production -- Chapter 1. Importance of Microbes in Nutrient Use Efficiency and Sustainable Food Production -- Chapter 2. Nutrient Solubilizing Microbes (NSMs): Its Role in Sustainable Crop Production -- Chapter 3. Implementation of Biofortification Technology by Using PGPR for Sustainable Agricultural Production -- Chapter 4. Biological Nitrogen Fixation for Sustainable Agriculture -- Chapter 5. Paenibacillus polymyxa-a Prominent Biofertilizer and Biocontrol Agent for Sustainable Agriculture -- Chapter 6. Arbuscular Mycorrhizal Symbiosis and Their Role in Plant Nutrition in Sustainable Agriculture -- Part 2. Microbes for Sustainable Crop Protection -- Chapter 7. Role of Pseudomonas sp. in Sustainable Agriculture and Disease Management. Chapter 8. Role of Nutrients in Controlling the Plant Diseases in Sustainable Agriculture -- Chapter 9. Integrated Mechanisms of Plant Disease Containment by Rhizospheric

Bacteria: Unraveling the Signal Cross-talk Between Plant and Fluorescent Pseudomonas -- Chapter 10. Towards Plant Defense Mechanisms Against Root Pathogens -- Chapter 11. Attempts for Biological Control of Ralstonia solanacearum by Using Beneficial Microorganisms -- Chapter 12. Prospect and Potential of Burkholderia sp. Against Phytophthora capsici Leonian, A Causative Agent for Foot Rot Sisease of Black Pepper.

Sommario/riassunto

This book is a compilation of case studies from different countries and covers contemporary with future prospective for sustainable development of agriculture. The book highlights the real-world as well as future generation situations facing the challenges for the twenty first century will be production of sufficient food and highlights the strengths, weaknesses and opportunities, to meet the needs of fast growing population it is imperative to increase agricultural productivity in an environmentally sustainable manner. Due to imbalanced use of chemical fertilizers and agrochemicals has a considerable negative impact on economy and environmental sustainability of nation, for the sustainable alternative means to solve these problems, the efficient utilization of biological agents have been extensively studied. Naturally existing plant-microbe-environment interactions are utilized in many ways for enhancing plant productivity. A greater understanding of how plants and microbes live together and benefit each other can therefore provide new strategies to improve plant productivity, in most sustainable way. To achieve the objective of sustainable agricultural practices there is a need for understanding both basic and applied aspects of agriculturally important microorganisms. Focus needs to be on transforming agricultural systems from nutrient deficient to nutrient rich soil-plant system. This book is split into two parts, with an aim to provide comprehensive description and highlight a holistic approach. It elucidated various mechanisms of nutrients solubilisation and its importance in enhancement of plant growth, nutrient content, yield of various crops and vegetables as well as soil fertility and health. Unit-1 in this book explains the importance of soil microbes in sustainable crop production. It contains chapters detailing the role and mechanism of action of soil microbes which enhances the productivity via various bio-chemical and molecular channels. In unit-2 the role of microbes in plant protection is elaborated. With the help of case studies of food crops, multiple ways in which soil microbes help in fighting and preventing plant diseases is explained. With the given content and layout book will be an all-inclusive collection of information, which will be useful for students, academicians, researchers working in the field of rhizospheric mechanisms, agricultural microbiology, soil microbiology, biotechnology, agronomy and sustainable agriculture and also for policy makers in the area of food security and sustainable agriculture.