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Nota di contenuto	Chapter 1 -- Plant-microbe interactions promoting millets plant growth and health: Perspectives for use of microorganisms in millets production, Chapter 2 -- Diversity and function of microbes associated with the rhizosphere of millets, Chapter 3 -- Biodiversity of arbuscular mycorrhizal fungi and its impact on millets growth, Chapter 4 -- Drought-tolerant plant growth-promoting rhizobacteria associated with millets, Chapter 5 -- Identification of novel microbial strain for reduced pesticide use in millets, Chapter 6 -- Current insights into the role of rhizosphere bacteria in disease suppression in millets, Chapter 7 -- Comparison of rhizospheric functional diversity between chemically fertilized and bioinoculated millet, Chapter 8 -- Deciphering the role and diversity of microbes present in millet rhizosphere, Chapter 9 -- Role of phosphate solubilizing microbes on phosphorous availability and yield attributes of millet, Chapter 10 -- Impact of rhizosphere ecology on nitrogen fixation in millets, Chapter 11 -- Synergistic effects of arbuscular mycorrhizal fungi and PGPR on yield improvements in millets, Chapter 13 -- Understanding of belowground biochemical communication in millets through metabolomics, Chapter 14 -- Prospects of gene editing techniques in manipulating the rhizosphere microbiome for millets productivity, Chapter 15 -- Effect of nano-formulated agrochemicals on rhizospheric communities in millets, Chapter 16 -- Potential application of nanotechnology in biofertilizer formulation for millets.

Sommario/riassunto

This edited volume is the first book that explicitly explains the link between the extraordinarily small-scale microbial processes and the growth and yield attributes of millet crops. This book includes chapters emphasizing on the effects of rhizosphere biology on long-term millet crop management. Millets are a collection of small-grained cereal grasses that are grown for human carbohydrate needs. They are among the oldest crops, mainly divided into two groups: major and small millets based on seed size. Major millets are composed of sorghum (Sorghum bicolor) and pearl millet (Pennisetum glaucum); while small millets are composed of six species that includes finger millet (Eleusine coracana (L.)), little millet (Panicum sumatrense), kodo millet (Paspalum scrobiculatum (L.)), foxtail millet (Setaria italica (L.)), barnyard millet (Echinochloa frumentacea (L.)), and proso millet (Panicum miliaceum (L.). These crops are earlier considered as orphan crops, but recently due to their nutritional values it is gaining the importance. Various reports are published based on role of rhizosphere on growth and health of these crops. The rhizosphere being a dynamic interface among the plant roots and soil microbes provides a number of advantages to the millets too. The soil properties in rhizospheric region are also different as compared to the bulk soil. This book discovers the functional attributes of rhizosphere in promoting the healthy growth of millet crop and achieving higher yield during the changing climatic condition. This book is of interest to university teachers, scientists working in the millets, and policymakers in agricultural departments. Also, the book serves as additional reading material for undergraduate and graduate students of agriculture, biotechnology, microbiology, genetics, and soil science.