

Shiwani Guleria Sharma
Neeta Raj Sharma
Mohit Sharma *Editors*

Microbial Diversity, Interventions and Scope



Recent Advances in Plant-Microbe Interaction

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Jayakumar Pathma, Gurusamy Raman,
Rajendiran Kamaraj Kennedy, and Laxman Sonawane Bhushan

Abstract

The association of plants and microbes has begun since their evolution. Microbes and plants have coevolved and interacted with each other to meet their demands. Their relationship might be cordial symbiotic as in case of interaction between plants and beneficial microbes or detrimental as in case of interaction between plants and phytopathogens. Numerous genera of microbes are known to be associated with the plants and their rhizosphere. The interaction among these diverse microbial communities and their ability to excel the competition decides the overall plant health. In the past decades, agricultural microbiologists had given more emphasis to plant growth-promoting rhizosphere microbes and soil-borne phytopathogens and their interactions, which has resulted in the identification and use of promising microbial strains with biocontrol and biofertilizing properties. With recent advancement in molecular diagnostics, it is evidenced that in addition to rhizosphere microbes, the interactions between plant microbiomes, viz. epiphytes and endophytes, colonizing the entire plant and the plant genome (holobiont) significantly affect the fitness of the plant. Scientific studies evidence that the plant genotype, biostage, soil biogeochemistry and microbe-microbe interaction decide the nature of associated microbiomes. Recent research shows that artificial inoculation of beneficial microbiomes instead of a single or a

J. Pathma (✉)

Department of Entomology, School of Agriculture, Division of Research and Development, Lovely Professional University, Phagwara, Punjab, India

G. Raman

Department of Life Sciences, Yeungnam University, Gyeongsan, Gyeongsangbuk-do, South Korea

R. K. Kennedy

Department of Biotechnology, St. Joseph's College, Trichy, Tamil Nadu, India

L. S. Bhushan

Department of Entomology, School of Agriculture, Lovely Professional University, Phagwara, Punjab, India