

Special Issue

Advancements in Biofertilizer Research: Impacts on Soil Fertility and Plant Development

Message from the Guest Editors

Biofertilizers made up of microorganisms from phytobiomes are increasingly important for enhancing plant growth, nutrition, health, and stress resilience, and are seen as a solution to issues such as soil degradation, environmental contamination, ecosystem disturbance, and human health hazards in agroecosystems. However, there are challenges associated with the appropriate selection of safe and effective bioinoculants, successful delivery and establishment, and reliable and repeatable efficacy of biofertilizers and microbes in the field. Advancements in biofertilizer research aim to improve formulations, develop alternative delivery approaches, consider plant-microbiome assembly and dynamics, and incorporate microbiome-based concepts and plant-microbe-microbiome interactions. These advancements are guided by the development of omics-related technologies and analyses. With agroecosystems under increasing environmental stress from anthropogenic climate change and contaminants, biofertilizers and microbes are potential key players in finding solutions towards sustainable development.

Keywords: biofertilizers; plant growth and development; soil fertility

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