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Role of Plant Growth-Promoting Microbes in Agriculture

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Message from the Guest Editors

By the end of the 1970s, the term plant growth-promoting rhizobacteria (PGPR) was coined to designate rhizosphere-isolated pseudomonads that, following seed inoculation, rapidly colonized plant roots and increased crop yield. The concept was adopted and developed by several researchers and, more recently, it was extended to any bacteria (PGPB) or any microorganism (PGPM) exhibiting plant growth-promoting (PGP) traits, such as nitrogen fixation, phosphate and potassium solubilization, the production of siderophores, indolic compounds, and 1-aminocyclopropane-1-carboxylate (ACC) deaminase or that lessen or prevent the deleterious effects of one phytopathogenic organism, and that is effective in benefiting plants. In addition to the formulation of conventional inoculants, studies with PGPM are evolving to the construction of synthetic communities, an approach that can be linked to metagenomic analysis, in order to identify the keystone taxa of soil microbiome and interfere in it to improve plant growth. This Special Issue welcomes all types of articles focusing on PGPM, including original research and reviews.

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Message from the Editor-in-Chief

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