

Special Issue

Rhizosphere Microbes and Plant Stress

Message from the Guest Editors

Plant growth-promoting rhizobacteria (PGPR) are chemical-free alternatives to conventional crop protection methods in agriculture. Rhizosphere microbes are unique among the PGPR genera in terms of root colonization; nitrogen fixation; the production of exopolysaccharides, siderophores, hydrogen cyanide (HCN), and phytohormones; the solubilization of phosphorus, potassium, and zinc; biofilm formation; antioxidant activities; stress adaptation abilities; and positive interactions with other microbial communities. They also aid in plant development by promoting biotic and abiotic stress tolerance and as well as by supporting host plant nutrition. A rhizosphere microbe is regarded as an environmentally acceptable alternative to harmful chemical fertilizers because of its active growth-promoting actions. However, the molecular mechanism of the interaction between rhizosphere and plant is still less known. A deeper understanding of the PGPR interaction with plants is important for improving the efficiency of PGPR and expanding its application in agriculture.

Guest Editors

Dr. Rajesh Kumar Singh

Guangxi Academy of Agricultural Science, Nanning, China

Dr. Pratiksha Singh

Guangxi Key Laboratory for Polysaccharide Materials and Modifications, Guangxi University for Nationalities, Nanning, China

Dr. Dao-Jun Guo

Life Sciences and Engineering, Hexi University, Zhangye, China

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Editor-in-Chief

Prof. Dr. Lluís Ribas de Pouplana

Institute for Research in Biomedicine (IRB Barcelona), The Barcelona
Institute of Science and Technology, 08028 Barcelona, Spain

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