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Metal/Metalloid Toxicity in Plants: Rhizosphere Mycorrhizal and Microbial Strategies for Stress Management and Remediation

Guest Editor:

Dr. Paramsothy Jeyakumar

Environmental Sciences Group,
School of Agriculture and
Environment, Massey University
of New Zealand, Palmerston
North 4442, New Zealand

Deadline for manuscript
submissions:

31 August 2024

Message from the Guest Editor

To enhance primary sector production and maintain land quality for future generations, addressing soil-related challenges is crucial. Abiotic stress, particularly metal/metalloid toxicity, poses a significant threat to crop production, leading to reduced growth, physiological changes, and cellular damage. Understanding plant responses to metal/metalloid toxicity is essential.

Crops grown in metal(loid)-contaminated soils can accumulate these substances, limiting their use for high-value agriculture. Managing crop quality and quantity in such soils is a pressing challenge. Investigating mechanisms involved in metal(loid) uptake and translocation in plants is key to developing mitigation strategies.

Certain soil microbes, like metal-mobilizing or metal-resistant bacteria, can detoxify metals in the rhizosphere. Meanwhile, mycorrhizal fungi form symbiotic partnerships with plants, enhancing nutrient absorption and growth. These fungi also improve metal/metalloid tolerance by increasing nutrient availability, producing metal-binding compounds, and adjusting soil pH.



mdpi.com/si/186687

Special Issue



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Prof. Dr. Dilantha Fernando

Department of Plant Science,
University of Manitoba, Winnipeg,
MB R3T 2N2, Canada

Message from the Editor-in-Chief

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Plants Editorial Office
MDPI, St. Alban-Anlage 66
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