Special Issue

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

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.

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Plants is an open access journal which provides an advanced forum for research findings in areas related to plant function, its physiology, biology, taxonomy, stresses, and its interactions with other organisms. It publishes original research articles, reviews, reports, conference proceedings (peer reviewed full articles) and communications. In original research papers, it is important that full experimental details are provided. We also encourage timely reviews and commentaries on topics of interest to the plant research community.

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