



Trace Metals in Plant-Soil-Environment: Bioremediation for Food Safety and Sustainability

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Message from the Guest Editor

Dear Colleagues

Essential metals such as selenium, silicon, manganese, boron, cobalt, molybdenum, nickel, aluminum, copper, iodine, iron, and zinc are known as beneficial elements that support the growth of plants and play a vital role in different biological processes, chemical reactions, and enzyme functions. However, they are toxic at higher concentrations. The biogeochemical imbalances, mining activities, and agricultural crop irrigation with wastewater are among the major reasons for increased metalloid concentrations in the soil-plant ecosystem. Hazardous metalloids tend to affect plant growth, metabolism, development, and overall productivity. The safety of crop plants may be threatened due to their propensity to bioaccumulate some toxic elements in the edible fraction. As, Cr, Cd, Pb, and Hg are the elements that raise more alarm, severe toxicity, contamination, and inadequate for human (or animal) daily intake. It enhances the risk associated with toxic elements in crops; the influence of genotype on elemental bioaccumulation processes; and potential risks to human and animal health following exposure to these harmful metals for a long time.



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