

Special Issue

Mechanisms and Control of Nutrients, Beneficial Elements and Metals Uptake in Crops

Message from the Guest Editors

Plants inhabit diverse soil types, each containing a range of elements, including essential nutrients; beneficial elements; and potentially harmful, toxic elements. While plants absorb essential elements for growth, they also uptake elements that can be beneficial by stimulating mechanisms of tolerance to biotic and abiotic stress. Conversely, plants may absorb toxic elements, which can cause severe damage. Some plants tolerate the presence of these toxic elements in their tissues by complexing them with organic molecules and/or storing them in organelles, limiting their harmful effects. In these three cases—nutrient, beneficial, and toxic elements—there are mechanisms controlling their absorption, transport, utilization, and storage in tissues. Understanding the intricate processes governing the absorption, transport, utilization, and storage of these elements in plant tissues is crucial. The Special Issue addresses mechanisms involved in root and leaf uptake of nutrients, beneficial and toxic elements, and their regulatory processes. We also consider manuscripts related to techniques used for improving nutrient absorption if a mechanism is described.

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