

Special Issue

Carbohydrates in Plant Development and Stress Response

Message from the Guest Editors

Environmental threats and their combined action affect plant development and crop quality and productivity. Plants respond to these challenges by activating multiple and complex defense responses involving anatomical, physiological, and biochemical acclimations, including metabolomics modifications. In this context, non-structural carbohydrates (NSC) are crucial to driving developmental, phenological and stress responses. The balance between reserves, such as starch or fructans, and other sugar pools can play distinct roles at the plant level, from energy metabolism and cell membrane transport, to osmoregulation, hormonal interaction, developmental signaling, and provide carbon skeletons for secondary metabolites, which are involved in growth and in several responses to environmental stress conditions.

This Special Issue aims at improving our knowledge of the carbohydrate-mediated plant response to environmental cues. The interaction between and/or modulation of distinct carbohydrates, their related enzymes, and sugar derivatives (e.g., sugar acids and sugar alcohols) during defence responses is also of great interest.

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