

Special Issue

Regulatory Mechanisms of Exogenous Natural Compounds in the Growth and Stress Resistance of Horticultural Crops

Message from the Guest Editors

Exogenous natural compounds—including plant growth regulators, signaling molecules, biostimulants, and elicitors—play pivotal roles in enhancing the growth, stress resilience, and quality of horticultural crops. These compounds function through multifaceted regulatory mechanisms, modulating metabolic pathways, improving nutrient assimilation, and fine-tuning gene expression associated with stress responses. Their application has been shown to enhance antioxidant activity, mitigate both abiotic (e.g., drought, salinity, extreme temperatures) and biotic (e.g., fungal, bacterial) stresses, and elevate the content of bioactive compounds in plants. Integrating these compounds into sustainable crop management strategies represents a promising approach to address climate challenges and the growing demand for agricultural productivity. This Special Issue aims to collect the application of natural compounds in horticultural science and practice, highlighting the regulatory mechanisms by which exogenous natural compounds influence the plants growth, development, and stress responses, particularly in horticultural crops.

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