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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Deadline for manuscript submissions

31 January 2026

Agriculture

an Open Access Journal by MDPI

Impact Factor 3.6
CiteScore 6.3

mdpi.com/si/247835

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Agriculture (ISSN 2077-0472) is an international, cross-disciplinary and scholarly journal on the science and technology of crop and animal production, and management of the natural resource base for agricultural production. We invite submissions from authors according to the aims and scope of the journal described in more detail on this page. *Agriculture* is published in an open access format – articles are published on the journal's website immediately after acceptance, giving the scientific community and the public unlimited and free access to the content.

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