

Special Issue

Influence of Agronomic Practices and Environmental Conditions on Phytochemical Accumulation and Antioxidant Activity in Medicinal and Aromatic Plants

Message from the Guest Editors

Phytochemicals such as polyphenols, flavonoids, alkaloids, and terpenes play vital roles in plant defense mechanisms and contribute significantly to antioxidant activity in medicinal and aromatic plants. These bioactive compounds are not only essential for plant stress responses but are also valuable for their potential applications in the pharmaceutical, cosmetic, and functional food industries. Recent research has demonstrated that the accumulation of phytochemicals and associated antioxidant activity in plants can be significantly influenced by agronomic practices, including fertilization regimes, irrigation management, planting density, and tillage systems, as well as by soil characteristics and climatic factors. This Special Issue aims to explore the interaction between agricultural management practices and environmental conditions in shaping the phytochemical profile and antioxidant potential of medicinal and aromatic plants.

Contributions focusing on field-based studies, greenhouse trials, or modeling approaches that connect crop cultivation methods with bioactive compound production are particularly welcome.

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