

Special Issue

Modelling for Prediction of Horticultural Plant Growth and Defense—2nd Edition

Message from the Guest Editor

This Special Issue of *Plants* focuses on novel developments and applications of descriptive, predictive, and prescriptive models in two key domains:

- Plant growth: Innovations in factor identification, dynamic modelling, forecasting, and impact analysis related to growth processes such as ageing, crop load, yield, dormancy, flowering, and nutrition.
- Plant defence: Advances in modelling and analysing natural defence mechanisms against diseases and pests, including system dynamics, multi-scale interaction analysis among plants, pests, biocontrols, and the environment, as well as decision-support tools for Integrated Pest Management (IPM).

The contributions in this issue span multiple modelling paradigms, from mechanistic and physiological models to data-centric approaches leveraging machine learning and artificial intelligence. Collectively, these studies illustrate the expanding role of modelling in understanding complex plant–environment interactions and supporting evidence-based management in modern horticultural systems.

Guest Editor

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Deadline for manuscript submissions

30 September 2026



Plants

an Open Access Journal
by MDPI

Impact Factor 4.1
CiteScore 7.6
Indexed in PubMed



mdpi.com/si/257849

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About the Journal

Message from the Editor-in-Chief

Plants is an open access journal which provides an advanced forum for research findings in areas related to plant function, its physiology, biology, taxonomy, stresses, and its interactions with other organisms. It publishes original research articles, reviews, reports, and conference proceedings (peer reviewed full articles) and communications. In original research papers, it is important that full experimental details are provided. We also encourage timely reviews and commentaries on topics of interest to the plant research community.

Editor-in-Chief

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