

Special Issue

Smart Spraying Technology in Orchards: Innovation and Application

Message from the Guest Editors

This Special Issue explores how smart spraying technology, driven by sensor and image recognition systems, can revolutionize orchard management by optimizing pesticide use, minimizing environmental impact, and ensuring the quality and safety of agricultural products. By enabling real-time monitoring of orchard environments, pest infestations, and disease outbreaks, smart spraying technology allows for precise, targeted applications that reduce pesticide residues and waste, ensuring effective deposition on fruit tree targets. This Issue will focus on the latest innovations and evaluations of smart spraying systems, with a particular emphasis on improving the efficiency of pest and disease monitoring, reducing application volumes, and enhancing precision. We welcome interdisciplinary research spanning agriculture, agricultural machinery, artificial intelligence, and botany. Contributions may address the development and application of smart spraying technologies, the assessment of environmental impacts, and the effectiveness of these technologies across various fruit tree species. Topics may also include IoT- and big data-based spraying management.

Guest Editors

Dr. Pengchao Chen

1. College of Electronic Engineering and Artificial Intelligence, South China Agricultural University, Wushan Road, Guangzhou 510642, China
2. National Center for International Collaboration Research on Precision Agricultural Aviation Pesticide Spraying Technology, Guangzhou 510642, China

Prof. Dr. Juan Wang

Mechanical and Electrical Engineering College, Hainan University, Haikou 570228, China

Deadline for manuscript submissions

closed (15 April 2026)



Agriculture

an Open Access Journal
by MDPI

Impact Factor 4.5
CiteScore 7.8



mdpi.com/si/222657

Agriculture
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
agriculture@mdpi.com

[mdpi.com/journal/
agriculture](https://mdpi.com/journal/agriculture)





Agriculture

an Open Access Journal
by MDPI

Impact Factor 4.5
CiteScore 7.8



[mdpi.com/journal/
agriculture](https://mdpi.com/journal/agriculture)



About the Journal

Message from the Editor-in-Chief

Agriculture (ISSN 2077-0472) is an international, scholarly and scientific open access journal publishing peer-reviewed research papers, review articles, communications and short notes that reflect the breadth and interdisciplinarity of agriculture.

Editor-in-Chief

Prof. Dr. Les Copeland
Sydney Institute of Agriculture, School of Life and Environmental
Sciences, The University of Sydney, Sydney, NSW 2006, Australia

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), GEOBASE, PubAg, AGRIS, RePEc, and other databases.

Journal Rank:

JCR - Q1 (Agronomy) / CiteScore - Q1 (Plant Science)