

Special Issue

Digital Agricultural Systems for Orchard and Vineyard Management

Message from the Guest Editors

The new climate scenario demands smart, sustainable solutions for perennial crops like orchards and vineyards. Precision agriculture technologies provide insights into plant stress, yield, fruit ripeness, and quality control. Furthermore, the fourth industrial revolution (Industry 4.0) is driving the development of smart strategies to support fruit- and wine- growers in qualitative monitoring and decision-making processes. Several technological toolboxes already in use and arising from research can address the current needs in terms of sustainability and increased quality and quantity of information. This Special Issue invites contributions focused on innovative sensing techniques and data fusion approaches tailored to fruit and grape production and monitoring. Topics may include precision management of perennial crops, proximal sensing, water stress monitoring, new technologies for fruit quality assessment, optical sensors, prototype development and field validation, and IoT and sensor integration for decision support systems (DSS). Emphasis is placed on scalable, integrated solutions suitable for field deployment in orchards and vineyards.

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Deadline for manuscript submissions

20 June 2026



Agronomy

an Open Access Journal
by MDPI

Impact Factor 3.4
CiteScore 6.7



mdpi.com/si/257772

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