agronomy

Editorial

New Trends in Disease and Pest Management: Challenges and Opportunities

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Horticultural and field crops are affected by a number of pests and diseases caused by arthropods, bacteria, fungi, oomycetes, viruses, virus-like organisms, and nematodes. The geographical range of most of these pests and pathogens is expanding as a result of growing global trade and environmental change [1]. Perennial horticultural crops are grown for a number of years; thus, long-term strategic decisions on pest and disease management are critical. Cultivar and rootstock selection as well as orchard planning should be defined prior to crop establishment. Short-term tactical decisions, such as spraying of plant protection products and cultural practices, should also be planned and implemented for proper pest and disease management [2]. Field crops are cultivated over large areas and management strategies should carefully consider the spatial dimensions and complex interactions with the surrounding landscape.

Worldwide, the use of plant protection products must comply with stringent regulations, aimed at reducing the risks and impacts on public health and the environment, avoiding the development of pest and pathogen resistance, and preserving ecosystem services that benefit the biological control of pests [3]. Alternative methods, such as biocontrol agents and semiochemicals, are becoming increasingly important in pest and disease management. These approaches are particularly suited to integrated pest management and organic production, where they are preferred over the use of synthetic chemical pesticides [2].

The papers in this Special Issue include reviews and research articles covering damages caused by fungi, viruses, and insects in a diversity of crops, such as grapevines, citrus, almonds, loquat, kiwifruit, apple, cereals, peanut, and saffron. The efficacy of chemical fungicides has been evaluated in terms of seed dressing [4], foliar applications scheduled based on epidemiological information [5,6], and assessing fungicide sensitivity [7]. The efficacy of alternative products including biocontrol agents [8,9], semiochemicals [10,11], and mycorrhizas [12] has also been considered in this Special Issue. León et al. [13] addressed the threat to almond orchards represented by new *Diaporthe* species causing twig canker and shoot blight. Jeevanandham et al. [14] analyzed the future perspectives for *Sesamia inferens* management in cereals supported by new molecular and biotechnological approaches. Finally, Velasco et al. [15] provided an historical overview of viruses affecting Mediterranean intensive horticultural crops and how disease management methods evolved. The works included in this Special Issue cover a great diversity of regions, environments, and agronomic conditions, with substantial contributions by early career researchers.

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