Plants

an Open Access Journal by MDPI

CiteScore: 7.6
Indexed in PubMed
Impact Factor: 4.1

Special Issue Reprint

Natural Compounds for Controlling Plant Pathogens

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The impact of climate change on the environment brings with it numerous negative consequences for agroecosystems, among which are the yield losses caused by the action of pest insects and the deterioration caused by fungi and their mycotoxins. The combined management of agricultural practices that integrate the use of resistant genotypes, transgenic events for insect control, and the use of synthetic pesticides is the most commonly used strategy for the prevention and control of agricultural pests. However, the potential negative impacts of synthetic pesticides on the environment and food security, added to the emergence of resistance, drive the search for natural alternatives for pest control. Studies have shown that natural compounds can inhibit the growth and spread of plant pathogens through a variety of mechanisms. In addition, compared with synthetic pesticides, natural compounds tend to be more environmentally friendly, safer, and less likely to induce resistance. Therefore, the use of natural compounds as pesticides has great potential in agriculture. This Reprint aims to bring together recent advances in this dynamic and interdisciplinary field. The collection brings together original research articles that address different aspects of natural-product-based plant disease management, including discovering new bioactive substances, evaluating their activity against important phytopathogens, and exploring their potential mechanisms of action. Taken together, the contributions in this Reprint represent an important step toward advancing knowledge in the field of natural-product-based plant protection.

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