

Special Issue

Advances in Plant Safety: Analytical Methods for Pesticide and Contaminant Detection in Crop Products

Message from the Guest Editors

Crop product safety is key to food security and environmental sustainability. Analytical methods provide data on threats, supporting exposome analysis, ecological studies, and food safety. Modern techniques face new challenges: sample preparation now follows green chemistry principles, emphasizing miniaturization and chemical economy. These protocols support advanced instruments that detect ultra-trace analytes and analyze multiple contaminants at once. The impact of co-occurring residues—pesticides, mycotoxins, plant toxins, and emerging pollutants—remains unclear, but complex datasets will improve ecotoxicology and toxicology risk assessments. Global trade brings exotic produce treated with diverse agrochemicals, while customs barriers complicate control. New methods for less-studied matrices are needed to harmonize results globally. Toxicological data also highlight pesticide metabolites as regulatory targets, driving labs to evolve. The difference between an agricultural product and food is its safety. This Special Issue explores advances helping close that gap.

Guest Editors

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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.

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