# Special Issue

# Integrating Spectroscopy and Machine Learning for Crop Phenotyping

## Message from the Guest Editors

The development of spectroscopic technologies over the past two decades has revolutionized this field. Techniques such as near-infrared (NIR) spectroscopy, hyperspectral imaging, and multispectral imaging provide rich, non-invasive datasets capturing the biochemical and physiological status of plants. At the same time, advances in computational power have been essential for handling this high-dimensional information. The progress in artificial intelligence (AI), particularly in machine learning (ML) and deep learning, has been substantial, providing sophisticated tools capable of interpreting these complex spectral signatures and moving beyond traditional chemometric methods to reveal intricate patterns related to plant performance. We invite the submission of high-quality original research articles, comprehensive reviews, and perspectives. We strongly encourage submissions detailing novel applications of spectroscopy and imaging for trait estimation, stress detection, yield prediction, and the analysis of fruit quality, composition, and ripening dynamics. Furthermore, we are interested in the implementation of advanced computational methods.

## Guest Editors


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## Deadline for manuscript submissions

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