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Omics Approaches for Crop Improvement

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Message from the Guest Editors

The growing human population and climate change are imposing unprecedented challenges for the global food supply. Therefore, it is urgent to improve agronomical important traits such as yield, resistance, and nutritional value by pivoting direct and indirect genetically-assisted approaches. High-throughput screening technologies, known as "omics" (e.g. genomics, transcriptomics, proteomics, metabolomics, and phenomics), are retrieving large volumes of crops data that can be used to speed up trait improvement. Coupling these data with bioinformatics and machine-learning approaches, are helping us to elucidate the mechanisms behind crop features. Omics datasets are not only being generated from tissues of a single genotype, but are also used to explore crop performance at the macro-scale interactions with microbes, and environmental conditions.

This Special Issue will offer updated views on multidimensional large-scale omics-based approaches. Specifically, we welcome studies that explore the uses of the omics and their integration through trans-disciplinary bioinformatics, as tools to improve qualitative and quantitative traits in crop species.

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Message from the Editor-in-Chief

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