

Special Issue

Precision Assistance for Crop Genetic Improvement: Big Data, Artificial Intelligence and Machine Learning

Message from the Guest Editor

The rapid growth of genomics, phenomics, and multi-omics has created unprecedented opportunities for data-driven crop breeding. However, linking genotype, phenotype, and environment remains a significant challenge. Artificial intelligence (AI), machine learning (ML), and big data analytics now provide powerful tools to accelerate genetic gain by enabling predictive modeling, intelligent decision-making, and precision breeding design. This Special Issue, *Precision Assistance for Crop Genetic Improvement: Big Data, Artificial Intelligence and Machine Learning*, aims to highlight advances at the interface of computational methods and plant breeding. We particularly encourage submissions that present cutting-edge research on the following topics:

- Multi-omics data mining and integrative analysis of complex traits.
- Genomic prediction and modeling of genotype–environment interactions.
- AI-driven high-throughput phenotyping and data analysis.
- Data-driven approaches for genome editing and intelligent breeding.
- Computational platforms, algorithms, and tools for precision crop improvement.

Guest Editor

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Editor-in-Chief

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