

Special Issue

Genetics and Genomics-Based Crop Improvement and Breeding

Message from the Guest Editor

In the past decades, although plant breeding has greatly improved the performance of crops, the growing food demand in the world due to the increase of population and decreasing of available land requires these cereal crops both more productive and resistant to harsher environmental conditions. The development of Next Generation Sequencing (NGS) has greatly improved the course of scientific research. Researchers are facing an unprecedented opportunity to identify genes controlling complex phenotypes and understand how the genes fulfill functions through the interaction between genes and environmental factors. This provides a new approach for breeding programs in cereals that can significantly reduce the cost and time needed by traditional breeding or domestication approaches. However, we should note that most breeding programs still mainly depend on conventional breeding selection performed in repeated and time-consuming fieldwork. Therefore, it is rather essential to make full use of the advancements on NGS of cereal crops and high-throughput phenotyping and genotyping platforms to genetically identify, excavate more germplasm resources and loci/genes toward crop improvement.

Guest Editor

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