Special Issue

Genomics-Enabled Chromosome Engineering in Plant Breeding and Genome Studies

Message from the Guest Editors

Climate change and variability have increasingly led to new biotic and abiotic stresses for plants. Developing superior varieties resilient to variability is necessary. Extensive breeding efforts have drained the primary gene pool. Thus, there is a constant need to introduce novel genetic variation into the primary gene pools of plant breeding programs. Significant work has been performed to bridge the gene flow from the secondary and tertiary gene pools into the primary gene pools of domesticated crops via meiotic homoeologous recombination-based chromosome engineering. The genomic technologies and resources currently available have dramatically improved the efficacy and throughput of chromosome engineering in alien introgression and genome studies in plants. This Special Issue is to highlight the major accomplishments and progress in this research field, including meiotic homoeologous recombination-based alien introgression and genome mapping/analysis, genome modification and evolution, haploidization and polyploidization, and genetic control/manipulation of breeding-related mitotic and meiotic processes.

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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, 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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