



plants



an Open Access Journal by MDPI

Genomics-Enabled Chromosome Engineering in Plant Breeding and Genome Studies

Guest Editors:

Dr. Xiwen Cai

USDA-ARS, University of
Nebraska-Lincoln, Lincoln, NE,
USA

Dr. Jeffrey Boehm

USDA-ARS, University of
Nebraska-Lincoln, Lincoln, NE,
USA

Deadline for manuscript
submissions:

closed (31 August 2023)

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.



mdpi.com/si/138997

Special Issue



an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Dilantha Fernando
Department of Plant Science,
University of Manitoba, Winnipeg,
MB R3T 2N2, Canada

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), PubMed, PMC, PubAg, AGRIS, CAPlus / SciFinder, and other databases.

Journal Rank: JCR - Q1 (Plant Sciences) / CiteScore - Q1 (Ecology, Evolution, Behavior and Systematics)

Contact Us

Plants Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/plants
plants@mdpi.com
[X@Plants_MDPI](https://twitter.com/Plants_MDPI)