Special Issue

Exploration of Aneuploidy and Polyploidy in the Evolution of Horticultural Crops and Crop Wild Relatives

Message from the Guest Editors

In plants, variations in chromosome number, e.g. aneuploidy and polyploidy, play a key role in both the natural evolution of species and human-driven breeding. In horticultural crops, these cytogenetic phenomena are significant not only for understanding evolutionary history but also for advancing breeding strategies. The evolution of horticultural crops and their wild relatives has been shaped not only by human selection and genetic mutations but also by key cytogenetic processes, including polyploidy, chromosomal restructuring, hybridization and introgression between cultivated and wild plants, as well as alterations in genome organization. In this Special Issue, we invite original research and review articles addressing topics such as the following: 1) Cytogenetic evolution of horticultural crops and their wild relatives; 2) classical and molecular cytogenetic approaches (e.g., chromosome number variation, chromosomal rearrangements, chromosomal markers); 3) cytogenetic studies on horticultural crops that remain poorly characterized, particularly those lacking data on chromosome number, structure, or comparative maps with related wild species.

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