



Application of Wild-Species Germplasm Genetic Variation in Crop Improvement

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Message from the Guest Editor

Dear Colleagues,

Both domestication and breeding involve a strong selection, thus creating genetic bottlenecks and reducing allele diversity. The genetic diversity present in the ancestral species of crop plants and their relatives (crop wild relatives; CWRs) provides a source of alleles to increase crop resiliency and quality. However, because wild plants are agronomically unadapted, beneficial wild alleles are linked to alleles which reduce crop performance. Multiple cycles of crossing and selection are needed to break this linkage drag; the time required to produce new cultivars is a major impediment to use. Especially with the changing challenges for farming, breeders will need to draw from these reserves over generations. Germplasm banks are strategic; however, much of the genetic diversity of CWRs remains uncollected, and the destruction of their native habitats often makes collection a race with extinction. This volume will explore the contributions of CWRs to world food security, and issues surrounding their collection, exchange, and use.





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