Special Issue

Mapping Abiotic Stress-Tolerance Genes in Plants

Message from the Guest Editor

Tolerance to abiotic stresses caused by environmental conditions can prevent yield loss in crops for sustaining agricultural productivity. For each crop or plant species, there are many abiotic threats such as changes in temperature, soil salinity, water shortage, and soil contaminants. Plants need to posses genes conferring tolerance to these abiotic stresses to adapt to the changing environment in which they are being grown. Foreseeing climate changes, plant breeders are undertaking efforts to identify and transfer genes for tolerance to high/low temperature, soil salinity/alkalinity, drought, or heavy metals, into new cultivars. Plant molecular geneticists have identified many physiological pathways and mechanisms involved in tolerance to various abiotic stresses in some plants. Many metabolites, enzymes, and transcription factors associated with tolerance to these abiotic stresses have been identified. With the advent of whole-genome sequencing in many important crops, it is time to map the detailed chromosomal locations of known genes that are involved in conferring tolerance to various abiotic stresses in each crop.

Guest Editor

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