

Special Issue

Molecular Biology and Genetic Breeding of Tree Stress Resistance

Message from the Guest Editor

Forest ecosystems play a pivotal role in maintaining the global carbon balance, conserving biodiversity, and providing forest and fruit resources. However, under the influence of global climate change and intensive human activities, the intensity and frequency of outbreaks of abiotic stresses (such as drought, soil salinization, and extreme high temperatures) and biotic stresses (such as insect pests and pathogens) have surged dramatically. As perennial woody plants, trees possess unique biological characteristics (such as long generation cycles, high heterozygosity, and huge genomes), which determine that their molecular mechanisms in response to adversity differ significantly from those of annual herbaceous plants. Deeply dissecting the molecular networks by which trees perceive and transmit stress signals and generate resistance responses, integrating multi-omics data to mine key resistance genes, and utilizing modern biotechnological tools for genetic improvement of stress resistance are currently the hotspots and challenges in forest tree genetic breeding research.

Guest Editor

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