Special Issue

Disease Resistance Breeding of Field Crops

Message from the Guest Editors

Resistance breeding is an important strategy for reducing crop losses caused by a number of different pathogens including fungi, bacteria, and viruses. Traditional crop breeding methods have been quite successful in improving disease resistance for decades based on the identification and utilization of natural and induced germplasms for multiple disease resistances. The development and precise identification of new crop germplasms with diverse disease-resistant genes from field crops and their wild relatives using wide hybridization remain to be effective to expand genetic resources. The advanced techniques of cytogenetic, functional genomics, and genome-based molecular marker systems with low costs and high-throughput data processing along with the availability of different mapping populations and bioinformatics tools are benefiting crop breeding strategies that utilize diverse forms of resistance. In addition, techniques for the induction of new variability through mutagenesis and genome/gene editing are emerging as significant strategies for crop improvement. Pyramiding genes is also a promising avenue for the present and future global crop breeding.

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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.

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