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Functional Genomics in Plant Disease Resistance

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Message from the Guest Editors

In nature, crops are infected with pests and diseases which causes substantial economic losses. Development and cultivation of resistant varieties are most viable and environmentally friendly options. To breed crop varieties with improved disease resistance requires the identification and functional characterization of genes that control important traits related to stress tolerance. Identification of genes and functions can be achieved by two approaches, namely, forward and reverse genetics. Forward genetics is mainly based on transcriptomics, translomics, proteomics metabolomics and association studies. Meanwhile, reverse genetics involves gene silencing/knockout or overexpression approaches such as transgenic overexpression, mutations, RNAi, genome editing and virus-induced gene silencing. Functional genomics helps in candidate genes discovery and revealing functions, thus facilitating successful utilization of resistance genes in developing disease-resistant varieties in crops.

This Issue is designed to accept papers related to functional genomics in disease resistance focusing on gene discovery, functional characterization and deciphering disease resistance mechanisms.



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Message from the Editor-in-Chief

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