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**FUNGAL DISEASES OF RICE AND
THEIR MANAGEMENT**

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FUNGAL DISEASES OF RICE AND THEIR MANAGEMENT

Edited by

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CHAPTER 4

A Review of Conventional and Molecular Approaches for the Management of Rice Blast Disease

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ABSTRACT

Rice blast disease is caused by *Magnaporthe oryzae* causing huge crop losses worldwide. Recent technological advancement brought new horizons in developing resistance against rice blasts. Conventional breeding approaches have been followed to develop new resistant varieties that took decades to process. The molecular marker-based selection, germplasm screening, Genome-wide association mapping, and quantitative trait locus (QTL) mapping helped in understanding the natural existing sources of resistance. These have been utilized in marker-assisted selection and gene pyramiding to accelerate the development of resistant varieties. Next, allele mining and their utilization in the genetic engineering of rice plants helped in developing cisgenics/intragenics to bring resistant traits from diverse cultivars. A potent approach is to create new sources by artificial mutation/insertion methods will help in providing lost lasting resistance against rice blast.

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