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RESEARCH PAPER

Traditional landraces of rice for blast (*Magnaporthe oryzae*) resistance and analysis of biochemical components involved in disease reaction

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Rice blast disease is the major biotic threat to rice production and the pathogen *Magnoporthe oryzae* is highly genetically diverse. Rice germplasm are the important reservoirs of valuable traits possessing specialty uses and tolerance to various biotic and abiotic stresses. The present study was aimed to evaluate the collected landraces of rice against blast and to understand the biochemical changes in landraces in response to blast infection. Field evaluation of 186 rice landraces collected from Karnataka state, along with improved lines resulted in identification of land races with consistent resistance to blast. The key biochemical factors involved in disease reaction, Phenol, orthodihydroxy phenol, protein and enzyme PAL at different crop growth stages was studied. Total phenol, OD phenol and PAL accumulation and increase were rapid and more in resistant landraces as well as in improved lines due to blast infection. Landrace Beesginsali, Siddasala and Casebatta showed highly resistant reaction with disease grade either 1 or 0 and lesion type A or B. Enhancement of defense responsive biochemical components was quick and more in these landraces. These resistant landraces may serve as source of novel allele/genes to blast for future study.

Key words : Rice, Landraces, Blast, Resistance, Biochemical factors

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