

Category	: International Rice Research Conference
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Keyword 1	: Biotic stress tolerance
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Title of Entry	: Assessment of partial physiological resistance and level of susceptibility to sheath blight in a set of improved rice varieties under controlled and field conditions
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Sheath blight (ShB), caused by <i>Rhizoctonia solani</i> , is one of the most important rice diseases worldwide especially under irrigated agro-ecosystems. Till date, no rice accession with complete resistance to ShB has been reported. The present study was undertaken to compare the partial physiological tolerance and level of susceptibility to ShB among set of improved rice varieties. Seven varieties (DRR Dhan39, DRR Dhan42, DRR Dhan43, DRR Dhan44, SahbhagiDhan, Swarna and PR124), were evaluated for quantitative measurement of partial physiological tolerance to ShB under control conditions using detached tiller method. Spatial spread of ShB was studied under field conditions. Artificial inoculation was done using pure culture of <i>Rhizoctonia solani</i> . Variation between rice genotypes was observed for all the disease variables. Disease severity and vertical sheath colonization were highly correlated variables. Three genotypes viz. DRR Dhan39, DRR Dhan42, and DRR Dhan43 had comparatively lower number of lesions, lesser disease severity, limited vertical sheath colonization and relative lesion height. DRR Dhan44 displayed the highest level of disease variables. This was followed by Sahbhagi Dhan and PR124 under controlled conditions. Swarna had intermediate response to different disease variables. A significant effect of varieties and period for disease development was observed in the tested varieties under field conditions. Overall mean of all the seven varieties indicated that the disease progression gradually increased with time. The lowest disease severity and incidence was observed in PR124 while the highest was observed in DRR Dhan42 followed by Swarna under field conditions. The morphological traits such as number of tillers were positively and plant height was negatively correlated with disease development. Our results suggest that the improved rice varieties had different level of susceptibility/tolerance to ShB and

this method allows an accurate quantification of the level of physiological resistance/susceptibility of the rice genotypes.

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