

SCREENING FOR TOLERANT GENOTYPE TO SALINE WATER SUBMERGENCE STRESS IN RICE (*Oryza sativa* L.)

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ABSTRACT

Saline water submergence is a newly emerge abiotic stress jeopardizing rice production especially for the rice fields located nearby or alongside coastal areas. The stress was caused by the intrusion of sea water into those rice fields causing flash flood mainly during monsoon season. The present study was conducted as an attempt to screen for tolerant genotype against saline water submergence at seedling stage. There were six genotypes involved in the study mainly IR64-Sub1 as submergence tolerant control, Pokkali as salinity tolerant control, IR64 and MR297 as susceptible control, MR284 and MR253, a local rice cultivar respectively. The rice seedlings were submerged in saline water at 0, 4, 8 and 12 dS/m for 14 days while the non-submerged plant was control of the experiment. Seedling growth attributes, survival rate and recovery rate were recorded before and after de-submerged for three consecutive weeks. The highest survival rate at 83% was recorded in IR64-Sub1 under 0 dS/m, followed by MR284 (17%), MR297 (17%) and Pokkali (8%). All genotypes however were susceptible to saline water submergence at 4, 8 and 12 dS/m. Hence, potential genetic resource of rice originated from coastal area in the future screening is crucial to increase the possibility of identifying tolerance genotype to saline water submergence stress which later will be used as a donor parent in the breeding program.

Keywords: Rice, saline water submergence, tolerant genotype