

Characterization of Drought Resistance of Some Selected Traditional Rice Varieties of Sri Lanka

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Rice (*Oryza sativa*) of family Poaceae, is an important food crop and considered a drought susceptible crop. This experiment was aimed to screen some selected Sri Lankan traditional rice varieties; three cultivars of Niyana wee and Podi niyana wee (PN) with reference to Dular, Black Gora (BG) and IR64 as positive controls and BG 370, BG 374 as negative controls for drought resistance using morphological and molecular methods. The study was designed as a pot and block experiment in green house conditions. Panicle initiation dates and shoot height were recorded once a week under field conditions. The varieties were grown in complete random blocks for 30 days and imposed with an artificial drought of 15 days and were re-watered for ten days. Then drought scores and drought recovery scores were recorded according to Standard Evaluation System of International Rice Research Institute. Shoot height, fresh weight, dry weight and root length, fresh weight, dry weight of uprooted plants were measured after drought and drought recovery periods. DNA extractions of all varieties were tested with two drought resistance related SSR primers; RM234 and RM252. Dular and IR64 recorded highest shoot height. Dular showed the lowest increment of drought scores. In molecular characterization, Niyana Wee II, PN, Dular, BG and IR64 gave bands with both primers. The present study collectively suggests, tested rice varieties showed resistance to drought conditions. The molecular assay supported these results. Therefore, these varieties can be propagated in drought prone areas to avoid crop losses due to drought.

Key words: *Rice, drought, drought resistance*

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