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GENETIC ANALYSIS AND MARKER ASSISTED SELECTION (MAS) OF COLD TOLERANT RICE

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ABSTRACT

The present investigations have helped to establish clear-cut identity of all the cultivars under consideration which will be of great utility for the protection of Plant Breeders' Rights. Six markers (RM556, RM562, RM594, RM7075, RM1287 and RM3843) were used to evaluate BPR1 and BPR2 lines with donor parent BRRI dhan36 by amplification of the DNA sequence to cold tolerance. The bands obtained BPR1 and BPR2 lines were compared to the band obtained from cold tolerance BRRI dhan36. The BPR1 and BPR2 lines having similar banding pattern to BRRI dhan36 were considered as cold tolerant. So, cold tolerant QTL has been introduced to these two lines. The average growth duration of BPR1, BPR2, BRRI dhan28 and BRRI dhan36 were 149,148,148 & 145 days with the average yield of 6.50 t/ha, 7.10 t/ha, 7.20 t/ha & 6.10 t/ha respectively. According to all consideration, BPR2 produced highest yield (7.10 t/ha) and cold tolerant performance which was higher than the other genotypes. The objective of this study was to markers related to cold tolerance that can be used to facilitate marker-assisted breeding and evaluation of genotypes in the cold prone environments under the management practices of researchers.

Keywords: MUS, Extraction, Cold, QTL, Rice