

**SCREENING OF DROUGHT RESPONSIVE GENES OF RICE (*ORYZA SATIVA* L.) VARIETY BG 358 BY DIFFERENTIAL HYBRIDIZATION OF A cDNA LIBRARY**

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Rice (*Oryza sativa* L.) is a cereal with high economic and social values, which is used as a staple food by more than half of the world's population. Drought stress, is one of the most important environmental factors which limits the growth and productivity of many economically important crops including rice. In the present study, a previously prepared cDNA library of the rice variety 'Bg 358' (identified as drought tolerant rice variety through previous physiological studies) which was subjected to drought stress was used for screening of drought responsive genes. The cDNA clones were subjected to differential hybridization using total cDNA probes prepared from drought stressed and drought non-stressed rice leaves. Differential Hybridization of 384 cDNA clones identified 21 up-regulated and 65 down-regulated cDNA clones harboring drought responsive genes. Out of the identified cDNA clones, 5 up-regulated and 5 down-regulated cDNA clones were subjected to PCR amplification with M13 universal primer and DNA sequencing was performed. DNA sequencing and subsequent homology search was performed with available DNA/protein databases to identify putative genes harboured by the cDNA clones. cDNA fragments harboured by the selected clones were homologous with *Oryza sativa* japonica group DNA, completely sequenced, cultivar; 'Nipponb' are representing the drought tolerant responsive genes in Chromosomes 2, 3, 7 and 9 with 94-100 % identity. Putative genes carried by the up- and down-regulated clones were homologous with physiological functions related to drought stress, namely stabilization of cell-membranes, modification of root traits for drought tolerance and controlling the osmotic adjustment. The genes identified as drought tolerant could be used as markers to screen drought tolerant rice varieties in breeding programmes.