DETECTION OF GENE CONTROLLING EARLY HEADING DATE IN RICE PLANT USING QTL ANALYSIS METHOD

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Summary

Monitoring growth duration in rice is one of key factor to ensure flexible and high effective cropping system. In rice, heading date is a key determinant in seed formation and yield, adaptation to different cultivation areas and cropping seasons. Objective of this study was to identify QTL/gene controlling early heading date in indica rice in northern of Vietnam. BC_2F_2 population derived from KD18 and TSC3 varieties including 93 plants were characterized the segregation of day to heading in autumn season 2014. Whole genome of KD18 and TSC3 were surveyed with 1905 DNA marker and 90 polymorphic marker were identified. Result of genotyping BC_2F_1 plants showed 82/90 locus were homologous with KD18 alleles and 8/90 marker were heterozygous. QTL analysis of heading date detected one QTL, SGD1, on short arm of chromosome 3. Effect of allele SGD from TSC3 decrease day to heading. Comparision of position of SGD1 with other studies showed that it located the same locus as *Hd9* gene. These results will be useful in marker-assisted breeding to improve rice genotype with early heading date in Vietnam climate condidtion.

Keywords: *Day to heading, DNA marker, QTL analysis, Hd9.*