

Genome Wide Association Studies for Flowering Time and Plant Height in *Indica* MAGIC Lines of Rice (*Oryza sativa* L.)

A Anisha, N Chamundeswari, V Satyanarayana Rao and M Swapna
Department Genetics and Plant Breeding, Agricultural College, Bapatla, A.P.

ABSTARCT

Genome wide association studies in a subset of *indica* MAGIC lines using MLM and GLM analysis through TASSEL identified 15 significant SNPs for 15 quantitative trait loci out of 27,041 SNP markers. Two previously identified QTLs viz., *qFDN-1* and *RFT-1* located on chromosomes 3 and 6 respectively were identified for flowering time and three QTLs were detected on chromosome 1 (*qPHT-1* and *ph1.1*) and chromosome 6 (*ph6*) for plant height. Six novel QTLs (*qDFF2*, *qDFF3*, *qDFF6*, *qDFF6-1*, *qDFF8* and *qDFF10*) for flowering time and four QTLs (*qPH3*, *qPH4*, *qPH8* and *qPH12*) for plant height were detected in the present investigation. Further, eleven candidate genes with unknown function were also identified by GWAS using MLM and GLM analysis.

Key words: *Flowering, GWAS, MAGIC lines, Plant height, Rice, SNP, TASSEL*