

DEVELOPMENT OF JASMINE 85 LINES CARRYING GENES RESISTANCE TO BLAST AND BROWN PLANTHOPPER USED MARKER ASSISTED SELECTION

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Summary

By using marker assisted selection (MAS), resistance gene *Pita*, *Bph14*, *SalT* and *Pikp* from donor parents OM6377 and Jasmine 85-10 have been integrated to recipient parent, high quality and short duration rice Jasmine 85. Advanced backcrossing generations were developed by using MAS. Three individuals carrying all resistance genes were selected from the pyramided cross between F₁ generation derived from the cross between Jasmine 85 with OM6377 carrying *Pita* and *Bph14* with Jasmine 85-10 carrying *Pikp*. Total three individuals were selected carrying four resistance genes from BC₁F₁ generation. At BC₂F₁ generation, however, due to the unfavourable weather condition, we could not select three individuals carrying *Pita*, *Pikp* and *Bph14*. There was no plant carrying four resistance genes with *SalT*. From BC₂F₂ segregation population, among 207 individuals, we have successfully selected two individuals homozygous for three resistance genes *Pita*, *Pikp* and *Bph14*. Ten individuals carrying two of three resistance genes and 5 individuals carrying only one resistance gene those were homozygous for the alleles from donor parents and homozygous for the alleles from recipient parent of each gene were selected. These selected lines carrying resistance genes with genomic background of Jasmine 85 are valuable in breeding of high quality, commercial Jasmine 85 variety with resistance to blast disease and brown planthopper in Vietnam.

Key words: Marker assisted selection, resistance gene *Pita*, *Pikp*, *Bph14*, *SalT*, backcross, pyramiding gene, Jasmine 85 rice variety.