

THE EVALUATION OF RESISTANT GENE ANALOGUES (RGAS) ON TWO WILD *MUSA* SPECIES AGAINST FUSARIUM WILT DISEASE

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ABSTRACT

Information about the molecular aspects of genes that control the mechanism of resistance to *Fusarium oxysporium cubense* (*Foc*) wilt disease is still very limited. Most of resistance genes (R genes) encode receptor proteins. About 70% of receptor proteins of R genes contain the domain nucleotide binding site and leucine rich repeat (NBS-LRR) which control resistance to pathogens. The expression of resistant gene analogues (RGAs) on *Foc* infected banana plantlets will be evaluated in this study. The two wild *Musa* species (*Musa acuminata* ssp. *halabanensis* and *Musa balbisiana* from Nusa Tenggara Timur) used in this research are native to Indonesia. Two *Foc* isolates (TR 4 or VCG 01213/16 and race 1 or 0124/5) were used for evaluation. Four RGAs were used on semi quantitative RT-PCR of *Foc* infected root samples. Two RGAs namely MNBS16 and RGC2 were expressed on only the infected plants, while MNBS5 and MNBS15 were expressed on both infected and uninfected plants. From this study it can be concluded that MNBS16 and RGC2 were involved in the resistance mechanism of banana against *Foc*.

Keywords: RGAwild, *Musa* species, *Fusarium* wilt