

Evaluation on rhizoctonia solani disease resistance of transgenic watermelons expressing foreign ant

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ABSTRACT

Taiwan is located at the tropics and the subtropics, its climate is suited for the melons cultivation, various watermelon species were cultivated in large area. The watermelon is a cucurbitaceae, dicotyledons flowering plant. Watermelon is one of economically important agricultural products in Taiwan. The plant fungal pathogens which cause severe yield losses, still can't be prevented and controlled without environmental pollution. We tried to introduce the anti-fungal protein genes into watermelons to control watermelon diseases. There is still no paper about transgenic watermelon related to anti-fungi ability. This investigation were tried to set up an approach of Agrobacterium-mediated transformation of watermelon carrying with Bo-AFP3 or Cp-AFP3. The anti-fungal protein genes, Cp-AFP3 and Bo-AFP3, were kindly supplied by Dr. Jei-Fu Shaw, Academia Sinica. Night putative Bo-AFP3 transgenic lines and six putative Cp-AFP3 transgenic lines were obtained. PCR and Southern blot analysis confirmed that the foreign genes were incorporated into the genic DNA of the regenerants. The transgenic lines were challenge with *Rhizoctonia solani* by inoculation in vitro, they showed different levels of resistance, ranging from delaying of symptom development to complete resistance. Three transgenic lines were conferred with better resistance against *R. solani*.

Keywords : Watermelon、anti-fungal protein、Agrobacterium

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