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Characteristics in *Rehmannia glutinosa* transformed with resveratrol synthase

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Objectives

The objective of this study was to investigate the agronomic characteristics such as pathogenicity and photosynthesis performance in transgenic plants transformed with resveratrol synthase gene.

Materials and Methods

Pathogenicity test

Pathogen : *Fusarium oxysporum*을 were isolated from infected plants and confirmed through an identification service by CBS (Fungal Biodiversity Center-Utrecht, The Netherlands).

Incubation : *Fusarium oxysporum* (100ml의 PDB, 150 rpm, 26 ?)

Inoculation : The root systems of nontransgenic and transgenic plants were dipped into the spore suspension of final cell density (10^6 CFU/ml) of *Fusarium oxysporum*.

Disease symptom was examined after inoculating 4 weeks.

Photosynthetic Performace

After incubating the *Fusarium oxysporum*. the photosynthesis rate, stomate conductance, and water potential in non-transgenic and transgenic plants were investigated(LCA-4, Analytical Development Company Ltd. UK).

Results and Discussions

Disease symptom had fully developed 4 weeks after infection. Mortality rate due to the disease was as low as 2% in transgenic plants, but as high as 47% in non-transgenic plants. Only 12% of the transgenic plants had disease rating over 3 compared to 67% of the non-transgenic plants. In general, the transgenic lines with higher R-gluc had fewer disease symptoms than those with lower R-gluc, indicating a weak reverse association ($r=-0.67$) between R-gluc content and disease severity.