

04-1-3

The Harpin Gene Has Distinct Functional Role for Plant Growth and Morphology

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Objectives

We studied out role of harpin gene in plants by genomical and molphological analysis. Furthermore we observed that transgenic tobacco, expressing the harpin gene from *E. amylovora*, produces HR in response to the inoculation of *B. cinerea* and shows an enhanced resistance to *B. cinerea*.

Materials and Methods

1. Materials : *Nicotiana tabacum* cv. 'Havana SRI'
2. Methods : Physiological study, Southern analysis, Scanning Elictron Microscope (SEM), Flow cytometry system (FCS), Disease resistance assay

Results and Discussion

The present study on morphological and molecular level was based on differentiation of wild type tobacco plant and transgenic tobacco plant. Transgenic tobacco plant grew faster at the germination, development and flowing than wild type tobacco plant. Cell of the reansgenic tobacco plant were more smaller than cells of the wild type tobacco plant, when observed with SEM. DNA content of phase G2-M is 20.41%(wild type) and 43.82%(transgencit plant) by FCS. Finally transgenic plant showed enhanced resistance to *B. cinerea*, whereas there was no plant showing resistance in a wild type.

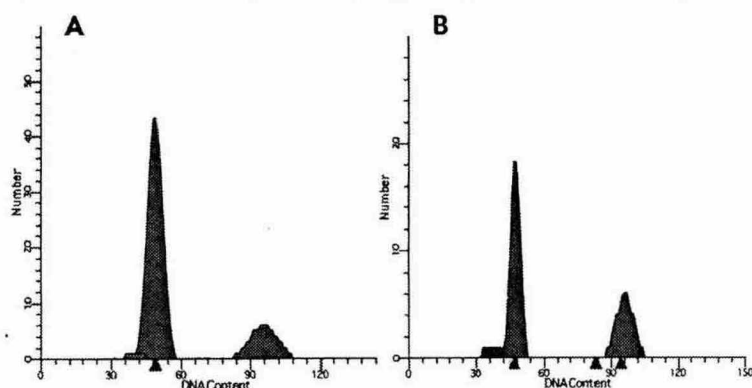


Fig. Flow cytometric analysis of DNA content using of wild type (A) or transgenic plant (B) of *N. tabacum*. The nuclei were stained with PI before analysis. Profiles represent (A) phase G0-G1, 71.25%; G2-M, 20.41%; S, 8.33%; and (B) G0-G1, 54.95%; G2-M, 43.82%; S, 10.23%.