

**SEEDLING EVALUATION OF VERTICILLIUM
WILT IN COTTON**

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Abstract

Verticillium wilt occurs throughout the U.S. and causes yield losses in cotton (*Gossypium hirsutum*). Yield losses in Arkansas due to Verticillium wilt were estimated to be 3% in 1995. Disease symptoms in the field generally occur later in the growing season and the pathogen (*Verticillium dahliae*) is usually not uniformly distributed in a field. An effective method for inoculating and evaluating seedlings for resistance would be useful. The objective of this study was to evaluate several methods of inoculating seedlings with *V. dahliae*.

Seedlings of two cultivars, 'Stoneville 474' and 'Paymaster H1330', were used. Methods included both transplanting and direct seeding. The inoculation procedure for the transplanted seedlings included two levels of mechanical root injury followed by dipping the roots into a conidia solution. Seedlings derived by direct seeding were inoculated by an inoculum drench added directly to the soil, with and without mechanical root injury, or by allowing the inoculum to soak into the soil from the bottom of the pot. Inoculations were made when seedlings were two weeks of age. Plants were evaluated four weeks after inoculation for plant height suppression and visual disease symptoms.

The transplant method exhibited more visual disease symptoms and plant height suppression compared to the direct seed method. Mechanical injury to the roots also increased symptoms. No significant differences were found between the two cultivars. Yield data from an infested location has not provided a clear difference in field resistance. Additional research is needed to confirm that seedling resistance is equal to field resistance.

