

**INHERITANCE OF RESISTANCE TO RENIFORM NEMATODE
IN AN INTERSPECIFIC CROSS OF *GOSSYPIUM***

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The reniform nematode is a serious pathogen of cotton in the U.S. The use of resistant varieties potentially could be the most economical and environmentally safe method to control the reniform nematode. However, information regarding the inheritance of resistance to the nematode is still limited. The objectives of this study were: 1) to employ generation means analysis to study inheritance of resistance to the reniform nematode in an interspecific cross of *Gossypium barbadense* L. (GB-713) by *Gossypium hirsutum* L. (NemX); 2) to collect seed from selected resistant and susceptible progeny for subsequent resistance inheritance analyses. Growth chamber assays for reniform nematode resistance were conducted during 2004-2005. The test included 720 plants representing F₁ and F₂ generations from the cross, the resistant parent GB-713 (P₁), the susceptible parent NemX (P₂), and their respective backcross generations, BC₁P₁, and BC₁P₂, that resulted from crossing parents with F₁ plants. Results from the generation mean analysis indicated that only additive effects were significant, and only one major gene appears to be involved in the resistance to reniform nematode. Seed for subsequent studies were collected after self-pollinating the following plants: 24 resistant BC₁P₂ plants; 12 resistant BC₁P₂×P₂ plants; 12 susceptible BC₁P₂×P₂ plants. The frequencies of highly resistant, moderately resistant, and susceptible progeny will be examined to find out if inheritance in these progeny sets is consistent with that predicted from generation means analysis of nematode resistance data from earlier generations.