

**LOSSES ASSOCIATED WITH THE RENIFORM NEMATODE
AND BLACK ROOT ROT IN PRODUCERS' FIELDS IN 2003**

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Recent research has been examining the potential yield losses from the interaction between *Thielaviopsis basicola* (Berk. & Broome) Ferraris (syn. *Chalara elegans* Nag Raj & Kendrick), the cause of black root rot, and the root-knot nematode, *Meloidogyne incognita* (Kofoid & White) Chitwood, by establishing paired plots in producers' fields in Ashley County. In 2003, a number of fields were again observed with severe stunting in areas of the fields early in the growing season. Soil samples from these fields indicated that the primary nematode problem in these fields was the reniform nematode, *Rotylenchulus reniformis* (Linford & Oliveira). Paired plots were established by selecting areas of fields where cotton plants were stunted early in the season and adjacent areas that appeared to have normal plant growth. One field was established in Ashley County and one field in Monroe County. Plots were a minimum of four rows by 50 ft in length, with six replications in each field. Soil from plots were assayed for nematodes, *T. basicola*, and soil fertility. The severity of black root rot was assessed as root discoloration and isolation of the pathogen. Plant growth was monitored throughout the growing season and six plants per plot were harvested for yield. Stand did not differ between affected and nonaffected plots at either location. Top weight, root weight, and plant height were dramatically reduced early in the season in the affected plots compared to the nonaffected plots, with plant height being 23 cm and 12 cm in nonaffected and affected plots and 17 cm and 7 cm in nonaffected and affected plots in Ashley and Monroe Co., respectively. Plant heights also were significantly reduced in affected plots at both sites at harvest. Soil populations of *T. basicola* were similar in both nonaffected and affected plots at both sites. However, root disease was less severe in nonaffected plots at the Ashley Co. site, the only site that seedling disease severity was assessed. Populations of the reniform nematode were 3,106 in nonaffected compared to 12,045 in affected plots in Ashley Co., and 617 in nonaffected compared to 7,922 in affected plots in Monroe Co. per 500cc of soil early in the season. Seed cotton yields were reduced 19% and 29% in the Ashley and Monroe Co. sites, respectively. This compares to seed cotton yield reductions of 33% in 2000 and 21% in 2001 for fields with a root-knot nematode x *Thielaviopsis* problem. Data from the paired plots suggest that fields with a reniform problem may also have severe early season stunting in the presence of *T. basicola*. Additional research needs to be conducted to verify that a synergistic interaction takes place between the reniform nematode and *T. basicola*.