

**USE OF FUMIGANT NEMATOCIDES AND A
FUNGICIDE TO CONTROL ROOT-KNOT
(*MELOIDOGYNE INCOGNITA*) and BLACK ROOT
ROT (*THIELAVIOPSIS BASICOLA*) ON COTTON**

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Abstract

The root-knot nematode (*Meloidogyne incognita* (Kofoid & White) Chitwood) is a serious pest of cotton (*Gossypium hirsutum*) worldwide. *Thielaviopsis basicola* (Berk. & Broome) Ferris (syn. *Chalara elegans* Nag Raj & Kendrick) is the causal organism of black root rot of cotton. Both pathogens are commonly found in Arkansas cotton fields at population levels that can cause yield reductions. Field plots, 7 m long x 4 rows wide, located in Jefferson County, AR were fumigated with either 1,3-dichloropropene (Telone II) at 3 gal/acre, or metham-sodium (Vapam) at 12 gal/acre two weeks prior to planting. Additional treatments included a seed treatment of triadimenol (Baytan) at 3 oz./100 lb seed and Telone II + Baytan at the same rates. Untreated plots served as a control. Plots were planted on 5 May 1997 with Stoneville LA 887 cottonseed treated with carboxin-pentachloronitrobenzene + metalaxyl (Vitavax-PCNB + Apron) according to recommendations by the University of Arkansas Cooperative Extension Service to control other soilborne phytopathogenic fungi. A completely random design with 4 replications of each treatment was used in this study. Recovery of *T. basicola* from soil for 14 days after planting was reduced by Telone II and Vapam but not by Baytan alone or for the control. Seedling stand survival for 28 days after planting was lower for the control and Vapam treatments. However, only the Baytan treatment had greater seedling height-to-node ratio at 28 days after planting than the untreated control. Recovery of *T. basicola* from cotton roots 28 days after planting was reduced by Telone II + Baytan but not for any other treatment used. Boll retention in the first fruiting position 146 days after planting was not affected by treatments, but boll retention in the second fruiting position was reduced by Telone II + Baytan. Total plot seed cotton yields were not affected by treatments when compared to the control. Root galling was lowest for Vapam and Telone II + Baytan treatments.