

**USE OF FUMIGANT NEMATICIDES  
AND A FUNGICIDE TO CONTROL ROOT-KNOT  
(*MELOIDOGYNE INCOGNITA*)  
AND BLACK ROOT ROT  
(*THIELAVIOPSIS BASICOLA*)  
ON COTTON - A 2 YEAR SUMMARY  
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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, an early season seedling disease. Both pathogens are found in Arkansas cotton fields at populations levels which cause yield reductions. Field plots, 7 m long x 4 rows wide, that were infested with both pathogens located in Jefferson county, AR, were fumigated with either 1,3-dichloropropene (Telone II) at 6 gal/acre, or metham-sodium (Vapam) at 12 gal/acre two weeks prior to planting. Additional treatments included a seed treatment of triadimenal (Baytan) at 3 oz./100 lbs seed and a combination of Telone II + Baytan at the same rate. Nontreated plots served as a control. Plots were planted with Stoneville LA 887 cotton seed treated with Carboxin-Pentachloronitrobenzene + Metalaxyl (Vitavax-PCNB + Apron) to control other soilborne plant pathogenic fungi on 5 May, 1997 and 1998. A completely random design with 4 and 5 replications of each treatment was used in this study for 1997 and 1998, respectively. Recovery of *T. basicola* from soil 14 days after planting was reduced by all soil fumigant treatments but not by Baytan alone. Plant stand 28 days after planting was lower for the Vapam treatment. There were no differences in plant height-to-node ratio among treatments at 28 days after planting. Isolation of *T. basicola* from cotton roots in 28 days after planting was reduced by both Telone II treatments and Vapam, but not by Baytan alone. Plant height at harvest, 146 and 128 days after planting in 1997 and 1998, respectively, was greatest for the soil fumigant treatments. Seed cotton yields were not affected by treatments when compared to the control. Root galling was lowest for Vapam and both Telone II treatments in comparison to the nontreated control.