

**EFFECT OF RENIFORM NEMATODE
ON PLANT GROWTH AND YIELD**

J. Mueller, C. Davis, and K. Lege

Clemson University

Edisto Research and Education Center

Blackville, SC

Abstract

The effects of reniform (*Rotylenchulus reniformis*) nematode on the growth and yield of cotton were determined in an on-farm test in Calhoun County, SC. KC 311 cotton was grown in a skip row pattern of 2 rows of cotton 38 inches apart with a 64 inch skip between two row patterns with an in-row hill drop pattern. Soil type was a Greenville sandy loam. The effects of reniform nematode were compared using three replications of the following treatments: 1). Nontreated check; 2). 3.5 lb/A Temik 15G; 3). 5.0 lb/A Temik 15G; 4). 7.0 lb/A Temik 15G. All Temik 15G was applied in-furrow at-planting. At-planting mean reniform nematode infestation level was 490 per 100 ml soil. Yields were hand picked from a 10-ft long section of row on each of two adjoining (38 inch) rows. Cotton was replanted to stand and chemicals reapplied on May 18, 1995 after the initial stand was unacceptable. Harvest date was November 10. Plants were mapped at harvest. In general reniform nematode reduced yield and increased vegetative plant growth, however most of these differences were not statistically significant due to the low number of replications. Yield increased from 16.3 oz/20 ft row (per plot) to 21.3, 23.7, and 22.9 oz per plot as 3.5, 5.0 and 7.0 lbs of Temik 15G were applied. There appeared to be more bolls on the nontreated (16 bolls/plant) than the treated cotton (12, 13, and 11 bolls per plant for the 3.5, 5.0 and 7.0 treatments), however hardlock was higher (7.0 bolls/plant) in the nontreated than in the treated plots (2, 3, and 4 bolls/plant for the 3.5, 5.0 and 7.0 treatments). This meant the number of harvestable bolls was greater in the treated than nontreated plots. Nontreated plants appeared to be slightly taller and have more nodes than treated plants, however the height to node ratio did not appear to differ. Treated plants apparently were more efficient at allocating resources to harvestable bolls compared to nontreated plants. Despite the approximately 35% yield increase where reniform nematode was controlled there were no noticeable visual above ground symptoms of nematode infection such as stunting or leaf discoloration. Unlike most nematode-infested fields which have scattered pockets of stunted plants, plant height was fairly uniform across this field, masking the nematode infestation and making it harder to detect. This lack of symptoms makes reniform nematode detection almost entirely reliant on soil sampling.