

ALABAMA COTTON COMMISSION 2006

Reniform nematode management investigations – project summary. Kathy S. Lawrence, Associate Professor, Dept of Entomology & Plant Pathology; Charlie Burmester, Agronomist, Tennessee Valley Research Station; Dale Monks, Professor and Extension Specialist, Agronomy & Soils Dept; Kathy Glass, Ag Program Associate, Agronomy & Soils Dept; Andy Price, Weed Scientist, USDA-ARS; Kip Balkcom Agronomist, USDA-ARS; Francisco Arriaga, Soil Scientist, USDA-ARS; James Akridge, Substation Manager, Brewton/Monroeville Research Substations, and William Gazaway, Professor Emeritis, Dept of Entomology & Plant Pathology.

Our objectives are to: 1) to determine the effect of the new seed treatment nematicides on the rate of development of the reniform and root-knot nematodes over time in various soil types; 2) to determine the effect of poultry litter fertilizer applications on the efficacy of the new seed treatment nematicides for reniform nematodes in cotton; 3) screen current corn cultivars for host status to the reniform and root-knot nematodes; 4) identify summer and winter weed hosts of the reniform nematode and how these weeds affect nematode population during a corn rotation; and 5) determine the efficacy and economics of recommended and experimental nematicides and biologicals for management of the reniform nematode.

Greenhouse evaluations indicated abemectin reduced the numbers of *R. reniformis* in the roots at 3 and 6 days after inoculation as compared to the untreated control. A greater percentage of the total population of *R. reniformis* was observed in the second stage juvenile form and the sausage-shaped juvenile with conical tail at 6 days after inoculation in the abemectin. Gravid females with egg masses were observed at 19 days after inoculation in the control but were not observed until 35 days after inoculation in the abemectin treatments. Poultry litter was shown to reduce *R. reniformis* numbers in cotton in the greenhouse. However, field trials testing the poultry litter, tillage and nematicide interactions indicate that only the nematicides tested reduced *R. reniformis* populations while poultry litter and tillage had no effect in after one season. Sicklepod, Velvetleaf, and the Morningglory species serve as excellent hosts for the *R. reniformis* and will increase nematode numbers in the when grown in combination with corn if the field. New seed treatment nematicides were tested in eighteen tests over three locations in 2006. Seed cotton yields in north Alabama were averaged across all tests and Temik 15 G and Avicta complete pak produced 12.6 and 9.5 percent more seed cotton than the Cruiser control treatment. In south Alabama, Avicta complete pak produced 2.3 percent more seed cotton than the Cruiser control, however, Temik 15 G did not increase yields.