

ALABAMA COTTON COMMISSION 2005

Reniform nematode management investigations – project summary. Kathy S. Lawrence, Assistant Professor, Dept of Entomology & Plant Pathology; Dale Monks, Professor and Extension Specialist, Agronomy & Soils Dept; Charlie Burmester, Agronomist, Tennessee Valley Research Station; Kathy Glass, Ag Program Associate, Agronomy & Soils Dept; Dennis Delaney, Extension Specialist, 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) examine the utility of poultry litter as an alternative means of reniform nematode management by encouraging growth of microbial populations that are parasitic and/or toxic to plant-parasitic nematodes; 2) conduct cotton variety screening for tolerance and resistance to the reniform nematode; 3) examine summer and winter weeds for host suitability of the reniform nematode 4) examine various winter cover crop rotations for management of the reniform nematode; 5) determine the efficacy and economics of recommended and experimental nematicides and biologicals for management of the reniform nematode. Greenhouse evaluations confirm that poultry litter has the potential to reduce *R. reniformis* numbers in cotton; however, field trials indicate that future long-term evaluations with poultry litter should be conducted before recommendations are made. Cotton variety evaluations have determined that resistance and/or tolerance to the reniform nematode are not present in the 52 cultivars evaluated. However, high yielding varieties suited to the production area did aid in increasing yields in reniform infested fields. Of the 28 weed species tested, the majority of dicotyledonous noxious weed species serve as host to the reniform nematode while the monocotyledonous species tested did not. Sicklepod, Velvetleaf, and the Morningglory species tested, all serve as excellent hosts for the reniform nematode. Thus, these weeds which are common to cotton corn rotation systems, could potentially increase reniform nematode populations if weed populations are high. The winter cover crops crimson clover, subterranean clover and hairy vetch are hosts for *R. reniformis* as indicated in greenhouse tests, however, population densities did not increase on these cover crops over the winter months under natural field conditions. New seed treatment nematicides were tested in six tests over two locations in 2005. Seed cotton yields when averaged across tests found Temik 15 G and Avicta seed treatments produced 0.3 and 1.3 percent more seed cotton than the Cruiser control treatment.