INFLUENCE OF COTTON HOST RESISTANCE AND WINTER COVER CROPS ON RENIFORM NEMATODE POPULATION DYNAMICS AND ESTIMATED LINT YIELD

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Abstract

Reniform nematode (*Rotylenchulus reniformis*) is an important pest on cotton in the United States, causing losses in both lint yield and quality. In Louisiana, reniform nematode is commonplace in cotton fields, with infested fields often exhibiting uneven plant height, leaf chlorosis, and poor lint yield. Reniform nematode resistant cotton varieties (example: Deltapine 2141) have recently become available for population management. The use of winter cover crops in not commonplace but may have a positive or negative impact on nematode population development depending on host status. The aim of this study was to evaluate the impact of twelve different two-year cropping sequences on reniform nematode population densities and estimated lint yield in Louisiana. Growing a winter cover crop, regardless of species, had no impact on reniform nematode population densities when planting the cotton crop. Mid-season canopy coverage was greater in Deltapine 2141 than Deltapine 1646 but was not influenced by previous cover crop planting history. Estimated lint yield for Deltapine 2141 was 1,196 lb./A and for Deltapine 1646 was 735 lb./A. Estimated lint averaged across both cotton varieties after each cover crop were: Fallow (934 lb./A), Austrian winter pea (1,416 lb./A), crimson clover (1,091 lb./A), hairy vetch (1,112 lb./A), winter rye (598 lb./A), and winter wheat (642 lb./A). All winter cover crops improved soil organic matter content in plots and reduced reniform nematode population development on the cotton crop.