

**THE DISTRIBUTION OF ROOT-KNOT AND
RENIFORM NEMATODES
IN ARKANSAS, 1990-1999**

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Abstract

During the period 1990-1999 a total of 12,581 cotton fields in Arkansas were sampled for the presence of plant-parasitic nematodes. Samples were collected in all cases by either University of Arkansas nematologists, county agents, or professional consultants. Composite Samples were collected each fall between August 15 and November 15. Each composite consisted of a minimum of 15 soil cores taken to a depth of 15-20 cm from arbitrary locations (within the root zone) within each field. Each sample represented an average of approximately 20 acres. All samples were extracted either by wet sieving or using a semi-automatic elutriator and sugar flotation. The root-knot nematode, *Meloidogyne incognita* is widely distributed throughout the cotton growing areas of the state. This nematode species was found in all counties that were surveyed. The distribution of root-knot within Arkansas changed little during the study, although incidence appears to be increasing in northeastern and southern regions of the state. This nematode appears to be present in 20-30 percent of cotton fields statewide. In 1990, the reniform nematode, *Rotylenchulus reniformis* was found in only two localized areas within two counties in southern Arkansas. Incidence of the reniform nematode has increased rapidly throughout the southern half of the state. On a statewide basis, reniform nematodes appear to occur in <10 percent of fields. However, in certain areas, particularly Jefferson and Monroe counties, incidence is well over 30%. During the period 1996-1998, the reniform nematode was identified in several northern Arkansas locations, near the Missouri boot-heel. There are currently ten counties within the state where this nematode has been identified. The reniform nematode is increasing in incidence in Arkansas at a rapid rate, and appears to be capable of surviving well even at the northern border of the U.S. Cotton Belt.