THE EFFECT OF THE LANCE NEMATODE, *HOPLOLAIMUS MAGNISTYLUS*, ON COTTON IN ARKANSAS

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Abstract

The lance nematode (*Hoplolaimus magnistylus*) is found primarily in Arkansas, Louisiana, and Mississippi often associated with cotton. Little is know about it's pathogenicity to cotton or other agronomic crops. A close relative, the Columbia lance nematode (*H. columbus)* is a major pest of cotton in South Carolina and Georgia. In 1994 high numbers of lance nematode (*H. magnistylus*) were identified in a field sample. A pathogenicity test was conducted on cotton cv. DPL 20 in 1995 and 1996 in the Poinsett County field near Harrisburg to determine if this nematode is a threat to cotton production in Arkansas and the effectiveness of selected rates of aldicarb (Temik 15G) for its control. Soil type in the test field was a Collins silt loam. Experimental design of the test was a 3x3 Latin Square consisting of 6-row plots 50 feet long on 36 inch centers and replicated 3 times in different areas in the field. Treatments were : 1) untreated check; 2) 3.5 lbs/A aldicarb (Temik 15G); 3) 5 lbs/A aldicarb (Temik 15G). Chemical was applied in-furrow with a six-row planter. Orthene was used to control thrips in the untreated check. Soil samples were taken at planting (31 May 1995; 22 May 1996), mid-season (18 July 1995; 23 July 1996), and harvest (13 November 1995; 28 October 1996) for nematode assay. Seed cotton and lint yields were determined at harvest. Numbers of lance nematode (*H. magnistylus*) /pint of soil averaged 199, 137, and 279 in 1995 and 407, 317, and 383 in 1996 at planting, 147, 274, and 227 in 1995 and 180, 137, 128 in 1996 at mid-season, and 705, 487, and 610 in 1995 and 289, 293, and 208 in 1996 at harvest for treatments 1, 2, and 3 respectively. Lint yields in lbs/A for treatment 1 were 1059 for 1995 and 671 for 1996, for treatment 2) 1157 in 1995 and 577 in 1996, and for treatment 3) 1116 in 1995 and 611 in 1996. No significant differences in lance nematode (*H. magnistylus*) population densities or yields were found among treatments. Higher yield in 1995 than in 1996 can be attributed in part to infestations of morningglory and cocklebur and also a wet fall which delayed harvest. In conclusion, the data collected from this two year study indicates that the lance nematode, (*H. magnistylus*) poses little or no economic threat to irrigated cotton in Arkansas.

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