

NEMATOCIDES AGAINST RENIFORM NEMATODE IN NORTHEAST LOUISIANA

Terry L. Erwin

Louisiana State University Agricultural Center

Bastrop, LA

Charles Overstreet and Edward C. McGawley

Louisiana State University

Baton Rouge, LA

Abstract

Nematicide trials were conducted in Morehouse Parish during 2001 to evaluate rates of Temik 15%G, compare Temik 15%G against the insecticide Adage, and determine the efficacy of sidedress applications of Temik 15%G. In the rate/Adage study, only Temik 15%G at 5.0 pounds per acre had significantly higher yield than its comparison Adage treatment. Nematode populations seemed to be unaffected by any rate or treatment in this study, increasing rapidly by midseason. A rate and sidedress test conducted at another location showed little effect on the reniform population. Temik 15%G at 3.5 pounds per acre had significantly lower yield than any other treatment. The sidedress application of Temik 15%G at 5.0 pounds combined with the same rate at planting gave the highest yield numerically. Boll rot probably significantly affected yield in both tests.

Introduction

Reniform nematode has become a serious problem of cotton in Northeast Louisiana (McGawley et al., 1998). This nematode has spread rapidly during the past 20 years and now infests a high percentage of cotton acreage in this region (Overstreet and McGawley, 1999). Crop rotation has proved to be very effective in decreasing reniform nematode and increasing yields for many producers. Rotation for reniform nematode management in Northeast Louisiana is primarily with corn. Nematicides continue to be an important management tool. This study was conducted to evaluate various rates of a nematicide in fields where reniform nematode is a problem.

Material and Methods

Two nematicide trials were conducted in Morehouse Parish during 2001. The first study compared different rates of Temik 15%G against the seed treatment Adage. Temik 15%G was applied at 3.5, 5.0, and 6.0 pounds per acre as an in-furrow treatment at planting. Adage was applied as a seed treatment at the rate of 7 oz/100 pounds of seed. These were side-by-side comparisons to account for differences in nematode populations across the field. Nematode samples were collected at planting, midseason, and at harvest. The cotton was harvested using a four-row picker. A second trial was conducted to compare rates and sidedress application of Temik 15%G. The rates were the same as in the first test with the addition of a sidedress application of Temik 15%G at 5.0 pounds per acre.

Very few differences in reniform nematode population between Adage and any Temik 15%G rate were observed in the first test. Levels did increase dramatically midseason but appeared to have declined across all treatments by the time samples were collected after harvest. Cotton yield was better with the Temik 15%G rate of 5.0 pounds per acre than its corresponding Adage comparison. Heavy rainfall caused severe boll rot and certainly could have reduced the effects of the various treatments. The rate and sidedress study showed similar trends with the reniform population. Very few differences were observed among treatments with the exception of significantly higher levels of reniform at the midseason sampling with the Temik 15%G at 6.0 pound per acre rate. Temik 15%G at 3.5 pounds per acre had significantly less cotton than the other rates or sidedress application. The sidedress application of Temik 15%G treatment was numerically higher than the other treatments. Boll rot was severe in this field also and may have affected differences among treatments.

References

McGawley, E.C., C. Overstreet, and J.P. Bond. 1998. Reniform nematode: Possibly the most serious threat to world cotton production since the boll weevil. Pages 186-194, In: Proceedings of the Second World Cotton Research Conference. Athens, Greece

Overstreet, C. and E. C. McGawley. 1999. Evidence for spread by reniform nematode in Louisiana during the past 20 years. *Nematropica* 29:127-128

Table 1. The influence of nematicides and rates on population development of reniform nematode and cotton yield in Morehouse Parish during 2001.

Treatment	Reniform population per 500 cm³			
	May 10	July 10	Oct 31	Seed cotton lbs/a
Temik 3.5 lb	11,850	44,267	15,200	2019
Adage	17,653	43,120	16,640	2046
Temik 5.0 lb	11,600	39,447	17,280	2059
Adage	13,700	41,813	22,670	1919
Temik 6.0 lb	15,397	40,583	18,640	1921
Adage	13,973	47,147	18,560	1949
LSD 5%	NS	NS	NS	111

Nematode counts are the average of 6 replications. Yield is the average of 4 replications.

Table 2. Rates and sidedress application of Temik 15%G against reniform nematode in Morehouse Parish during 2001.

Treatment	Reniform population per 500 cm³			
	May 10*	July 10	Nov 14	Seed cotton lbs/a
Temik 3.5 lb/a	9700	27,520	3948	2247
Temik 5.0 lb/a	21,760	32,880	8960	2588
Temik 6.0 lb/a	15,280	53,410	10027	2524
Temik 5.0 lb/a	-	17,360	11947	2611
Temik 5.0 lb/a & 5.0 sidedress	-	20,240	7893	2783
LSD 5%	NS	29,958	NS	259

*Average of 4 replications. Cotton yield and final nematode sampling were 3 replications.