

THE USE OF TELONE IN COTTON PRODUCTION IN LOUISIANA

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Abstract

High populations of nematodes have made it necessary to look at alternative methods of management rather than just the standard nematicide Temik 15%G applied at 3.5-5.0 lbs/a. Telone at the use rate of three gallons/a was evaluated as a supplemental nematicide to these standard rates primarily in reniform fields (14 tests) with one in a root-knot field in trials conducted from 1997-2002. Telone was primarily applied as a spring treatment (14 tests) and one fall test. When all the trials were combined, the addition of Telone gave an average yield increase of 196 pounds of seed cotton compared to the standard Temik 15%G at 3.5-5 lbs./a. Weather was a dominant factor in a number of these tests. Eight of the tests were conducted under fairly normal conditions and Telone gave an average of 341 lbs./a increase over Temik 15%G alone. Seven tests were subjected to adverse conditions (excessive rainfall from Tropical Storms or Hurricanes). The difference between the combination of Telone and Temik 15%G and the Temik alone was only 31 lbs./a in these tests. Mid-season levels of reniform nematode were significantly lower when Telone was applied but no differences by the end of the growing season.

Introduction

Nematodes such as reniform have developed into major problems for many areas of Louisiana and occur in very high populations in many fields. Although crop rotation with corn has proven to be a fairly effective method to reduce these levels, many producers find that they must plant continuous cotton for economic reasons. Temik 15%G applied at 3.5-5.0 lbs./a has been the standard nematicide used in Louisiana since the early 1980s'. Although this nematicide and rates used have performed well in a number of trials conducted since this time, there have been a number of times where these rates did not provide a substantial increase over that of the untreated control. Most of the time these were in fields which had substantial populations of reniform present at the time of planting or by midseason. There have been approximately 2000 fields identified in the past 10 years that have very high levels of the reniform nematode (over 10,000 per 500cm³ of soil). These tests were conducted to evaluate the effectiveness of the fumigant Telone as supplement to the standard nematicide (Temik 15%G) that is used by producers.

Material and Methods

Telone was injected beneath the row to a depth of 12-16 inches in 14 trials in the spring and one conducted in the fall. Cotton was planted 10-30 days later in the spring trials and 6 months later with the fall application. Temik 15% at the rate of 3.5-5.0 lbs./a was applied to all the plots including those with Telone. Nematode samples were collected at planting, midseason, and harvest and cotton yields determined by weighing with a weigh wagon, scales and a cotton trailer, or using a yield monitor. Weather turned out to be a significant factor in a number of the tests. Tropical storms, a hurricane, and several weeks of rainy weather during the fall seriously impacted a number of the tests.

When all the trials were compiled together, the addition of Telone only provided a yield increase of 196 pounds of seed cotton when compared to Temik alone (Table 1). The trials were broken out into ones which had a normal growing season and those which had some major rain event (hurricane, tropical storm, or prolonged wet period). The biggest differences occurred during years or tests which were more closely related to a normal season. Eight tests fit this category. Telone gave an increase in 341 lbs./a over the Temik alone in these tests. Seven of the trials went through a pronounced wet and/or windy period from severe weather. The differences between treatments was only very slight (31 lbs./a of seed cotton) after these conditions. Reniform nematode populations were estimated in 14 of the tests. Figure 1 shows the midseason and harvest numbers for the Telone and Temik15%G treatment compared to the Temik 15%G alone treatment. The midseason levels were significantly lower ($P=0.005$) in the plots with Telone at the midseason sampling but not at harvest.

Wet weather dramatically reduced the differences observed in a number of trials. Fall is normally a fairly dry time in Louisiana but serious damage has taken place in 3 out of the 5 years that trials have been conducted in Louisiana. During times of favorable weather, the application of Telone was advantageous in increasing yields and cost effective. After bad weather conditions, any advantages of Telone were lost. Although the use of Telone may not be recommended for general use, it still

appears to have a place in certain conditions. Wet weather incidences cannot be predicted anyway but may need to be considered in the overall use and selection of Telone as a management tool.

References

Overstreet, C. 1996. Impact of reniform nematode on cotton production in the U.S.A. *Nematropica* 26:216

Overstreet, C. and E.C. McGawley. 2000. Geographical distribution of reniform nematode in Louisiana. 2000 Proceedings of the Beltwide Cotton Conferences Vol. 1:168-171.

Table 1. Cotton yields from a number of Telone trials conducted in Louisiana during 1997-2002.

Treatment	Seed cotton pounds per acre		
	Good years (8 tests)	Bad Years (7 tests)	Total (15 tests)
Telone 3 gal & Temik 15% at 3.5-5.0lbs	2176	2115	2148
Temik 15% at 3.5-5.0 lbs alone	1835	2084	1952
T-test (5%)	P=0.0005	P=0.38	P=0.002

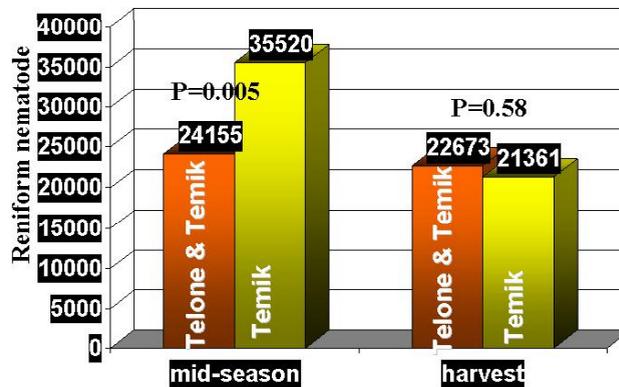


Figure 1. Reniform nematode populations for 14 trials conducted during 1997-2002.