EFFECT OF SITE SPECIFIC APPLICATION OF ALDICARB ON COTTON YIELD IN A *MELOIDOGYNE INCOGNITA* INFESTED FIELD

Allen Wrather and Gene Stevens
University of Missouri-Delta Center
Portageville, MO
Terry Kirkpatrick
University of Arkansas
Hope, AR

Abstract

Some Missouri farmers apply aldicarb (Temik) at planting to protect their cotton from root-knot nematode, *Meloidogyne incognita*. But populations of this nematode are usually not evenly distributed in fields so a uniform application of aldicarb is wasteful. The objective of this project was to determine the effect of variable-rate aldicarb application on cotton yields in a field infested with root-knot nematodes. The variable-rate aldicarb application was guided by a nematode-density-distribution map of the field. The map was developed from nematode analysis of soil samples collected from a 0.25 acre grid. The grid was established with a global positioning system. Cotton yields in 1997 and 1998 were similar between areas treated with a uniform 3.5 lb/acre rate of aldicarb and the variable-rate of aldicarb, and yields for both were significantly greater than the yields for the control, not treated. Less aldicarb was used per acre in areas treated with the variable-rate than the uniform-rate. Unfortunately, the cost of the variable-rate aldicarb treatment was high due to the expense of developing the nematode-density-distribution-map ($100/acre). This expense included $5 for each soil sample collected and $20 for analysis of each soil sample. Variable-rate aldicarb application for cotton root-knot nematode control would be very useful if the costs for developing the nematode-density-distribution maps could be reduced. This research was supported by grants from Rhône-Poulenc Ag. Company, Cotton Incorporated Project 98-545MO, and the University of Missouri Precision Agri. Center.

Reprinted from the *Proceedings of the Beltwide Cotton Conference*
Volume 1:174-174 (2000)
National Cotton Council, Memphis TN