MANAGING NEMATODES IN THE MID-SOUTH WITHOUT TEMIK

C. Overstreet
Louisiana State University
Baton Rouge, LA
T.L. Kirkpatrick
University of Arkansas
SW Research & Extension Center
Hope, AR

Abstract

Cotton yield losses due to nematodes in the mid-southern states of Arkansas, Tennessee, Louisiana, and Mississippi ranged from 2-7% of the total crop in 2009, resulting in a loss in production of about 120,000 bales. Growers in this region have routinely applied Temik at the time of planting to help manage nematodes as well as thrips. Both the root-knot and the reniform nematode are significant pathogens in the region, and comparative yield loss trials conducted in Louisiana and Arkansas since 1980 have consistently resulted in lint yield enhancement of 70-100 lb/acre. Without Temik, options available to growers to manage these nematodes are limited to the pre-plant application of soil fumigants such as Telone II, Vapam, or K-Pam, the use of seed treatment materials that include a nematicidal component, or crop rotation to less susceptible or non-host crops. The use of resistant varieties is limited to only a few cultivars that are moderately resistant to root-knot; there are no reniform resistant cultivars available. In today's economy, crop rotation has considerable potential as an aid in long-term nematode management. It is vital, however, that the nematode status (both the species that is present and the population density) is known. Corn, rice, and grain sorghum can be used effectively in lowering reniform nematode populations because all are non-hosts. Similarly, rice and grain sorghum can effectively lower root-knot population densities. Unfortunately, both corn and soybean are good hosts for root-knot, and soybean is also a good host for reniform nematodes, so the use of these crops in the rotation sequence must be carefully planned. In situations where effective cropping systems are not possible, nematicides may continue to be a component of an operation. Where severe nematode pressure exists, pre-plant soil fumigation may be required although the product cost and the requirement for specialized application equipment must be strongly considered. Conversely, if nematode pressure is relatively low, the use of a seed treatment nematicide may provide sufficient protection. In either case, however, an accurate and current diagnosis of the nematode status of each individual field is vital to planning appropriate strategies. Future nematode management programs will, by necessity, be according to a systems approach with several tactics providing incremental nematode control.