

RENIFORM NEMATODE MANAGEMENT IN GEORGIA COTTON

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Abstract

The reniform nematode, *Rotylenchulus reniformis*, causes significant yield reduction in cotton. From 1974 through 1999, the incidence of reniform nematodes in Georgia's agricultural fields increased from less than 0.5% to approximately 5%. Since 1990, cotton acreage has increased nearly four-fold in Georgia to about 1.4 million acres.

The primary means of managing the reniform nematode in Georgia cotton are the use of nematicides and crop rotation. The standard nematicide recommendation for cotton of 5 to 7 lbs of Temik 15G (aldicarb) per acre in furrow at planting or 3 gal of Telone II (1,3-D) pre-plant plus 3.5 lbs of Temik in furrow has long been established in Georgia. Two new supplemental uses of existing compounds have been labeled including the use of Temik as a post-emergence side-dress application and the use of Vydate C-LV as a post-emergence spray. Both supplemental treatments seek to improve economic return by extending the period of time after planting when reniform nematode population levels are suppressed.

Testing Temik side-dress applications in Georgia produced inconsistent results in 1998 and 1999: sometimes economic return was increased and sometimes it was not, but economic return has not been reduced in any study conducted in Georgia. Because of inconsistent test results, Temik side-dress treatments are not routinely recommended. Temik side-dress applications may be recommended as an experimental treatment when damage potential from reniform nematodes is very high. Additional study of Temik side-dress applications should be done to address issues such as the effect of soil type, soil moisture following application, and the timing of the side-dress application.

Test results of Vydate C-LV applications have been inconsistent in Georgia from 1997-1999. When the economic return of plots receiving a pre- or at-plant nematicide plus Vydate C-LV is compared to the economic return of plots receiving the same pre- or at-plant nematicide without Vydate C-LV, economic return may be increased, unchanged, or reduced. Because of inconsistency in test results, the utility of Vydate C-LV in Georgia cotton production is not known.

Crop rotation is the only viable alternative to nematicide use for managing reniform nematodes in Georgia cotton production. There has been little research on crop rotation for reniform nematode management in Georgia or surrounding states. Corn is a non-host for reniform nematodes, and some soybean varieties are highly resistant. In an ongoing study, a one-year rotation to corn or a highly resistant soybean variety reduced reniform nematode populations by approximately 90%, but levels remained at or above treatment threshold levels. When cotton (with 5 lbs Temik in furrow) was planted following corn or soybean, reniform populations increased by mid-season to the same level found in continuous cotton treated with Temik. Economic return was numerically higher, but not statistically different, for cotton plots following corn or resistant soybean. Longer rotations may be more beneficial and should be investigated.