# MANAGING COTTON NEMATODES: MANAGEMENT OPTIONS AND REGIONAL SUCCESSES

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**Abstract**

Plant parasitic nematodes are economically important pests of cotton throughout the Cotton Belt. While production systems differ across cotton producing regions of the United States, many of the management options currently available are being evaluated among research and extension plant pathologist. The most important step in nematode management is proper diagnosis and quantification of soil populations. Most states offer services to accommodate producers in nematode identification. Results from nematode samples are important when determining which management option(s) to implement. The commercial availability of cotton varieties resistant to root-knot (*Meloidogyne incognita* Kofoid and White), or reniform (*Rotylenchulus reniformis* Linford and Oliveria) are limited; however, research efforts are currently underway to improve resistance and/or tolerance mechanisms using conventional and molecular breeding techniques. In general, nematodes have a wide host range; therefore, rotation crops, as well as cover crops must not support reproduction. Possible rotation crops include peanut, soybean, sorghum, alfalfa, and corn; however, the nematode species present in the soil must be taken into consideration. Small grains such as wheat and rye are most commonly used as cover crops. Several nematicides are currently labeled for nematode management in cotton. Comparisons of the granular nematicide Temik 15G, as well as seed treatment nematicides such as Avicta Complete Pak, and Aeris Seed Applied System are made throughout the Cotton Belt. Additional management options include the use of foliar applications of Vydate, as well as fumigants such as, Vapam and Telone II. One major limitation to the use of these products is the non-uniform distribution of nematode throughout the field. Site-specific management of nematodes, via precision agricultural technology has led to an increase in net returns. While the nematode management directly increases yields, indirect benefits can also be observed. For example, reducing the amount of damage nematodes cause on cotton roots will indirectly reduce the frequency of fungal pathogens such as *Fusarium oxysporum* f. sp. *vasinfectum*, and *Thielaviopsis basicola*. Cotton producers will continually face losses resulting from nematode damage; however, nematologists and plant pathologists will strive to develop management strategies that will allow them to remain economically competitive.