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Root-Knot Nematode Reproduction and Root Galling Severity on Related Conventional and Transgenic Cotton Cultivars

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Pages: 232-236
Plant Pathology and Nematology

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The root-knot nematode (*Meloidogyne incognita* Kofoid & White), a widespread and serious pest of cotton (*Gossypium hirsutum* L.) throughout the Cotton Belt, is managed in many areas in part through cultivar resistance. Recently, commercial cotton cultivars modified with genes for resistance to the tobacco budworm (*Heliothis virescens* F.), to glyphosate herbicide (e.g., Roundup, Monsanto, St. Louis, MO), or in some cases to both the budworm and the herbicide have been released. The objective of this study was to compare the root-knot nematode resistance or susceptibility of several transgenic cotton cultivars with that of their unmodified parent cultivars. The cultivars were evaluated in a field naturally infested with the root-knot nematode and in a growth room in pots infested with the nematode. A dramatic increase in root-knot nematode susceptibility was seen in the transgenic cultivar, Paymaster 1560 BG, compared with its nontransgenic parent, Paymaster 1560. Although only a limited number of cultivars were studied, the data demonstrate that differences in susceptibility to the root-knot nematode exist between some transgenic cultivars and their nontransgenic parents. These data indicate the importance of screening transgenic cultivars for resistance to pests other than the particular pest species targeted by the genetic modification before the transgenic cultivars are recommended for planting.