RESISTANCE TO THE RENIFORM NEMATODE (*ROTYLENCHULUS RENIFORMIS*) IN UPLAND COTTON

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Abstract

The reniform nematode, *Rotylenchulus reniformis*, has a wide host range including more than 300 dicot, monocot and coniferous species in 77 plant families. Currently there is no single genotype of Upland cotton known that has an agronomically useful level of resistance to *R. reniformis*. Options for germplasm-based management of *R. reniformis* in Upland cotton include crop rotation, development of tolerant cultivars, and development of resistant cultivars through conventional breeding or genetic engineering. Resistance might be achieved from within *G. hirsutum* by pyramiding known sources of partial resistance or by discovering new sources among approximately 2,000 untested accessions in the U. S. Cotton Germplasm Collection. Alternatively, resistance could be transferred from other *Gossypium* species via triple species hybrids or monosomic addition lines. Other options would employ techniques of molecular biology to introduce naturally occurring nematode resistance genes already cloned from unrelated plants or artificially engineered genes that poison the nematode, kill the nurse cells within the plant on which it feeds, or prevent the development of those cells.

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