EVALUATION OF SIX COMMON PEACH ROOTSTOCKS TO *MELOIDOGYNE MAYAGUENSIS*

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Root-knot nematodes (*Meloidogyne* spp.) are an important pest of peach in the United States and in other regions of the world. All four major *Meloidogyne* spp. have been reported to cause damage to stone fruits, but the Southern (*M. incognita*) and Javanese (*M. javanica)* root-knot nematodes are the predominant species on peach and plum. Root-knot nematodes generally cause stunted growth, loss of vigor, and early defoliation of one to two-year-old peach trees when recommended management practices are not followed.

Planting certified nematode-free rootstock, when it is available, is important as a management tactic to reduce problems with orchard establishment by the stakeholder. Preplant chemical treatment currently provides the most effective control of root-knot nematode because it allows trees to get off to a healthy start by preventing the nematode from causing major root damage. The 2008 preplant nematicide recommendation for managing *Meloidogyne* spp. in the Southeast includes the use of 1,3-D or Vapam. However, with the loss of methyl bromide, alternatives to conventional nematicide application are needed.

In 2001, *M. mayaguensis* was detected in the continental United States for the first time from samples collected from ornamental nurseries in South Florida. This nematode is of particular importance due to its ability of overcome root-knot nematode resistant genes in several crops, including: *Mi -1* gene on tomato, *Mir1* gene on soybean, *N* gene on bell pepper, *Rk* gene on cowpea, and *Tabasco* gene on sweet pepper. Other hosts of this nematode are coffee, guava, tobacco, tomato, watermelon, beet, broccoli, celery, parsley, sweet potato, and many ornamental plant species. Recent concern with *M. mayaguensis* has arisen because of the increased interest in growing peaches in South and Central Florida over the last 2 to 3 years. This renewed interest in growing peaches is due to the release of new low chill varieties developed at the University of Florida in Gainesville and because citrus growers are looking for an alternative crop to grow in place of citrus.

Evaluating different peach rootstocks for resistance to *M. mayaguensis* is important in determining the potential economic impact this nematode may have

on the evolving peach industry in South and Central Florida. The objective of this research was to evaluate the host susceptibility of Flordaguard, Guardian® (advanced line SC 3-17-7), Halford, Lovell, Nemaguard, and Okinawa peach rootstocks to *M. mayaguensis*.

Criteria used in evaluating peach rootstocks for resistance/susceptibility to *M. mayaguensis* include, 1) number of egg masses per root system, 2) number of eggs per root system, 3) number of root galls per root system, and 4) dry root weight.

Our results indicate that all rootstocks were rated as either nonhosts (highly resistant) or poor hosts (resistant) of *M. mayaguensis*. Lovell generally supported greater numbers of *M. mayaguensis* eggs per plant and eggs per gram of dry root, whereas no nematode reproduction was noted on Flordaguard rootstock.

These data provide useful insights into the potential use of Flordaguard rootstock as an alternative nonchemical control strategy for managing *M. mayaguensis* in peach orchard establishment in Florida.