

PEST ALERT

Florida Department of Agriculture and Consumer Services, Division of Plant Industry
Charles H. Bronson, Commissioner of Agriculture

The root-knot nematode, *Meloidogyne mayaguensis* Rammah and Hirschmann, 1988 (Nematoda: Tylenchida)

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INTRODUCTION: A root-knot nematode, *Meloidogyne mayaguensis* Rammah and Hirschmann, 1988, new Continental US record, has been detected and identified in regulatory samples collected from several ornamental plants (*Thunbergia* spp., *Tibouchina* spp., *Tithonia* spp., *Torenia* spp., and *Trachelospermum* spp.) in a nursery, Boynton Beach (Palm Beach Co.), on March 7, 2002; *Hibiscus* sp. in a nursery, Miami (Broward Co.) on July 5, 2002; tropical fruit trees (*Annona* sp., *Pouteria sapota*, *Euphorbia longana*, *Chrysophyllum cainito*, and *Psidium guajava*) in a nursery, Redlands (Dade Co.), on March 7, 2002; with unidentified plant species (weeds) in a commercial tomato field, on March 1, 2002, LaBelle (Hendry Co.), and with basil (*Ocimum* sp.) in a commercial basil field, on August 29, 2002, Palm City (Martin Co.). The samples were a composite of roots from the plant species listed above. Further studies are needed to confirm the host status of these plants.

DESCRIPTION: The identification of this nematode was determined by morphological studies, isozyme phenotypes, mitochondrial DNA, and the Internal Transcribed Spacer Region (ITS1). Examination of the perineal patterns of females of the Florida populations indicates accentuated morphological variability. Perineal patterns fitting those reported in the original description of *M. mayaguensis* were observed in some specimens (Fig. 1). However, many specimens showed perineal patterns similar to those of *M. incognita* (Fig. 2).

DISTRIBUTION: Brazil, Cuba, Malawi, Martinique, Puerto Rico, Senegal, South Africa, Tobago, Trinidad, Venezuela and West Africa (Ivory Coast and Burkina Faso).

HOST PLANTS: Eggplant (*Solanum melongena*) is the type host, first reported in Puerto Rico. Other recorded hosts include vegetable and agronomic crops such as, bell pepper (*Capsicum annuum*), soybean (*Glycine max*), sweet potato (*Ipomoea batatas*), tobacco (*Nicotiana tabacum*), tomato (*Lycopersicon esculentum*), and watermelon (*Citrullus lanatus*). A tropical fruit tree guava (*Psidium guajava*) is also a good host of this nematode. Spanish needle (*Bidens pilosa*) a weed host was also identified. In Cuba, reproduction was observed on coffee (*Coffea arabica* cv. Caturra), bean (*Phaseolus vulgaris* cv. Icapijao), beet (*Beta vulgaris*), broccoli (*Brassica oleracea* var. Botrytis), celery (*Apium graveolens* cv. Utah), horsebean (*Cannavalia ensiformis*), parsley (*Petroselinum crispum* cv. Plain), potato (*Solanum tuberosum*), and pumpkin (*Cucurbita* sp.). In Florida, this nematode has been found in roots of angel trumpet (*Brugmansia* 'Sunray'), basil (*Ocimum* sp.), cape honeysuckle (*Tecomaria capensis*), glory bush (*Tibouchina* 'Compacta' and *Tibouchina elegans*), ajuga, carpet bugleweed (*Ajuga reptans*), and Uganda glorybower (*Clerodendrum ugandense*).

ECONOMIC IMPORTANCE: Populations of *Meloidogyne mayaguensis* able to overcome resistance in tomato cv. Rossol, soybean cv. Forrest, and sweet potato cv. CDH are reported in West Africa. Damage to coffee has been observed in Cuba where it also reproduces on tomatoes with the *Mi* resistance gene. So far, no information is available on the host preference of Florida populations of *M. mayaguensis*. Experiments will be conducted under quarantine conditions (Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, FL) to determine whether the Florida populations of *M. mayaguensis* are able to reproduce on resistant tomato (+ *Mi* gene) cultivars.

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Fig. 1. Micrograph of a perineal pattern of a *Meloidogyne mayaguensis* female from Florida fitting that reported in the original description of this species.

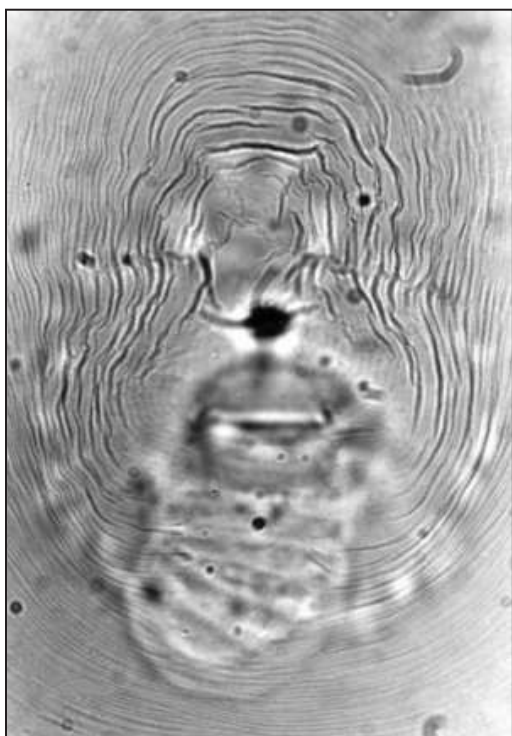


Fig. 2. Micrograph of the perineal pattern of a *Meloidogyne mayaguensis* female from Florida showing similarity to that of *M. incognita*.