

## RESEARCH NOTES—NOTAS DE INVESTIGACION

EFFECT OF *MELOIDOGYNE INCOGNITA* ON *MOMORDICA CHARANTIA* SEEDLINGS

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## RESUMEN

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La enredadera trepadora cundeamor (*Momordica charantia* L.) considerada una plaga grave en las plantaciones de cítricos en el centro y sur de la Florida se está extendiendo rápidamente a través de todo el estado. Desqués que las posturas crecen son tolerantes a la mayoría de las hierbidas registrados, los cuales eliminan otras especies de hierbas competidoras. Sin embargo, el cundeamor es susceptible al nematodo nodulador de las raíces (*Meloidogyne* spp.) y los inventarios en las plantaciones cítricas del noreste y centro de la Florida revelan que el 25-30% de las plantas presentan una infestación de ligera a moderada de dicho nematodo. En pruebas de invernadero, las raíces de las posturas en macetas de 15 cm, previamente inoculadas con 10,000 huevecillos de *M. incognita*, desarrollaron una nodulación severa y el crecimiento de las plantas fué reducido significativamente. La mayoría de las posturas inoculadas con 20,000 ó más huevecillos se tornaron moribundas o murieron.

*Palabras claves adicionales:* cundeamor, nematodo nodulador de las raíces, cítricos, manejo de plagas.

Balsam apple (*Momordica charantia* L.), a tendril climbing herb of tropical countries, is sometimes used as an ornamental vine in American gardens. In recent years it has become a serious weed-vine in many citrus groves, along fence rows, and in some vegetable fields in central and south Florida. This vine has become particularly injurious to citrus through its rapid growth to the top of trees, where it quickly spreads over the entire canopy and causes extensive shading during the late summer and fall months. After early seedling growth has occurred, *M. charantia* is tolerant to presently registered herbicides, which eliminate competitive weed species. This contributes greatly to the seriousness of the problem.

Since *M. charantia*, a member of the family Cucurbitaceae, is susceptible to root-knot nematodes (*Meloidogyne* spp.) (1), surveys were made in northeast central Florida citrus groves to determine the extent of infection from these nematodes. These surveys revealed that 25-30% of the plants inspected had light to moderately galled roots. A greenhouse experiment was then conducted to determine the amount of injury caused by the presence of various population levels of *Meloidogyne incognita* (Kofoid & White) Chitwood on seedlings of *M. charantia*. The experiment was conducted in 15-cm pots of steamed Myakka fine sand. The experimental design was a randomized complete block with 4 replicates. On September 20, 1983, five seeds were planted 1.5 cm deep in each pot. *Meloidogyne incognita* eggs which had been collected by the Hussey-Barker technique (2) were added around the seed. Treatments consisted of no eggs (check); 1000; 10,000; 20,000; 40,000; 80,000; 160,000; 320,000; and 640,000 eggs per pot. On October 20, 1983, data were collected by cutting and weighing the plant tops, then removing the roots and indexing them for root galling.

The data (Table 1) show that *M. charantia* is highly susceptible to *M. incognita*. The roots of seedlings previously infested with 10,000 eggs were heavily galled and plant growth was significantly reduced. Most seedlings were moribund or dead in pots infested with 20,000 or more eggs. This nematode, although not considered to be harmful to citrus (3), is widespread throughout Florida groves. Presumably, populations are

Table 1. Effect of *Meloidogyne incognita* on top growth and root galling of *Momordica charantia*.

Treatment	Top weight (g) <sup>a</sup>	Root galling <sup>b</sup>
Check	4.54	1.0
1,000 eggs	4.98	2.0**
10,000 "	3.53*	3.4**
20,000 "	1.44**	4.2**
40,000 "	0.78**	4.9**
80,000 "	0.13**	5.0**
160,000 "	0.15**	5.0**
320,000 "	0.14**	5.0**
640,000 "	0.14**	5.0**

<sup>a</sup>Average wt/plant.

<sup>b</sup>Based on an index of 1, no galling, to 5, severe galling. Asterisks (\*,\*\*) indicate significant differences from check at P=0.05 and P=0.01, respectively.

maintained on weeds, such as *M. charantia*, and ground covers among the trees. Its presence may be a factor in reducing populations of *M. charantia*.

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