# SUSCEPTIBILITY OF CALADIUM CULTIVARS TO *MELOIDOGYNE ARENARIA*, *M. FLORIDENSIS*, *M. INCOGNITA* AND *M. ENTEROLOBII*

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Caladium (*Caladium* × *hortulanum* Birdsey) is an ornamental foliage crop grown from tubers and planted extensively in the southeastern U.S. Commercial production of caladium is concentrated in Highlands County FL, which produces approximately 85% of the world's supply of tubers. In the past, caladium producers have relied on methyl bromide fumigation for nematode control. Symptoms of root-knot nematode (*Meloidogyne* spp.) infestation on caladium include leaf die-back, stunted plants, galling on roots, and low tuber yield. Tubers also become infested with root-knot nematodes but may remain symptomless or produce nondescript corky lesions. There is no known root-knot nematode resistance in caladium but cultivars have been reported to differ in their level of susceptibility. The objective of this research was to assess the relative susceptibility of several caladium cultivars to species of *Meloidogyne* which commonly occur in Florida including *M. arenaria, M. incognita, M. floridensis,* and *M. enterolobii* (=*M. mayaguensis*).

Tubers of seven field-grown caladium cultivars were disinfested using standard techniques employed by commercial caladium producers. Disinfested tubers were then planted into pots containing a peat-based growing mix. One tuber seed piece was planted per pot, and each seed piece contained at least one auxiliary bud. Five replicate pots were planted for each caladium cultivar. Pots were arranged in a randomized complete block design in the greenhouse. Each plant was inoculated with 5,000 eggs of either *M. arenaria, M. incognita, M. floridensis,* or *M. enterolobii*. After 13 weeks, caladium tubers and roots were removed from soil and assessed for disease and nematode reproduction. A100 $cm^3$ soil sample was collected from each treatment and processed to determine the number of J2 present in the soil at harvest. Nematode eggs were extracted from caladium roots using 0.525% NaOCl.

All of the caladium varieties tested were highly susceptible to two of the nematode species; *M. arenaria* and *M. floridensis,* and less susceptible to *M. incognita* and *M. enterolobii. Meloidogyne floridensis* produced extremely high numbers of eggs/g fresh root on all varieties tested, with Red Flash having the highest number (1080 eggs/g fresh root) and White Christmas having the lowest (298 eggs/g fresh root). *Meloidogyne arenaria* also reproduced at a high level on

Red Flash (774 eggs/g root). Overall, the number of eggs of *M. incognita* and *M. enterolobii* were low on all varieties tested. Pink Beauty and White Christmas had no *M. incognita* eggs/g root. White Christmas, Freida Hemple, Carolyn Whorton, and Post Joyner had no *M. enterolobii* eggs isolated from roots. To successfully manage production of numerous caladium cultivars without methyl bromide, will be necessary to have a better understanding of the relative susceptibility of caladium cultivars to different *Meloidogyne* spp. This increased understanding of cultivar susceptibility levels may also enable growers to better manage nematode infested fields with alternative soil treatments.