

### Research Note

#### REACTION OF *LEUCAENA LEUCOCEPHALA* TO POPULATIONS OF *MELOIDOGYNE INCOGNITA* AND *M. JAVANICA* FROM PUERTO RICO<sup>1</sup>

*Leucaena leucocephala*, a leguminous plant native to Mexico, is a deep rooted, arborescent shrub or small tree.<sup>2</sup> Of all tropical legumes, leucaena probably offers the widest assortment of products since it can produce forage, mulch, wood products, paper and pulp.<sup>3</sup> *Leucaena* can grow aggressively and enrich many marginal soils.<sup>3</sup> Among the great number of shade trees used in the tropics for agroforestry purposes, leucaena is the most widely recommended species because it requires little or no pruning, interferes little with the crop's roots, produces a good mulch, carries few or no pests or diseases and is wind resistant.<sup>3</sup> It has been used successfully on plantations of coffee, tea, coconut, cacao and many other crops because of its deep anchorage and its ability to shade out undergrowth annuals.<sup>2</sup> Because of its commercial importance, potential use in the tropics, and the lack of information about this legume in Puerto Rico, a greenhouse experiment was conducted in 1984 to study the reaction of *L. leucocephala* to two species of *Meloidogyne*.

Twenty-four seeds of *L. leucocephala* (K-8) were scarified by immersion in concentrated sulfuric acid for 10 minutes, and then washed in running tap water to remove the acid. Seeds were kept in petri dishes with moist filter paper for 3 days. Germinated seeds (100%) were planted in 10-cm diameter plastic pots containing approximately 900 cm<sup>3</sup> of a sandy-loam previously treated with methyl bromide. No *Rhizobium* inoculation was performed. Fourteen thousand two-hundred eggs and 2nd stage juveniles of *M. incognita* from Isabela, P.R. were added to 2-week-old seedlings. Other seedlings were inoculated with specimens of a population of *M. javanica* from Coamo, P.R. (16,500 eggs and 2nd stage juveniles). Each treatment, replicated eight times, was included in a randomized block design with a noninoculated control for comparison. Fifty days after inoculation, plants were pulled and root systems examined for gall formation.

No root galls were seen in any of the inoculated and noninoculated leucaena plants; thus apparently *L. leucocephala* is completely resistant

<sup>1</sup> Manuscript submitted to Editorial Board May 14, 1985.

<sup>2</sup> Allen, O. N. and Ethel K. Allen, 1981. The Leguminosae, A Source Book of Characteristics, Uses and Nodulation, The University of Wisconsin Press, Madison, Wisconsin. p. 387-89.

<sup>3</sup> Brol, P. S., 1980. *Leucaena*, a promising versatile leguminous tree for the tropics, Review, Abst. Trop. Agric. 6 (3): 9-18.

or immune to the two populations of *Meloidogyne* spp. tested. Our findings are similar to those of Soffes et al.<sup>4</sup> They found almost total resistance to both nematode species in all *leucaena* accessions studied. It is possible that *leucaena* roots excrete substances toxic to nematodes exerting a biological control over these pathogens. The only previous report of nematode attack to *leucaena* is that of Bengé and Curran.<sup>5</sup> They mentioned a heavy infestation in plantings of varieties K-8 and Peruvian in the Philippine Islands in areas with high water tables.

*Nydia E. Vicente*

*Nelia Acosta*

*Department of Crop Protection*

*Eduardo C. Schröder*

*Department of Agronomy and Soils*

<sup>4</sup> Soffes, A. R., K. H. Quesenberry and R. A. Dunn., 1983. Tolerance to two species of root-knot nematode, *Meloidogyne* spp. *Leucaena* Research Reports 4: 92.

<sup>5</sup> Bengé, M. D. and H. J. Curran, 1976. Bayani, giant Ipil-Ipil (*Leucaena leucocephala*). A source of fertilizer, feed and energy for the Philippines. USAID Agric. Dev. Ser.