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TOXICITY OF CERTAIN PLANT EXTRACTS TO *MELOIDOGYNE INCOGNITA*

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Summary. Eleven leaf extracts were tested under laboratory conditions to study their effect on the second stage juveniles of *Meloidogyne incognita* (Kofoid *et* White) Chitw. Leaf extracts of *Calotropis gigantea* (L.) R. Br., *Datura stramonium* L., *Leucaena leucocephala* L. and *Tridax procumbens* L. were the most potent treatments which were effective at 500 and/or 1000 ppm concentration and caused a high mortality of the second-stage juveniles of *M. incognita*.

Leaves of some plant species possess nemastatic and nematicidal properties. The toxic effect of petroleum ether extracts of eleven plant species (Table I) against the root-knot nematode, *Meloidogyne incognita* (Kofoid *et* White) Chitw. have been evaluated and the results are reported here.

Two hundred grams of air dried and finely ground leaf powder of each test plant were soaked in 500 ml petroleum ether (B.P. 40-60°C) in a wide mouthed glass bottle and the lid was replaced. After soaking for 24 hours, the contents of the bottle were transferred to a round bottom flask and subjected to soxhlet extraction for 8 hours. The excess solvent was distilled until about 30 ml of the extract remained which was then transferred to a porcelain dish and the solvent evaporated over a water bath until a solid/semi-solid remained in the dish. This was designated as the standard extract and employed for biological testing.

The effect of leaf extracts on juvenile mortality of *M. incognita* was tested at 500 and 1000 ppm concentrations prepared from the standard extract. Five ml of the aqueous solution of the standard extract was pipetted into 5 cm diameter petri dishes and 100 freshly hatched second-stage juveniles were added to each. Nematodes in water served as a control and all the treatments were replicated three times. Juvenile mortality was observed after 48 hours exposure and the per cent values recorded were calculated and corrected according to Abbott's (1925) formula to eliminate the mortality observed in control. Data were analysed using standard procedures for analysis of variance.

All the leaf extracts were toxic to some degree to the second-stage juveniles of *M. incognita* at 500 and 1000 ppm concentrations (Table I). The extract of *Calotropis gigantea*

TABLE I - *Effect of leaf extracts on juvenile mortality of* Meloidogyne incognita.

Plants	Per cent mortality at	
	500 ppm	1000 ppm
Annona squamosa L.	22.2 bcd*	27.8 cde*
Argemone mexicana L.	4.8 a	8.9 a
Azadirachta indica Juss.	6.6 a	16.5 abc
Calotropis gigantea (L.) R.Br.	37.8 e	44.7 fg
Datura stramonium L.	30.0 de	32.8 ef
Leucaena leucocephala L.	29.4 de	32.0 ef
Pongamia glabra Vent.	16.2 b	19.6 bcd
Prosopis juliflora Dc.	26.4 cd	33.1 ef
Sapindus emarginatus Vahl.	3.0 a	12.4 ab
Tagetes erecta L.	18.1 bc	28.3 de
Tridax procumbens L.	23.9 bcd	48.3 g

* Data in columns followed by a common letter are not statistically different (P = 0.05) according to Duncan's multiple range test.

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was the most toxic product at 500 ppm concentration and statistically on par with *Datura stramonium* and *Leucaena leucocephala*. At 1000 ppm concentration, *Tridax procumbens* and *C. gigantea* were comparable and caused significantly greater mortality than any of the other extracts. Earlier studies indicated that aqueous extracts of *C. gigantea*, *D. stramonium* and *L. leucocephala* were toxic to juveniles of *M. incognita* (Jain and Hasan, 1984; Venkata Rao *et al.*, 1986).

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