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A SURVEY OF STYLET-BEARING NEMATODES IN KARACHI

by

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There are no records of nematodes parasitising sapodilla (*Achras zapota* L.) or of the occurrence of sheathoid nematodes (*Hemicriconemoides* spp.) in Pakistan. A survey therefore was undertaken to ascertain the nematode pathogens associated with sapodilla and the general distribution of *Hemicriconemoides mangiferae* Siddiqi in the district of Karachi.

Soil samples were taken at a depth of 8-15 cm around annual plants and 20-45 cm around perennial plants, using spade and auger, in agricultural areas, nurseries and home gardens. Nematodes were extracted by a modified Baermann technique (Hooper, 1968). Nematodes were extracted from plant material by finely chopping the tissue, processing in a blender for about 30 seconds and then filtering through tissue paper. Temporary mounts of nematodes were prepared in water or TAF; permanent mounts were made by relaxing specimens in hot water through fixing in FAA (4:10), processing through lactophenol and mounting in dehydrated glycerine (Siddiqi, 1964).

Eleven genera of stylet-bearing nematodes were found in 26 soil samples collected from around the roots of sapodilla at different localities in the Karachi district. *H. mangiferae* was the most frequently encountered species, occurring in 85% of the samples. Other species found included *Paratylenchus* spp. (*P. curvitatus* van der Linde group of Geraert) in 54% of the samples, *Helicotylenchus* spp. (*H. indicus* Siddiqi and *H. multicinctus* Golden) 46%, *Psilenchus hilarulus* de Man (42%), *Xiphinema americanum* Cobb (38%), *Tylen-*

chorhynchus martini Fielding (23%), *Hoplolaimus columbus* Sher (19%), *Meloidogyne* spp. (19%), *Tylenchulus semipenetrans* Cobb (11%), *Rotylenchulus reniformis* Linford *et* Oliveira (8%) and *Aphelenchus* spp. (8%).

H. mangiferae was found in association with several plants showing disease symptoms: nursery stocks of khirni (*Mimusops hexandra* Bout. ex Boj.), young but only occasionally old plants of sapodilla, red pepper (*Capsicum frutescens* L.), sugarcane (*Saccharum officinarum* L.), and coconut (*Cocos nucifera* L.). In all, *H. mangiferae* was found in association with 14 plants, each representing a separate genus, but generally occurring more frequently on woody plants. *H. mangiferae* was found in association with 85% of samples of sapodilla, 65% *Mangifera indica* L., 58% *M. hexandra* Bout. ex Boj., 47% *Psidium guajava* L., 45% *C. nucifera* L., 40% *Tamarindus indica* L., 32% *Carica papaya* L., 27% *Gossypium hirsutum* L., 23% *S. officinarum* L., 23% *C. frutescens* L., 23% *Musa sapientum* L., 18% *Abelmoschus esculentus* (L.) Moench, 10% *Phyllanthus emblica* L., and 9% *Phoenix dactylifera* L.

Considering that sapodilla is propagated by grafting on khirni as the root stock, it would appear that the grafted plants carry nematodes alongwith them to new sites and this seems to be the principal means of spread of the shethoid nematodes.

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