

National Nematological Research Centre
University of Karachi, Karachi-32, Pakistan

IDENTIFICATION OF SPECIES AND RACES OF *MELOIDOGYNE*
SPP. AND SOME NEW HOST RECORDS FROM SIND
AND BALUCHISTAN

M. A. MAQBOOL, S. HASHMI and M. QASIM

During August - December, 1983 a survey was made in Sind and Baluchistan of root-knot nematode on some fruit trees and few ornamental plants i. e. *Benincasa hispida* (Thunb) Cogn, *Calendula officinalis* L., *Cineraria* sp., *Petunia* sp., *Plantago lanceolata* L., *Portulaca grandiflora* Hook., *Prunus domestica* L., *Prunus persica* (L.) Batsch, and *Vitis vinifera* L. showing symptoms of wilting, unthriftness and declining. These are new records for hosts of *Meloidogyne* species in Pakistan and are additional to those reported by Maqbool (1981), Maqbool and Saeed (1981) and Maqbool *et al.* (1983).

Severely galled root samples were collected and several females were extracted from each. Examination of the perineal pattern of the females identified *Meloidogyne incognita* (Kofoid *et* White) Chitw. *M. javanica* (Treub) Chitw. and *M. hapla* Chitw. Further identification of races was made with the North Carolina differential host test (Taylor and Sasser, 1978). Fresh root-knot females were collected from the above mentioned plants and inoculated separately to two week old tomato (cv. Rutgers) seedlings. After 55 days 100 eggmasses from pure culture of each sample were transferred to young seedlings of five standard plants (Table I). After a further 55 days all plants were uprooted and galls and eggmasses were counted using the scale used by Taylor and Sasser (1978).

Table I indicates that all the nine samples tested reproduced on tomato (cv. Rutgers); four of them reproduced on pepper, and watermelon and were identified as *M. incognita* race 1; another four repro-

Table I - *Host differential test and root-knot nematode species and races identified.*

| Root-knot samples | Locality | Tobacco (NC-95) | Cotton (Deltapine-16) | Pepper (California Wonder) | Watermelon (Charleston Grey) | Peanut (Florunner) | <i>Meloidogyne</i> spp. and races |
|---|---------------------------|--------------------|--------------------------|----------------------------------|------------------------------------|-----------------------|--|
| Cineraria (<i>Cineraria</i> sp.) | Karachi (Sind) | — | — | + | + | — | <i>Meloidogyne incognita</i> race 1 |
| Petunia (<i>Petunia</i> sp.) | » | — | — | + | + | — | race 1 |
| Rose moss (<i>Portulaca grandiflora</i> Hook.) | » | — | — | + | + | — | race 1 |
| Calnudula (<i>Calendula officinalis</i> L.) | » | — | — | + | + | — | race 1 |
| Peach [<i>Prunus persica</i> (L.) Batsch] | Mustung (Baluchistan) | + | — | — | + | — | <i>M. javanica</i> |
| Plum (<i>Prunus domestica</i> L.) | » | + | — | — | + | — | <i>M. javanica</i> |
| Grape (<i>Vitis vinifera</i> L.) | » | + | — | — | + | — | <i>M. javanica</i> |
| Squash [<i>Benincasa hispida</i> (Thunb) Cogn.] | Quetta (Baluchistan) | + | — | — | + | — | <i>M. javanica</i> |
| Wild grass (<i>Plantago lanceolata</i> L.) | Khanazai (Baluchistan) | + | — | + | — | + | <i>M. hapla</i> |

duced on tobacco and watermelon and were identified as *M. javanica*. Only one sample reproduced on tobacco, pepper and peanut and was identified as *M. hapla*. From the results, which also confirmed the earlier identification through perineal patterns, it is concluded that *M. incognita* race 1 and *M. javanica* are the most prevalent root-knot nematodes species in the region.

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