Nematol. medit. (1979), 7: 123-125.

NOTE BREVI - SHORT COMMUNICATIONS

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RESPONSE OF SEVEN BLACK PEPPER CULTIVARS TO *MELOIDOGYNE INCOGNITA*

by

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Various authors have reported *Meloidogyne* spp. as the cause of decline and unthrifty growth of black pepper (*Piper nigrum* L.) Ayyar (1926), Nadakal (1964), D'souza *et al.* (1970) and Venkitesan (1972) in India, Ting (1975) in Malaysia, and Sharma and Loof (1974) in Brazil. In Kerala, South India, *M. incognita* (Kofoid *et* White) Chitwood is widespread and an initial inoculum of 10 larvae per plant has been found to cause severe damage to black pepper vines (Koshy *et al.*, unpublished). Seven cultivars have been screened against *M. incognita* as part of an investigation on the use of resistant pepper for nematode control.

The cultivars exposed to infection were Panniyur I, Karimunda, Kuthiravalli, Kalluvalli, Kottanadan, Narayakodi and Valiakaniakadan. Healthy cuttings of each cultivar were planted in steam sterilised sandy loam. When they had grown to 15-30 cm tall, six plants of each cultivar were transferred to pots and inoculated with approximately 5,000 freshly hatched second stage larvae of *M. incognita*. A further inoculation of 5,000 larvae to each plant was made 15 days later. The plants were maintained in a glasshouse for 7 months and then the root systems were indexed for the extent of galling by counting the number of galls in 5 cm length of root viz. mild = 1 to 5; moderate = 6 to 10; severe = 11 to 15; very severe = 16 to 20 (Table I). The roots were cut in 2 cm pieces, mixed thoroughly and a 3 g aliquot of each cultivar stained in boiling acid-fuchsin lactophenol. The stained pieces were then comminuted for 40 seconds in a Waring Blendor, the volume made up to 200 ml and three 5 ml aliquots

examined for eggs, larvae and adults (Table I). Numbers of *M. incognita* in the soil were assessed from sub-samples from each pot (Table I).

All seven cultivars were susceptible in varying degrees to *M. incognita*. The highest level of infection occurred with cv. Panniyur I and the lowest with cv. Valiakaniakadan. The root galling was related to the multiplication factor. None of the cultivars could be regarded as sufficiently resistant to provide a means of control.

Table I - *Response of seven black pepper cultivars to* M. incognita.

Cultivar	Soil and root population[a]	Multiplication factor[b]	Root-gall index[c]
Panniyur - I	77,972	7.7	3.3
Karimunda	73,187	7.3	3.0
Kalluvalli	45,004	4.5	2.0
Kuthiravalli	43,705	4.3	1.8
Narayakodi	22,965	2.2	1.7
Kottanadan	16,863	1.6	1.3
Valiakaniakadan	9,600	1.0	1.1
S.E.	13,165		
M.S.D.	36,205		

a) Mean of 6 replicates (Total/pot); b) Soil and root population increase; c) See text.

The authors thank Dr. K. V. Ahamed Bavappa, former Director, C.P.C.R.I., Kasaragod for providing necessary facilities and Shri M. C. Nambiar, Project Co-ordinator, Cashew and Spices for encouragement.

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