

Department of Entomology and Apiculture,  
Dr. Y.S. Parmar University of Horticulture and Forestry - Solan 173 230, India

## EFFECT OF *PARATYLENCHUS PRUNII* AND *MELOIDOGYNE INCOGNITA* ON PEACH SEEDLINGS

by  
G.C. SHARMA and N.K. SHARMA

While surveying peach orchards in Himachal Pradesh (India) Sharma *et al.*, (1986) described the new species *Paratylenchus prunii* which not only occurred in large populations (up to 32,000 individuals/250 g of soil) but was also widespread (recorded from 70 per cent of soil samples). *Meloidogyne incognita* (Kofoid *et* White) Chitw. was another species often found attacking peach. Comparative pathogenicity and histopathological studies of peach roots infested by these two nematode species were carried out.

Peach seedlings (*Prunus persica* Batsch.) were raised in sterilized sand by a stratification process and when rooted were individually transplanted in plastic tubes (10×4 cm) containing a pasteurised soil: sand mixture (3:1). After seven days they were inoculated with either adults and juveniles of *P. prunii* or juveniles of *M. incognita*, 10,000 individuals per tube; uninoculated controls were also maintained. Six months later the seedlings were uprooted and observations on growth characters (length and weight of shoot and root) were recorded. For histopathological observations root pieces were fixed in 4% formalin and sectioned (Sass, 1958).

Both length and weight of the shoots were adversely affected by the two nematodes (Table I). *M. incognita* caused significantly more stunting than *P. prunii*. Root length was not affected while root weight did to some extent by either species. At the end of the test there was an average of 15,250 *P. prunii* per pot or of 250 galls for each root system inoculated with one or the other nematode.

The histopathological studies revealed that *P. prunii* is mainly a cortical destructor as the entire cortex region was found damaged but the vascular region was quite intact, while *M. incognita* damaged both cortical and vascular tissues.

### Literature cited

- SASS J.E., 1958 - *Botanical Microtechnique*, The Iowa State Univ. Press, Ames, 228 pp.  
SHARMA G.C., SHARMA N.K. and KHAN E., 1986 - Two new species of the genus *Paratylenchus* Micoletzky, 1922 (Nematoda: Paratylenchinae) from Himachal Pradesh, India. *Indian J. Nematol.*, 16: 231-235.

TABLE I - Effect of *Paratylenchus prunii* and *Meloidogyne incognita* on growth of peach seedlings.

Nematode inoculated	Growth characters				Nematode populations/pot No. galls or root system
	Shoot		Root		
	Length (cm)	Weight (g)	Length (cm)	Weight (g)	
Control	31.2 <sup>a</sup>	5.8 <sup>a</sup>	15.6 <sup>a</sup>	4.3 <sup>a</sup>	—
<i>P. prunii</i>	25.6 <sup>b</sup>	3.3 <sup>b</sup>	14.1 <sup>a</sup>	4.1 <sup>a</sup>	15,250
<i>M. incognita</i>	18.1 <sup>c</sup>	1.9 <sup>b</sup>	11.9 <sup>a</sup>	2.9 <sup>b</sup>	250
C.D. at 5%	4.22	1.58	4.12	0.92	

N.B.: Figures in the columns followed by the same letter(s) do not differ significantly for P=0.05 (Duncans' Multiple Range Test).