Reaction of Black Pepper Germplasm to the Burrowing Nematode (*Radopholus similis*)*

The burrowing nematode, *Radopholus similis* is the most common endoparasitic nematode infesting black pepper (*Piper nigrum* L.). This nematode is reported to be the likely primary incitant of 'slow wilt' disease of black pepper (Venkitesan and Setty, 1977). Few black pepper cultivars were screened against this nematode for locating source of resistance / tolerance (Venkitesan and Setty, 1978). The results of screening using 30 cultivars and 36 wild collections available in the germplasm collection of National Research Centre, Calicut, are presented in this report (Table I).

Rooted cuttings of cultivars and wild collections were raised in methyl

Table I. *Reaction of cultivars/wild collections to* R. similis

Cultivars	Nematode population/ gram root	Wild collections	Nematode population/ gram root
Malamundi	2410	VTP No. 158	4120
Arakulamunda	4100	,, 176	3270
Neyyatinkaramundi	1600	,, 179	1750
Chengannoorkodi	508	,, 184	2100
Velthakaniyakadan	700	,, 191	850
Cheriyakaniyakadan	3760	,, 193	1450
Kaniyakadan	3733	,, 221	4400
Kalluvally	4100	,, 222	3450
Perumkodi	3270	,, 241	3210
Tekkan	2170	,, 253	1270
Thulamundi	1300	,, 259	870
Cheriyakaniyakadan	1840	,, 261	1270
Valiyakaniyakadan	3420	,, 266	1570
Kuthuravalli	3533	,, 269	2100
Balankotta	1260	,, 280	970
Kottanadan	900	,, 281	1010
Karimunda	3171	,, 286	574
Collection No. 801	1560	,, 296	15,00
,, 812	3240	,, 299	3560
,, 813	2220	,, 325	2170
,, 879	850	,, 332	3910
,, 920	1870	,, 368	1020
,, 933	4000	,, 369	980
Vellenamban* Yohanankodi* Kuzhivelikodi*		,, 539	1950
Panniyur-I* Cholamundi* Cheruvalli*		VTP Nos. 139* 151* 196* 216* 230* 258* 290*	
Narayakodi*		291* 301* 353* 370* 970*	

* No roots were available for estimating nematode population as the roots were completely damaged.

* *Contribution No. 514 of Central Plantation Crops Research Institute, Kasaragod*

bromide fumigated nursery mixture (sand, forest soil and cowdung at 1:2:1 ratio by volume) contained in polythene bags (15×10 cm). *R. similis* isolated from black pepper roots and multiplied axenically on carrot discs was used for inoculations. At 4–5 leaf stage the plants were inoculated @ 250 nematodes per plant. Each accession had five single plant replications and maintained under green house conditions. Six months after nematode inoculation, the plants were removed carefully from the polythene bags and roots washed free of soil particles. The root infection was assessed using a root lesion index based on the intensity of root lesions and damage to the root system. (1=no lesions; 2= few isolated lesions; 3= many lesions; few coalescing, root tips damaged; 4= many lesions, coalescing, encircling the main roots, lateral roots damaged; 5= whole root system damaged). Nematode populations per gram of roots were estimated except in plants showing complete root damage.

None of the cultivars/wild collections showed resistance/tolerance to the nematode. All the accessions screened were highly susceptible and had a root lesion index of 4.

REFERENCES

VENKITESAN, T. S. and SETTY, K. G. H. 1971. Pathogenicity of *Radopholus similis* to black pepper (*Piper nigrum* L.) *Indian J. Nematol.* 7: 17–26.

VENKITESAN, T. S. and SETTY, K. G. H. 1978. Reaction of 27 black pepper cultivars and wild forms to the burrowing nematode, *Radopholus similis* Cobb. Thorne. *J. Plant. Crops.* 6: 81–84.

K. V. RAMANA
C. MOHANDAS
P. N. RAVINDRAN

National Research Centre for Spices
Marikunnu P. O., Calicut 673 012, Kerala, India