since these are present in micro-quantities (about 1% of total dry weight) and the metabolic ions are less mobile in the plant, therefore, these may be less prone to change due to infection. Decrease of Na, S, Zn, Cu, Mn and Fe from infected roots can also be attributed to increased leaching of the elements from roots to soil (Van Gundy *et al.*, 1977). The presence of nematodes in the root samples for analysis may also alter the true picture of variations brought about in the host plants.

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Efficacy of organic amendments against *Meloidogyne incognita* infesting tomato

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Efficacy of some organic and inorganic amendments in comparison to a nematicide (carbofuran) on the yield of tomato fruits as well as control of root-knot nematode, under the field conditions was evaluated. The experiment was laid out in randomised block design with four replications at Government nursery, Srinagar (MSL 540 m, average R.H. 57.03% and Temp. 24.46°C) on sandy soil naturally infested with *Meloidogyne incognita* during 1983–84. The pre-treatment root-knot nematode population was 1 larva/g soil. Each plot (1.80 × 1.70 m) contained 9 transplanted tomato (cultivar pusa Early Dwarf) seedlings, spaced 60cm apart, row to row and plant to plant. The treatments consisted of mushroom spent up compost @ 300 Q/ha, cake of *Melia azedarach* @ 50 Q/ha, ground seeds of *M. azedarach* @ 75 Q/ha. cake of *M. azedarach* @ 25 Q/ha + Urea 1.25 Q/ha, ground leaves of *M. azedarach* @ 400 Q/ha, pine wood saw dust @ 1000 Q/ha and carbofuran @ 2 kg a.i./ha. These were mixed in soil before transplanting tomato seedlings.

At harvest, 5 plants from each bed, were uprooted carefully and rated for root-knot index on 1 to 5 scale (1 ≡ no galling, 2 = 1–25, 3 = 26–50, 4 = 51–75 and 5 = 76–100 per cent infested roots).

Spent up mushroom compost gave least root-knot index followed by cake of *M. azedarach* and ground seed which, however, were at par with each other. Carbofuran and *M. azedarach* cake +

TABLE 1. *Effect of treatments on the root-knot index and yield of tomato fruit*

Treatments	Yield/m² (kg)	Increase in yield over control (%)	Root-knot index
Spent up mushroom compost @ 300 Q/ha	2.8	177	1.3
Cake of *M. azedarach* @ 50 Q/ha	2.6	159	1.4
Ground seeds of *M. azedarach* @ 75 Q/ha	2.3	132	1.5
Cake of *M. azedarach* @ 25 Q/ha+Urea 1.25 Q/ha	2.0	95	2.2
Ground dried leaves of *M. azedarach* @ 400 Q/ha	1.1	14	2.8
Pine wood saw dust @ 1000 Q/ha	1.1	5	4.4
Carbofuran 3 G @ 2 kg. a.i./ha	1.6	64	2.2
Control (no treatment)	1.0	—	4.3
C.D. at 5%	0.4	—	4.7

Urea were moderately effective while other did not show any significant difference.

Spent up mushroom compost as well as *M. azedarach* cake increased the fruit yield significantly in comparison to other treatments. The results indicate that spent up mushroom compost and *M. azedarach* cake can be used effectively against root-knot nematode in tomato.

The author is grateful to Dr. S. Teaotia, Director and Dr. M.M. Sinha, Chief Horticulturist, Directorate of Horticulture and Fruit Utilization, U.P. for providing facilities.

Control of pigeon-pea cyst nematode, *Heterodera cajani* Koshy, 1967 by chemical seed treatment

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Heterodera cajani Koshy, 1967 is recognised as a serious problem in pulse crops. Considering the high application cost of nematicides when applied to soil, efficacy of some chemicals as seed treatment against *H. cajani* was studied and the results are reported here.

At concentrations of 0.5, 1.0 and 2.0 per cent (W/V) the respective weights of carbofuran, aldicarb, phorate and fensulfothion, on product basis, were : 2.5, 5.0, 10.0 g; 1.5, 3.0, 6.0 g; 0.75, 1.5, 3.0 g; and 1.5, 3.0, 6.0 g. The nematicides were powdered and dissolved separately in 15 ml distilled water which was sufficient to submerge 15 g seed. Pigeon-pea seed (cultivar T-21) were steeped for 30 m in one set and 60 m in another one, in each concentration of the nematicides. Thus, there were 24 sub-treatments of the three component combinations, i.e. chemical, concentration and exposure time ($4 \times 3 \times 2 = 24$).