

EFFECT OF THREE GRANULAR NEMATICIDES  
IN THE CONTROL OF ROOT-KNOT AND STUNT NEMATODES  
INFESTING TOMATO

by  
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Root-knot nematodes poses a serious threat to vegetable cultivation in India. Singh and Choudhary (1972) estimated a loss of 18-25% in yield of tomatoes due to this nematode. Stunt nematodes also are often present in the vegetable fields and frequently cause a perceptible decrease in the growth and yield of plants. The present trial reported here was carried out to evaluate the performance of three granular nematicides against *Meloidogyne incognita* (Kofoid et White) Chitwood and *Tylenchorhynchus brassicae* Siddiqi infesting tomatoes.

*Material and methods*

The experiment was carried out in a field infested with *M. incognita* and *T. brassicae* and in which cucurbits had been grown as the previous crop. Treatments applied were Aldicarb (Temik 10 G), Fensulfotion (Dasanit 5 G), Phorate (Thimet 10 G) and an untreated control. The nematicides were broadcast at the rate of 10 kg a.i./ha before transplanting and were thoroughly mixed with the soil. The experiment was laid out as a randomized block with four replicates of each treatment in plots 5 x 4 m and with 24 plants per replicate.

Population counts of *Meloidogyne* larvae and *Tylenchorhynchus* adults and larvae were made from 250 cc of soil before treatment and then two months after transplanting the tomato plants from the nursery.

## Results and conclusions

The pretreatment populations of root-knot larvae and stunt nematodes were homogeneously distributed in all the plots. Population counts at the end of the experiment showed that all the treatments were effective in controlling the stunt nematode, but both Aldicarb and Phorate were significantly better than Fensulfothion (Table I). All treatments were effective in reducing the root-knot nematode population. Only the Aldicarb treatment had a significantly higher yield than the control. Other treatments gave yield increases but did not differ significantly from the control (Table I).

Table I - Control of root-knot and stunt nematodes and yield increases of tomato obtained with three granular nematicides.

Treatment 10 kg a. i. / ha	M. incognita population		T. brassicae population		Yield / plot in kg
	Pre-treatment	* Post-treatment	Pre-treatment	* Post-treatment	
Aldicarb	68	4.58	238	6.23	6.05
Fensulfothion	65	1.89	220	10.12	4.77
Phorate	58	2.38	275	6.23	2.24
Control	53	22.30	240	21.44	1.58
C.D. (P = 0.05)	NS	4.22	NS	3.16	3.25

\* Mean of  $\sqrt{n+1}$  transformation of population.

## S U M M A R Y

Three granular nematicides, Aldicarb, Fensulfothion and Phorate at 10 kg a.i./ha were tested for control of *Meloidogyne incognita* (Kofoid et White) Chitwood and *Tylenchorhynchus brassicae* Siddiqi infesting tomato. All the treatments were highly effective in controlling both these nematodes but significant increases in yield were observed only in plots treated with Aldicarb.

## R I A S S U N T O

*Effetto di tre nematocidi granulari nella lotta contro Meloidogyne incognita e Tylenchorhynchus brassicae su Pomodoro.*

Tre nematocidi granulari, Aldicarb, Fensulfothion e Phorate sono stati saggiati alla dose di 10 kg p.a. per ettaro nella lotta contro *Meloidogyne incognita* (Kofoid et White) Chitwood e *Tylenchorhynchus brassicae* Siddiqi, parassiti del Pomodoro. I tre trattamenti sono risultati molto efficaci nel controllo di questi nematodi, ma un significativo incremento della produzione è stato ottenuto soltanto con l'Aldicarb.

## R É S U M É

*Effet de trois nématicides granulés dans le contrôle de Meloidogyne incognita et Tylenchorhynchus brassicae sur tomate.*

Trois nématicides granulés: Aldicarb, Fensulfothion et Phorate, ont été essayés à la dose de 10 kg M.A. par hectare contre *Meloidogyne incognita* (Kofoid et White) Chitwood et *Tylenchorhynchus brassicae* Siddiqi, parasites de tomate. Les trois traitements ont été très efficaces pour contrôler ces nématodes, mais un accroissement significatif de rendement n'a été remarqué qu'avec l'Aldicarb.

## LITERATURE CITED

- SINGH B. and CHOUDHARY B., 1972 - Extent of damage caused by *Meloidogyne javanica*, *M. incognita* and *M. arenaria* in tomato (*Lycopersicon esculentum* Mill.). Proc. of the third International Symposium on Sub-tropical and Tropical Horticulture.

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Accepted for publication on 19 September 1974.