

Department of Nematology, TNAU —Coimbatore, India

STUDIES ON THE PATHOGENICITY OF *XIPHINEMA BASIRI* ON TOMATO AND BRINJAL

by
R. S. BABU and T. S. MUTHUKRISHNAN

Summary In pot experiments *Xiphinema basiri* reproduced actively on tomato and brinjal and resulted to be pathogenic on both plants.

In India *X. basiri* Siddiqi has been found in the rhizosphere of various crop plants (Roy, 1973). Results of studies conducted on the pathogenicity of this nematode on brinjal (*Solanum melongena* Cv. Co. 1.) and tomato (*Lycopersicon esculentum* cv. Co. 1.) are reported here.

One litre clay pots were filled with field soil from a plantation of West Indian cherry (*Malpighia puniceifolia*) containing *X. basiri*. The initial nematode population was determined after Cobb's wet sieving method and addi-

tional nematodes were added where necessary to give population levels of 100, 1000 and 10000 individuals per pot. Pots containing steam sterilized field soil were used for the nematode free controls and for a treatment with 10 nematodes per pot. Single one month old tomato or brinjal plants were transplanted in each pot. There were five replicates of each treatment. Final nematode numbers, plant shoot and root lengths and plant weights were recorded after 85 days for tomato and 75 days for brinjal.

TABLE Effect of different inoculum levels of *Xiphinema basiri* on tomato and brinjal.

Initial population level	Shoot length (CM)		Root length (CM)		Seedling weight (g)		Population (pf/pi) ratio	
	Tomato	Brinjal	Tomato	Brinjal	Tomato	Brinjal	Tomato	Brinjal
0	22 ^a	17 ^a	19 ^a	11 ^a	4.3 ^a	1.7 ^a	0.0	0
10	18 ^b	17 ^a	14 ^b	9 ^a	3.4 ^b	1.3 ^b	12.0	67.2
100	16 ^b	16 ^a	9 ^c	9 ^a	2.4 ^c	1.1 ^b	3.3	22.9
1000	9 ^c	9 ^b	5 ^d	3 ^b	1.7 ^d	0.5 ^c	1.2	2.4
10000	7 ^c	7 ^b	3 ^d	3 ^b	1.3 ^d	0.2 ^c	0.5	0.1
CD (P = 0.01)	2.58	2.82	2.97	4.26	0.48	0.28		

Means with notations by the same case letter do not differ at 1% level according to the Duncan's multiple range test.

The growth of both plant species was significantly affected by *X. basiri* (Table I). Mean shoot lengths, in relation to the nematode free controls, were reduced by between 17 to 65% for tomato and 3 to 56% for brinjal, mean root lengths were reduced by between 29 to 82% for tomato and 14 to 69% for brinjal and mean plant weights were reduced by between 20 to 71% for tomato and 26 to 90% for brinjal. The rate of nematode reproduction (pf/pi)

was largest with the lowest initial inoculum level and smallest with the highest inoculum level on both plant species.

Literature cited

ROY T. K., 1973 - Notes on the pathogenicity of *Xiphinema basiri* Siddiqi, 1959 and its host records. *Indian J. Nematol.*, 3: 161-163.