PLANT-PARASITIC NEMATODE GENERA ASSOCIATED WITH CROPS IN ONTARIO IN 1972

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Approximately 1000 soil and root samples from about 40 different crops (Table 1) were processed through the Ontario Nematode Diagnostic and Advisory Service in 1972. The number of samples submitted by extension specialists was similar to that in 1971 (1) and it seems likely that the use of the Service by these workers will stabilize at about 300 samples per year. Direct grower participation in the Service continued to decline, possibly reflecting the increase in routine use of soil fumigation for control of nematodes, particularly by flue-cured tobacco growers.

A survey of about 2500 acres of flue-cured tobacco in the Delhi area showed that root-lesion nematodes, Pratylenchus spp. Filip. 1936, were present throughout the entire area. The population densities were generally low except for a few instances where the soil had not been treated with a nematicide (Table 1). The northern root-knot nematode, Meloidogyne hapla Chitwood 1949,

Table 1. Genera of plant-parasitic nematodes identified from soil samples processed by the Ontario Nematode Diagnostic and Advisory Service in1372

Crop	No. of samples	Cyst larvae	Root knot	Root lesion	Spiral	Lance	Pin	Stunt	Dagger	Ring	Sheath	Stubby root
Apple	12			1000/11[T]	150/2		270/9	100/1				
Barley	4			1800/2	200/2		1200/3	50/1				
Bean	2			170/2			320/2	50/1				
Buckwheat	1			850/1	1250/1		700/1					
Cauliflower	1			400/1								
Cherry (choke)	1				1050/1				250/1			
Cherry (sour)	3			600/3	2300/1		50/1			10/1		
Cherry (sweet)	5			230/4			60/2					
Corn	22	270/5		1240/20	80/6		180/4	140/4				
Fallow	20	120/3		440/17	100/2		420/12			50/1		
Grain	1	300/1		850/1	50/1							
Grain (mixed)	3	170/3		880/3								
Juniper	4			570/3								
Lettuce	1			1050/1								
Marigold	1			800/1	50/1		400/1	50/1				
Mushroom	1											
Oat	2			2220/2			300/1					
Onion	4			1050/3	250/3			100/2				
Onion sets	9											
Parsnip	1											
Pea	19			30/1			50/1			50/2		
Peach	20	100/1		520/20	170/7		360/12	180/3	80/6	100/1	700/1	
Pepper	1											
Plum	5			340/4	1620/2		50/4					
Potato	29		610/4	700/26			50/4	100/2				
Raspberry (wild)	1				950/1				250/1			
Rhodendron	3							100/2				40/1
Rose	32			450/18	2700/14		10/1	130/9	200/2			
Rhubarb	3	900/1		1200/1			5300/3					
Rye	6	10/1		1690/5			550/3	50/1				
Strawberry	2			190/2			200/1	100/1				
Tobacco seedbed (burley)	6			1360/6				50/1				
Tobacco seedbed (flue-cured)	1			150/1								
Tobacco (flue-cured)	112	80/3	50/1	1300/100		100/1	100/26	130/19				
Tobacco-survey	567		15/6	180/426	20/157		50/134					
Tomato-field	2			3600/2			90/1					
Tomato-greenhouse	11		1500/10	370/2				50/1				
Violet	1		10050/1									
Wheat	4		50/1	100/1								
Miscellaneous	71			300/12	180/8		110/10	60/11	200/1			

[T] Average number of nematodes/lb of soil/number of samples containing the nematode.

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was found infrequently and in very low numbers in the area surveyed.

The northern root–knot nematode caused considerable damage to African violets (Saintpaulia sp.) in a commercial greenhouse at Pine Grove, Ontario. Infected plants were unthrifty with dull, wilting, chlorotic leaves; the roots were severely knotted and necrotic. Rooting benches, rooted cuttings, and potted plants for the wholesale market were infested. The general infestation resulted from infested stock plants being grown above the rooting beds and benches of potted plants. The nematodes were readily spread by watering the infested stock. In addition inadequate cleaning of the rooting benches also contributed to the general infestations. The control program recommended, consisting of an application of dimethoate (Cygon 4E, 1 oz/gal of water) as a soil drench once weekly for 3 weeks and every third week thereafter, apparently controlled the nematodes.

As noted previously (1), Table 1 shows that pin nematodes, Paratylenchus spp., are prevalent and thrive on many crops in Ontario. Within this genus P. projectus Jenkins 1956 appears to be the most common species. The new species, Paratylenchus tateae Wu & Townshend 1973 (2) was found associated with corn, alfalfa, and clover in southwestern Ontario and may prove to be more widely distributed.

Literature cited

1. Marks, C. F., J. L. Townshend, J. W. Potter, Th. H. A. Olthof, P. W. Johnson, and J. Lounsbery, 1972. Plant–parasitic nematode genera associated with crops in Ontario in 1971. Can. Plant Dis. Surv. 52:102–103.

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