

## PLANT-PARASITIC NEMATODE GENERA ASSOCIATED WITH CROPS IN ONTARIO IN 1968

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The Ontario Nematode Diagnostic and Advisory Service processed 442 soil samples for growers in 1968, as compared to 724 samples in 1967. The decline of 39% was mainly due to a drop of 42% in the number of tobacco soil samples received, which reflected a combination of weather conditions unfavorable for showing nematode-induced plant damage and the increasing practice of regularly fumigating the soil without having a nematode assessment carried out. The samples originated from 29 crops covering the spectrum of agricultural activities in southern Ontario. Actively moving nematodes and cysts were recovered from the soil with techniques described earlier (1).

Root-lesion nematodes, *Pratylenchus* spp., were present in 20 of the crops sampled. The average number per pound of soil was considerably smaller than in previous years (1, 3, 4). Pin nematodes, *Paratylenchus* spp., were present in most samples of forced winter rhubarb, with populations ranging from 600 to 13,200 per pound of soil. Work is in progress on the association of this nematode with yield.

Populations of dagger nematodes, *Xiphinema* spp., and ring nematodes, *Cricemoides* spp., were again fairly low in 1968. As pointed out earlier (1), this may be due to the rather inefficient extraction technique in use.

The number of samples containing spiral nematodes, *Helicotylenchus* spp., was very much smaller than in 1967, whereas stunt nematodes, *Tylenchorhynchus* spp., occurred more commonly in 1968. The reason for this shift is not known. Only two samples were received this year infested with the root-knot nematode, *Meloidogyne* spp. This also contrasts sharply with 1967, when 35 samples contained this nematode.

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The oat cyst nematode, *Heterodera avenae* Wollenweber, was found in barley and corn, and the sugar beet nematode, *H. schachtii* Schmidt, in rhubarb and spinach. The lance nematode, *Hoplolaimus* spp., was encountered once in tobacco near Simcoe, Ontario. The bulb and stem nematode, *Ditylenchus dipsaci* (Kühn) Filipjev, was found parasitizing onions in muck soil in the Leamington Marsh, Ontario.

This nematode has been shown to be a serious threat to onions in southwestern Ontario (2). An unidentified species of *Ditylenchus* (not *D. dipsaci* or *D. myceliophagus*) damaged mushrooms in a single house in southern Ontario. The nematode probably originated from the sawdust insulation, as large numbers were recovered from it and the heaviest damage occurred in the top trays.

As in previous years, tobacco roots included with samples were rated visually for severity of black root rot caused by the fungus *Thielaviopsis basicola* (Berk. & Br.) Ferr. Of 151 samples rated black root rot was absent in 33, while 45 showed a trace infection, 32 were lightly infected, 29 moderately and 12 severely. The incidence and severity of the disease was considerably less than in 1967.

### Literature cited

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Table 1. Plant parasitic nematodes associated with Ontario crops in 1968

Crop	<u>Praty-</u> <u>lenchus</u>	<u>Paraty-</u> <u>lenchus</u>	<u>Xiphi-</u> <u>nema</u>	<u>Cricone-</u> <u>moides</u>	<u>Helicoty-</u> <u>lenchus</u>	<u>Tylencho-</u> <u>rhynchus</u>	<u>Meloido-</u> <u>gyne</u> larvae	<u>Hetero-</u> <u>dera</u> larvae	<u>Hoplo-</u> <u>laimus</u>	<u>Dity-</u> <u>lenchus</u>
Apples (2)*	150/2**	0/0	50/2	0/0	0/0	150/2	0/0	0/0	0/0	0/0
Barley (3)	200/3	275/2	50/1	0/0	0/0	0/0	0/0	2600/2	0/0	0/0
Beets (1)	400/1	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Buckwheat (4)	188/4	150/1	50/1	0/0	0/0	100/3	0/0	0/0	0/0	0/0
Carrots (4)	200/2	100/2	0/0	0/0	0/0	0/0	3000/1	0/0	0/0	0/0
Cabbage (2)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Corn (6)	930/5	150/2	0/0	0/0	0/0	200/1	0/0	833/3	0/0	0/0
Cherries (sweet) (10)	985/10	183/3	0/0	0/0	0/0	200/1	0/0	0/0	0/0	0/0
Cherries (sour) (2)	3800/1	200/2	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Cauliflower (1)	350/1	50/1	20/1	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Hay (1)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Lettuce (4)	1000/1	0/0	0/0	0/0	0/0	300/1	0/0	0/0	0/0	0/0
Mushroom (4)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Onion (3)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	2600/1
Parsnips (1)	1500/1	0/0	200/1	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Peat moss (2)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Peaches (29)	977/24	872/18	413/4	150/3	0/0	392/6	0/0	0/0	0/0	0/0
Potatoes (10)	729/7	30/2	0/0	0/0	0/0	83/3	0/0	0/0	0/0	0/0
Radish (1)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Rhubarb (18)	786/14	5807/15	10/1	0/0	0/0	0/0	0/0	6721/7	0/0	0/0
Roses (12)	353/6	200/2	0/0	700/1	0/0	2260/2	0/0	0/0	0/0	0/0
Strawberries (14)	422/9	412/5	35/2	0/0	0/0	167/3	0/0	0/0	0/0	0/0
Soybean (1)	50/1	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Shrubs (28)	216/7	125/4	100/7	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Spinach (6)	50/1	100/4	0/0	0/0	0/0	0/0	0/0	867/3	0/0	0/0
Tomatoes (2)	0/0	0/0	0/0	0/0	0/0	0/0	50/1	0/0	0/0	0/0
Turf (1)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Tobacco (269)	1069/220	209/66	37/16	50/2	47/3	169/31	0/0	0/0	50/1	0/0
Wheat (1)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Total (442)	717/320	242/129	97/36	300/6	47/3	402/53	1525/2	2755/15	50/1	2600/1

\* Number of soil samples processed.

\*\* Average number of nematodes per lb of soil/number of samples containing the nematode.