

2006 ANNUAL REPORT
NEMATODE TESTING SERVICE
DEPARTMENT OF BOTANY AND PLANT PATHOLOGY
OREGON STATE UNIVERSITY

Kathy Merrifield, Extension Nematologist

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TABLE 1. TOTAL NEMATODE SAMPLES BY YEAR

<u>Year</u>	<u>Samples</u>	<u>Year</u>	<u>Samples</u>
1993	669	1999	976
1994	803	2000	1014
1995	812	2001	1367
1996	657	2002	1547
1997	599	2003	985
1998	402	2004	1144
2005	674	2006	1246

TABLE 2. 2006 SAMPLES RECEIVED BY MONTH

<u>Month</u>	<u>Samples</u>	<u>Month</u>	<u>Samples</u>
Jan	100	Jul	82
Feb	3	Aug	93
Mar	117	Sep	291
Apr	147	Oct	199
May	53	Nov	43
Jun	61	Dec	57

Russ Ingham and Nadine Wade did all the March samples, because I was out getting my hip replaced. This enabled me to process far more samples than in 2005 during the rest of the year.

During this never-ending growing season, I was so overwhelmed with samples that I finished November replies on December 21 and December replies on January 19, 2007. Samples continued to arrive in large numbers in January, so there was no break between growing seasons. I've usually taken vacation in December or January after the end of the crop season. This was not possible after the 2006 crop year.

TABLE 3. 2006 SAMPLES LISTED BY CROP

FRUITS		ORNAMENTALS AND TURF	
Grape	20	Miniature roses	2
Raspberry	1	Geranium	1
Blackcap	9	Iris	1
Blackberry	4	Lily (non-Easter)	3
Unspecified caneberry	6	Easter lily	3
Tomato	38	Astilbe	12
Strawberry	2	Hosta	23
Blueberry	51	Sycamore	1
Cherry	3	Golf greens	<u>34</u>
Apple	<u>3</u>	TOTAL	92
TOTAL	137		
VEGETABLES		WOOD	
Onion	41	Spruce	2
Carrot	10	Spruce/hemlock	2
Carrot-wheat rotation	88	Spruce/hemlock/cedar	2
Cabbage	1	Unknown	<u>1</u>
Radish	2	TOTAL	7
Eggplant	<u>1</u>		
TOTAL	159		
POTATO	60	OTHER	
POTATO-GRAIN		Pasture	1
ROTATION	511	Fallow	1
		Bird feeder residue	1
		Potato flaking plant effluent	1
		Unknown	<u>12</u>
		TOTAL	16
FIELD AND FORAGE			
Peppermint	70		
Canola	4		
Alfalfa	5		
Dry pea	94		
Clover	5		
Wheat	12		
Rye	1		
Oats	1		
Corn	56		
Kentucky bluegrass	4		
Poa trivialis	5		
Fescue	3		
Unknown grass	<u>4</u>		
TOTAL	264		
		GRAND TOTAL	1246

TABLE 4. 2006 SAMPLES BY SUBMITTER CATEGORY

<u>Submitter</u>	<u>Samples</u>
Agricultural service field representatives (sell ag chemicals)	248
Private consultants (do not sell ag chemicals)	517
Extension and research	372
Growers	73
Government agencies	34
Potato processing plant	<u>2</u>
TOTAL	1246

TABLE 5. 2006 SAMPLES BY LOCATION

OREGON		WASHINGTON	
Benton	22	Benton	3
Clackamas	3	Franklin	1
Columbia	2	Island	42
Crook	2	King	27
Deschutes	4	Washougal	4
Douglas	4	Unknown	<u>0</u>
Hood River	2	WASHINGTON TOTAL	77
Jefferson	115		
Klamath	3	ALASKA	9
Lane	54	COLORADO	208
Linn	10	IDAHO	8
Marion	36	MONTANA	12
Multnomah	6	NORTH DAKOTA	93
Polk	34	UTAH	2
Umatilla	14	ANOTHER STATE*	<u>455</u>
Union	6	OTHER STATES TOTAL	787
Wasco	1		
Washington	52		
Yamhill	11		
Unknown	<u>3</u>		
OREGON TOTAL	382	GRAND TOTAL	1246

*Submitter requires complete confidentiality

TABLE 6: 2006 MATERIALS SUBMITTED

<u>Material</u>	<u>Samples</u>
Soil for standard extraction	1031
Soil for cyst extraction	2
Roots	152
Stems or leaves, including bulbs	6
Tubers	26
Wood chips	7
Seeds	4
Nematodes already extracted, ready for examination	12
Entomopathogenic nematodes inside of beetle pupae	2
Potato plant effluent	2
Debris from under urban bird feeder	1
Request for literature survey ¹	<u>1</u>
GRAND TOTAL	1246

¹After a phone conversation during the past couple of years regarding a pinewood nematode sample he submitted, the client, who has a low opinion of government employees, decided that I am the only government employee who has a functional brain. I do not agree, of course, but he is a nice person despite this opinion. He phones about one to two times per year with a question relating to wood anatomy or other issues relating to the shipment of wood products to other countries. On this occasion, he had no idea where to start looking for whatever it was he needed, so he phoned to ask me again. I wouldn't have had to just hang up and tell him to go away unless I took some time to search (on the internet as a poor second to my personal library), so I asked if I could charge him for my time. I looked up some information and e-mailed some and U.S.-Mailed the remainder.

TABLE 7: 2006 SPECIES IDENTIFICATIONS

<i>Pratylenchus</i>	
Oregon	144
Washington	7
Colorado	79
Montana	<u>5</u>
TOTAL	235
<i>Meloidogyne</i> from second-stage juveniles	
Oregon	11
Washington	12
Colorado	26
Idaho	2
Another state ¹	<u>203</u>
TOTAL	255
<i>Meloidogyne</i> from perineal patterns	
Colorado	<u>2</u>
TOTAL	2
<i>Trichodorus sensu lato</i>	
Washington	1
Colorado	<u>7</u>
TOTAL	8
<i>Xiphinema</i>	
Colorado	<u>1</u>
TOTAL	1
<i>Helicotylenchus</i>	
Oregon	4
Washington	1
Colorado	<u>2</u>
TOTAL	7
<i>Rotylenchus</i>	
Washington	<u>1</u>
TOTAL	1
GRAND TOTAL	509

¹Client requires complete confidentiality

TABLE 8. NOTEWORTHY GENUS AND SPECIES RECOVERIES, 2006

Nematode Genus	Nematode Species	Host	Nem/100g soil; nem/g fresh tissue, PCN No.; County; State; Month; Other..
<i>Helicotylenchus</i>	<i>canadensis</i>	Peppermint	1683 sl; PCN 365; Lane, OR; April; huge.
<i>Helicotylenchus</i>	<i>canadensis</i>	Peppermint	3-72 sl; PCN 594-595; Lane, OR; same field in August; still huge.
<i>Helicotylenchus</i>	<i>canadensis</i>	Sweet cherry	0-6 sl; PCN 996-998; Oct; Benton, WA; w/ <i>Prat, Mel</i> after asparagus.
<i>Helicotylenchus</i>	<i>pseudorobustus</i>	Onion, vegg	1-47 sl; PCN 795-812; Sept; Yuma, CO.
<i>Hemicycliophora</i>	sp.	Sweet cherry	0-2 sl; PCN 996-998; Oct; Benton, WA; w/ <i>Prat, Mel</i> ; after asparagus.
<i>Heterodera</i>	<i>avenae</i>	Blueberry	1-14 eggs, 2-7 J2, sl; PCN 287-288; Apr; Island, WA; cover crop?
<i>Heterodera</i>	<i>avenae</i>	Blueberry	0-113 J2 sl; PCN 304-343; Apr; Island, WA; weeds or cover crop?
<i>Hoplolaimus</i>	sp.	Dry pea	0-13 sl; PCN 29-49; Jan; various counties, North Dakota.
<i>Longidorus</i>	<i>elongatus</i>	Peppermint	1 sl; PCN 392; May; Benton, OR.
<i>Meloidogyne</i>	<i>chitwoodi</i>	Apple	133 sl; PCN 280; Apr; Franklin, WA; w/ <i>P. pen</i> ; weeds or cover crop?
<i>Meloidogyne</i>	<i>chitwoodi</i>	Potato	Perineal pattern ID from peels; PCN 593; Aug; Umatilla, OR.
<i>Meloidogyne</i>	<i>hapla</i>	<i>Hosta</i>	505-903 rt; PCN 1,2; Jan; Marion, OR.
<i>Meloidogyne</i>	<i>hapla</i>	<i>Hosta</i>	77 sl; PCN 299; Apr; Marion, OR
<i>Meloidogyne</i>	<i>hapla</i>	Peppermint	442 sl, 39 rt; PCN 395-396; May; Jefferson, OR.
<i>Meloidogyne</i>	<i>hapla</i>	Fallow, tarped	8 sl, PCN 948; Oct; King, WA; with <i>R. uniformis, P. pen</i> ; formerly vegg.
<i>Meloidogyne</i>	<i>hapla</i>	Sweet cherry	19 sl; PCN 998; Oct; Benton, WA; w/ prat, spiral; after asparagus.
<i>Meloidogyne</i>	<i>hapla</i>	Grapes	2740 sl; PCN 1048; Oct; Douglas, OR.
<i>Meloidogyne</i>	<i>naasi</i>	Grapes	33 rt; PCN 129; Mar; Polk, OR; with <i>P. cren</i> ; following <i>Lolium</i> .
<i>Meloidogyne</i>	<i>naasi</i>	Radish	21 sl weak, 0 sl strong; PCN 445-446; Jun; Marion, OR; w/ <i>P. cren</i> .
<i>Meloidogyne</i>	<i>naasi</i>	Wheat	211 sl; PCN 516; Jul; Jefferson, OR; w/ 89 <i>P. cren/thornei</i> .
<i>Meloidogyne</i>	<i>naasi</i>	Grass (golf green)	192, 65 sl; PCN 550, 552; Jul; Wash., OR; with <i>P. cren, P-trik allius</i> .
<i>Meloidogyne</i>	<i>naasi</i>	Grass (golf green)	348 sl, 0 rts; PCN 587-588; Aug; King, WA; diseased; with <i>P-trik allius</i> .
<i>Meloidogyne</i>	<i>naasi</i>	Onion	2-13 sl, 1-81 rt; PCN 769-772; Deschutes, OR; Sept; higher in diseased.
<i>Meloidogyne</i>	<i>naasi</i>	Marion (black)berry	13 sl; PCN 779; Sept; Benton, OR; w/ <i>P. cren/neg</i> . Cover crop?
<i>Meloidogyne</i>	<i>naasi</i>	Grass (golf green)	32-76 sl; 0 rts; PCN 1152-1157; Nov; King, WA; w/ <i>Subanguina</i>
<i>Meloidogyne</i>	<i>naasi</i>	Grass (golf green)	114-184 sl; 0 rts; PCN 1176-1179; Nov; Cowlitz, WA; + ring, <i>Prat, P-trik</i> .
<i>Meloidogyne</i>	<i>naasi</i>	Grass (golf green)	80 sl; <1 rts; PCN 1192-1193; Dec; Multnomah, OR.
<i>Meloidogyne</i>	<i>naasi</i>	Grass (golf green)	8-758 sl; 0-88 rts; PCN 1195-1200; Dec; King, WA.
<i>Mesocriconema</i>	sp.	Grass (golf green)	526-556 sl; PCN 1176-1777; Nov; Cowlitz, WA; w/ <i>M. naasi, Prat, P-trik</i> .
<i>Paratrichodorus</i>	<i>allius</i>	Potato	2-8 sl; PCN 451-452, 457-458; Jun; Yuma, CO; with <i>P. neg/scrib</i> .
<i>Paratrichodorus</i>	<i>allius</i>	Grass (golf green)	2-3 sl; PCN 552, 554; Jul; Washington, OR; with <i>P. cren, M. naasi</i> .
<i>Paratylenchus</i>	sp.	Dry pea	0-737 sl; PCN 3-95; Jan; various counties, North Dakota.
<i>Paratylenchus</i>	sp.	Peppermint	574 sl; PCN 268; Apr; Linn, OR; with <i>Prat</i> sp.
<i>Paratylenchus</i>	sp.	Peppermint	1076-1404 sl; PCN 272-277; Apr; Polk, OR; with a few <i>Prat</i> sp.
<i>Paratylenchus</i>	sp.	Blueberry	0-649 sl; PCN 304-343; Apr; Island, WA.
<i>Paratylenchus</i>	sp.	Peppermint	319-611 sl, 0-45 rts; ; PCN 354-363; Apr; Benton, OR.
<i>Paratylenchus</i>	sp.	Carrot	14-362 sl; PCN 380-386; May; Jefferson, OR.
<i>Paratylenchus</i>	sp.	Peppermint	1605 sl, 15 rts; PCN 395-396; May, Jefferson, OR; w/ low <i>Prat</i> .
<i>Paratylenchus</i>	sp.	Peppermint	79-3134 sl; 436-441; Jun; Union, OR; with mixed <i>Prat</i> .
<i>Paratylenchus</i>	sp.	Peppermint	1589 sl; PCN 546; Jul; Jefferson, Oregon.
<i>Paratylenchus</i>	sp.	Peppermint	5-6802 sl; 0-71 rts; PCN 955-968; Oct; Polk, OR; w/ <i>P. pen/cren</i> .
<i>Pratylenchus</i>	<i>agilis</i>	Onion	1 among <i>scrib</i> sl; PCN 800; Sept; Yuma, CO.

TABLE 8, continued

Nematode Genus	Nematode Species	Host	Nem/100g soil; nem/g fresh tissue, PCN No.; County; State; Month; Other..
<i>Pratylenchus</i>	<i>crenatus</i>	Grapes	186-464 rt; PCN 129, 130; Feb; Polk, OR; with <i>M. naasi</i> ; after <i>Lolium</i> .
<i>Pratylenchus</i>	<i>crenatus</i>	Lilac	14-98 sl; PCN 289-291; Apr; Washington, OR.
<i>Pratylenchus</i>	<i>crenatus</i>	Strawberry	66 sl; PCN 443; Jun; Washington, OR; with a few <i>penetrans</i> .
<i>Pratylenchus</i>	<i>crenatus</i>	Radish	37-51 sl; PCN 445-446; Jun; Marion, OR; with some <i>thornei</i> ; <i>M. naasi</i> .
<i>Pratylenchus</i>	<i>crenatus</i>	Fescue	28-58 sl; PCN 449-450; Jun; Polk, OR.
<i>Pratylenchus</i>	<i>crenatus</i>	Blackcaps	19-88 sl; PCN 547-549; Jul; Washington, OR.
<i>Pratylenchus</i>	<i>crenatus</i>	Grass (golf green)	22 sl; PCN 554; Aug; Washington, OR; with <i>M. naasi</i> , <i>P-trik allius</i> ..
<i>Pratylenchus</i>	<i>crenatus</i>	Cabbage, flowers	164-208 sl; PCN 574-576; Aug; Marion, OR.
<i>Pratylenchus</i>	<i>crenatus</i>	Grass (golf green)	319 sl, 0 rts; PCN 589; Aug; King, WA; healthy area; with <i>P-trik allius</i> .
<i>Pratylenchus</i>	<i>crenatus</i>	Peppermint	21-27 sl; 3-6 rts; PCN 594-597; Lane, OR; w/ <i>Helicotylenchus canadensis</i> .
<i>Pratylenchus</i>	<i>crenatus</i>	Blackberry	88 sl, 31 rts; PCN 614-615; Yamhill, OR; w/ <i>neg, pen</i> .
<i>Pratylenchus</i>	<i>crenatus</i>	Grass	60 sl; PCN 730; Sept; Lane, OR.
<i>Pratylenchus</i>	<i>crenatus</i>	Red clover	253 sl; PCN 969; Oct; Washington, OR; followed oats.
<i>Pratylenchus</i>	<i>crenatus</i>	Grass (golf green)	7-62 sl, 0-4 rts; PCN 1026-1029; Oct; King, WA; higher in diseased.
<i>Pratylenchus</i>	<i>crenatus</i>	Blackcaps	117 sl; PCN 1190-1191; Nov; Marion, OR.
<i>Pratylenchus</i>	<i>cren/neg</i>	Caneberry	10-32 sl; 1-6 rts; PCN 636-639; Aug; Yamhill, OR.
<i>Pratylenchus</i>	<i>cren/neg</i>	Marion (black)berry	65 sl; PCN 779; Sept; Benton, OR; w/ <i>M. naasi</i> .
<i>Pratylenchus</i>	<i>neglectus</i>	Alfalfa	251 sl; PCN 103; Feb; Jefferson, OR.
<i>Pratylenchus</i>	<i>neglectus</i>	<i>Poa trivialis</i>	376 sl, 3 rts; PCN 293-294; Apr; Jefferson, OR.
<i>Pratylenchus</i>	<i>neglectus</i>	Cherry	557 sl; PCN 353; Apr; Wasco, OR; after wheat.
<i>Pratylenchus</i>	<i>penetrans</i>	Apple	59 sl; PCN 280; Apr; Franklin, WA; w/ <i>Mel chit</i> .
<i>Pratylenchus</i>	<i>penetrans</i>	Peppermint	16-469 sl; 19-770 rts; May; Benton, OR; high in diseased.
<i>Pratylenchus</i>	<i>penetrans</i>	Peppermint	107 sl, 397 rt; PCN 671-672; Sept; Crook, OR; with <i>P-trik allius</i> .
<i>Pratylenchus</i>	<i>penetrans</i>	Fallow, tarped	33 sl; PCN 948; Oct; King, WA; w/ <i>R. uniformis</i> , <i>P. pen</i> ; formerly veg.
<i>Pratylenchus</i>	<i>penetrans/crenatus</i>	Peppermint	6-63 sl, 109-535 rts; PCN 955-968; Oct; Polk, OR; w/ pin.
<i>Pratylenchus</i>	<i>scribneri?</i>	Potato	From tuber peels! PCN 621; Aug; unsuccessful quest for <i>Mel</i> .
<i>Pratylenchus</i>	<i>vulnus</i>	Grapes after grass	5-81 sl, 0-14 rts; PCN 591-592; Aug; Hood River, OR; with pin.
<i>Pratylenchus</i>	<i>cren/thrn/neg/(th)</i>	Carrot after wheat	171-1997 sl; PCN 380-386; May; Jefferson, OR; with pin; ext'n survey.
<i>Pratylenchus</i>	<i>cren/thrn/neg/(th)</i>	Wheat after carrot	206-449 sl; PCN 602-613; Aug; Jefferson, OR, with pin; selected fields.
<i>Pratylenchus</i>	<i>cren/neg/scrib?/thrn/pen</i>	Peppermint	8-568 sl; PCN 436-441; Jun; Union, OR; with pin.
<i>Pratylenchus</i>	<i>neg/cren/thrn</i>	Wheat before carrot	1-208 sl, 1-528 rt; PCN 484-535; Jul; Jefferson, OR.
<i>Pratylenchus</i>	<i>neg/thrn/cren/scrib?</i>	Carrot after wheat	117-734 sl, 357-5100 rts; PCN 816-827; Sept; Jefferson, OR.
<i>Pratylenchus</i>	<i>neg/scribneri?</i>	Potato	0-403 sl; PCN 451-466; Jun; Yuma, CO; w/ <i>Paratrik allius</i> .
<i>Pratylenchus</i>	<i>neg/scribneri?</i>	Potato & Onion	9-93 sl; PCN 538-542; Jul; Yuma, CO.
<i>Pratylenchus</i>	<i>neg/scribneri?</i>	Potato & Onion	18-47 sl; PCN 560-563; Aug; Yuma, CO.
<i>Pratylenchus</i>	<i>neg/scribneri?</i>	Wheat	0-63 sl; PCN 577-586; Aug; various counties, Montana.
<i>Pratylenchus</i>	<i>neg/scribneri?</i>	Onion	22-249 sl; PCN 737-742; Jun, 748-757; Yuma, CO.
<i>Pratylenchus</i>	<i>neg/scribneri?</i>	Sweet cherry	33-115 sl; PCN 996-998; Oct; Benton, WA; followed asparagus.

TABLE 8, continued

Nematode Genus	Nematode Species	Host	Nem/100g soil; nem/g fresh tissue, PCN No.; County; State; Month; Other.
<i>Pratylenchus</i>	<i>scribneri?/neg</i>	Vegetables	28-42 sl; PCN 743-747; Sept; Yuma, CO.
<i>Pratylenchus</i>	<i>scribneri?/neg</i>	Potato	13-277; PCN 758-763; Sept; Yuma, CO.
<i>Pratylenchus</i>	<i>scribneri?/neg</i>	Onion	2-55 sl; PCN 795-802; Sept, Yuma, CO; <i>P. agilis</i> in 800, w/ <i>H. pseudorobustus</i> , stunt.
<i>Pratylenchus</i>	<i>scribneri?/neg</i>	Vegetables	2-64 sl; PCN 803-812; Sept; Yuma, CO, w/ <i>H. pseudorobustus</i> , stunt.
<i>Pratylenchus</i>	<i>scribneri?/neg</i>	Onion, potato, veg	17-491 sl; PCN 887-902; Sept; Yuma, CO; w/ low stunt, spiral.
<i>Pratylenchus</i>	<i>thrn/cren</i>	Grapes	20 sl; PCN 1045; Oct; Douglas, OR.
<i>Pratylenchus</i>	<i>thrn/neg/cren/pen</i>	Wheat/mustard/ <i>Poa</i>	460-1456 sl; PCN 471-475; Jun; Jefferson, OR.
<i>Rotylenchus</i>	<i>uniformis</i>	Fallow, tarped formerly veg.	140 sl, PCN 948; Oct; King, WA; w/ <i>P. pen</i> , <i>M. hapla</i> ;
<i>Subanguina</i>	<i>radicicola</i>	Grass (golf green)	14 rt; PCN 1153; Nov; King, WA; w/ <i>M. naasi</i>
<i>Subanguina</i>	<i>radicicola</i>	Grass (golf green)	5 sl, 10 rt; PCN 1195-1196; Dec; King, WA; w/ <i>M. naasi</i> .
<i>Tylenchorhynchus</i>	sp.	Onions	0-15 sl; PCN 795-802; Sept; Yuma, CO; w/ <i>P. scrib?/neg</i> ; <i>H. pseudorobustus</i> .
<i>Tylenchorhynchus</i>	sp.	Vegetables	1-147 sl; PCN 803-812; Sept; Yuma, CO; w/ <i>P. scrib?/neg</i> ; <i>H. pseudorobustus</i> .
<i>Xiphinema</i>	sp.	Blueberry	0-32 sl; PCN 304-343; Apr; Island, WA.
<i>Xiphinema</i>	sp.	Grapes	3-33 sl; PCN 999-1000; Oct; Yamhill, OR; w/ low pin, <i>Prat</i> .