

2003 ANNUAL REPORT
 NEMATODE TESTING SERVICE
 DEPARTMENT OF BOTANY AND PLANT PATHOLOGY
 OREGON STATE UNIVERSITY

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 Short Version

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		

This table begins with 1993 because that's the first year for which I have this information. I assumed the position of Extension Nematologist in September 1993.

1999 was the first year in which a major out-of-state client submitted samples. This client submitted 377 samples in 1999, 383 in 2000, 482 in 2002, and 451 in 2003. An OSU researcher's two-year wheat study contributed 411 samples in 2001, 442 in 2002, and a 17-sample denouement in 2003.

Beginning in 2002, other OSU nematology lab staff members did most or all of the extractions. Nadine Wade did virtually all of them in 2002. In 2003, Nadine was assisted to a limited extent by the work-study students she supervised, but she still did most of the work. .

TABLE 2. 2003 SAMPLES RECEIVED BY MONTH

<u>Month</u>	<u>Samples</u>	<u>Month</u>	<u>Samples</u>
Jan	6	Jul	75
Feb	22	Aug	175
Mar	82	Sep	213
Apr	49	Oct	146
May	76	Nov	47
Jun	29	Dec	24

Peppermint sample numbers have decreased each year since their peak in 1995 of 350 soil-plus-root samples, which would be counted as up to 700, because soil and root sample components were not numbered separately until 2004. Peppermint was sampled mostly in February through April and some in May for spring treatment and in August and September for post-harvest treatment, rendering these the busiest months when peppermint provided the majority of samples. Over the years, peppermint has given way to field crops, especially potato rotations, as the

provider of more samples. A low spring preplant peak in May and a higher fall postplant peak in September now define the major busy .

	506
Extension and research	133
Growers	105
Government agencies	4
<u>Other labs</u>	<u>13</u>
TOTAL	944

TABLE 5. SAMPLES BY LOCATION

OREGON		WASHINGTON	
Benton	49	Benton	6
Clackamas	30	Douglas	6
Crook	3	Franklin	2
Jefferson	55	Grant	21
Klamath	3	Kitsap	8
Lane	43	Kittitas	6
Linn	20	Klikitat	6
Marion	58	Okanagan	7
Morrow	8	Pierce	1
Multnomah	6	Spokane	2
Polk	11	Walla Walla	2
Umatilla	22	Washougal	6
Union	17	<u>Yakima</u>	<u>6</u>
Wasco	3	TOTAL	79
Washington	28		
<u>Yamhill</u>	<u>5</u>	ALASKA	3
TOTAL	361	ARIZONA	2
		COLORADO	40
	/	FLORIDA	4
		IDAHO	32
	OTHER	TEXAS	7
	STATES		
		CLIENT REQUESTING COMPLETE CONFIDENTIALITY	<u>416</u>
	\	TOTAL	504

TABLE 6: MATERIALS SUBMITTED

Some submissions contained two numbers worth of samples, such as soil and roots, but they were given only one number.

<u>Material</u>	<u>Samples</u>
Soil for standard soil extraction	777
Soil for cyst extraction	7
Roots	141
Tops	8
Tubers	20
Wood chips or increment cores	3
Bulbs (garlic cloves)	28
<u>Algae</u>	<u>1</u>
TOTAL	985

TABLE 7: SPECIES IDENTIFICATIONS

<i>Pratylenchus</i>	
Oregon	52
Washington	38
<i>Meloidogyne</i>	
From J2	
Oregon:	7
Washington:	16
Client requesting complete confidentiality	145
From perineal patterns	
Colorado:	<u>4</u>
TOTAL	263

TABLE 8. 2003 NOTEWORTHY GENUS AND SPECIES RECOVERIES

NEMATODE GENUS	NEMATODE SPECIES	HOST	NEM/100G SOIL OR NEM/G FRESH TISSUE; PCN No.; COUNTY; STATE; COMMENTS
<i>Aphelenchoides</i>	<i>fragariae</i>	<i>Disporum, arum.</i>	362, leaves; PCN 40; Kitsap, WA. Heavy mist recovery through 28 days.
<i>Aphelenchoides</i>	sp.	Peppermint	18 rt; PCN 136, Marion, OR
<i>Ditylenchus</i>	sp.	Golf green	15 rtd; PCN 52; Lane, OR.
<i>Gracilacus</i>	sp.	Parsnips	100 sl; PCN 833; Clackamas, OR; 39 <i>Prat</i> sp.
<i>Gracilacus</i>	sp.	Filberts	199 sl; PCN 852; Benton, OR; 45 <i>Prat</i> sp.
<i>Hemicycliophora</i>	sp.	Peppermint	33, sl; PCN 556; Morrow, OR; + pin, <i>Prat</i>
<i>Hemicycliophora</i>	sp.	Apples	50 sl; PCN 889; Yakima, OR; + others
<i>Helicotylenchus</i>	sp.	Cherries	1 sl; PCN 218; Kittitas, WA
<i>Helicotylenchus</i>	sp.	Apples	1-15 sl; PCN 889, 890; Yakima, WA; + others
<i>Helicotylenchus</i>	sp.	Golf green	28 sl; PCN 112; Washington, OR, with <i>M. naasi</i>
<i>Helicotylenchus</i>	sp.	Golf green	50-137 sl; PCN 332, 333; Washougal, WA; + <i>Cric</i>
<i>Heterodera</i>	sp.	Wheat	182, soil; PCN 203; Umatilla, OR; with <i>Pratylenchus</i> sp. and <i>M naasi</i>
<i>Heterodera</i>	sp.	Wheat	1-30, sl; PCN 849, 851; Clackamas & Marion, OR
<i>Longidorus</i>	sp.	Peppermint	5 sl, PCN 115, Lane, OR
<i>Longidorus</i>	sp.	Peppermint	4 sl, PCN 208, Linn, OR
<i>Meloidogyne</i>	sp.	Hemlock trees	35 sl; PCN 740; Clackamas, OR; + <i>Prat, Xiph, Trik</i>
<i>Meloidogyne</i>	<i>hapla</i>	Pears	1-15 sl; PCN 189, 190; Okanagan, WA
<i>Meloidogyne</i>	<i>hapla</i>	Wine grapes	2-538 sl; 14-531 rts; PCN 420-425; Marion, OR
<i>Meloidogyne</i>	<i>hapla</i>	Wine grapes (Merlot)	140-239 sl; PCN 521, 522; Benton, WA; with <i>Xiph.</i>
<i>Meloidogyne</i>	<i>hapla</i>	Wine grapes	3-405 sl; PCN 887, 888; Yakima, WA
<i>Meloidogyne</i>	<i>hapla</i>	Peppermint	1140 rts; PCN 438; Morrow, OR
<i>Meloidogyne</i>	<i>hapla</i>	Potatoes	209-933, sl; PCN 861-869; Grant, WA
<i>Meloidogyne</i>	<i>naasi</i>	Onion after <i>Dactylis</i>	11 sl; PCN 336; Marion, OR; with 144 <i>P. cren</i>
<i>Meloidogyne</i>	<i>naasi</i>	Wheat	21 sl; PCN 203; Umatilla, OR; with <i>Pratylenchus</i> sp. and <i>Heterodera</i> sp.
<i>Meloidogyne</i>	<i>naasi</i>	Golf green	204: 1031 sl; 4-8 rt; up to 960 bacteriovores. PCN 51-54; Lane, OR.
<i>Meloidogyne</i>	<i>naasi</i>	Golf green	59 sl, 107 rt; PCN 112, Washington, OR
<i>Meloidogyne</i>	<i>naasi</i>	Golf green	97-159 sl; PCN 156-157; Lane, OR.
<i>Meloidogyne</i>	<i>naasi</i>	Golf green	22-253 sl; few in rts; PCN 342-351; Lane, OR
<i>Meloidogyne</i>	<i>naasi</i>	Golf green	49-305 sl; 0-131 rts; PCN 757-765; Lane, OR; others
<i>Meloidogyne</i>	<i>naasi</i>	Golf green	132 sl, 0 rts; PCN 790-791; Washougal, WA; others
<i>Meloidogyne</i>	<i>naasi</i>	Perennial ryegrass	281 sl; PCN 185; Yamhill, OR
<i>Mesocriconema*</i>	sp.	Golf green	58-137 sl; PCN 757, 759; Lane, OR; + <i>Mel, Stunt</i>
<i>Mesocriconema*</i>	sp.	Golf green	729 sl; PCN 790; Washougal, WA; + <i>Mel</i>
<i>Paratrichodorus</i>	sp.	Peppermint	4 sl; PCN 221, 222; Umatilla, OR
<i>Paratrichodorus</i>	sp.	Peppermint	4 sl; PCN 855; Morrow, OR; + pin, <i>Prat</i>

<i>Paratylenchus</i>	sp.	Peppermint	475-2120 sl; PCN 7-10; Union, OR
<i>Paratylenchus</i>	sp.	Peppermint	361-900 sl; PCN 60-62, Benton, OR
<i>Paratylenchus</i>	sp.	Peppermint	23-420 sl; PCN 117-120; Marion, OR; + <i>Prat</i> sp.
<i>Paratylenchus</i>	sp.	Peppermint	170-1660 sl; 0-9 rts; PCN 135-139; Marion, OR
<i>Paratylenchus</i>	sp.	Peppermint	6486 sl, PCN 153; Benton, OR
<i>Paratylenchus</i>	sp.	Peppermint	38-1200 sl; PCN 170-173; Jefferson, OR
<i>Paratylenchus</i>	sp.	Peppermint	116-629 sl; PCN 179, 180; Lane, OR
<i>Paratylenchus</i>	sp.	Peppermint	395-589 sl; PCN 193-194; Jefferson, OR
<i>Paratylenchus</i>	sp.	Peppermint	28-7058 sl, 0-19 rts; PCN 207-214; Linn, OR
<i>Paratylenchus</i>	sp.	Peppermint	1243-2166 sl; 0-9 rts; PCN 611-616; Marion, OR; with <i>Prat</i> (<i>pen?</i>)
<i>Paratylenchus</i>	sp.	Peppermint	1263 sl; PCN 226; Jefferson?, OR
<i>Paratylenchus</i>	sp.	Peppermint for tea	165-943 sl, PCN 338, 339; Jeff., OR; + <i>P. thornei</i>
<i>Paratylenchus</i>	sp.	Peppermint	1101-17,263 (most high) sl; 0-263 (most high) rts; PCN 361-396; Benton, OR
<i>Paratylenchus</i>	sp.	Peppermint	2882 sl; PCN 624; Marion, OR; + 440 <i>Prat</i> sp.
<i>Paratylenchus</i>	sp.	Peppermint	178 sl; PCN 747; Crook, OR
<i>Paratylenchus</i>	sp.	Peppermint	605-2987 sl ; PCN 855, 856; Morrow, OR
<i>Paratylenchus</i>	sp.	Potatoes	5-78 sl; PCN 862-869; Grant, WA; + <i>M. hapla</i>
<i>Pratylenchus</i>	<i>crenatus</i>	Strawberries	78-341 sl; PCN 359-360; Yamhill, OR
<i>Pratylenchus</i>	<i>crenatus</i>	Rhubarb	39-115 sl; PCN 267, 268; Wash., OR; with 13 <i>Xiph.</i>
<i>Pratylenchus</i>	<i>crenatus</i>	Rhubarb	8 sl; PCN 328; Washington, OR
<i>Pratylenchus</i>	<i>crenatus</i>	Onion after <i>Dactylis</i>	144 sl; PCN 336; Marion, OR; with 11 <i>M. naasi</i>
<i>Pratylenchus</i>	<i>crenatus</i>	Hemlock: 3 tree spp.	<1-109 sl; PCN 873-879; Clackamas, OR
<i>Pratylenchus</i>	<i>crenatus</i>	Unspecified nursery	18-74 sl; PCN 2; Clackamas, OR.
<i>Pratylenchus</i>	<i>crenatus/neglectus</i>	Apples (Pacific Rose)	33 sl; PCN 895; Yakima, WA
<i>Pratylenchus</i>	<i>crenatus/neglectus</i>	<i>Dactylis</i> after clover	44 sl; PCN 256; Yamhill, OR
<i>Pratylenchus</i>	<i>crenatus/thornei</i>	Apples	32 sl; PCN 234; Douglas, WA
<i>Pratylenchus</i>	<i>neglectus</i>	Apples	16-32 sl; PCN 889, 890; Yakima, WA.
<i>Pratylenchus</i>	<i>neglectus</i>	Cherries (Ranier)	70 sl; PCN 621; Yakima, WA; + <i>Xiph</i>
<i>Pratylenchus</i>	<i>neglectus</i>	Wine grapes	95-96 sl; PCN257, 258; Klikitat, WA; with 74 <i>Xiph</i>
<i>Pratylenchus</i>	<i>neglectus</i>	Wine grapes	29-254 sl; PCN 617-620; Klikitat, WA; with <i>Xiph.</i>
<i>Pratylenchus</i>	<i>neglectus</i>	Peppermint	777 sl; PCN 7; Union, OR.
<i>Pratylenchus</i>	<i>neglectus</i>	Peppermint	54 (w/ <i>cren</i>) - 122, soil; PCN 310-313; Union, OR
<i>Pratylenchus</i>	<i>neglectus</i>	Wheat	46-74, soil; PCN 243-244; Douglas, WA
<i>Pratylenchus</i>	<i>neglectus</i>	Alfalfa	38-95, soil; PCN 330-331; Grant, WA
<i>Pratylenchus</i>	<i>neglectus/penetrans</i>	Apples	14 sl; PCN 886; Walla Walla, WA; +5 <i>Trik</i>
<i>Pratylenchus</i>	<i>neglectus/thornei</i>	Peppermint	38-154 sl, with 0-13 <i>pen/neg</i> rts; PCN 303-308; Union, OR
<i>Pratylenchus</i>	<i>penetrans</i>	Pears	72 sl; PCN 189; Okanogan, WA
<i>Pratylenchus</i>	<i>penetrans</i>	Apples, pears	59 sl; PCN 235; Douglas, WA
<i>Pratylenchus</i>	<i>penetrans</i>	Apples	46-10, sl; PCN 432, 433; Okanogan, WA
<i>Pratylenchus</i>	<i>penetrans</i>	Peppermint	50-179 sl; 1140-2275 rts; PCN 426-429; Morrow, OR
<i>Pratylenchus</i>	<i>penetrans/neglectus</i>	Pears	96 sl; PCN 191; Okanogan, WA
<i>Pratylenchus</i>	<i>penetrans/neglectus</i>	Apples	12-67 sl; PCN 459-461; Grant, WA
<i>Pratylenchus</i>	<i>penetrans/neglectus</i>	Apples	15-57 sl; PCN 515-518; Benton, WA
<i>Pratylenchus</i>	<i>penetrans/neglectus</i>	Apples	60 sl; PCN 520; Benton, WA, + <i>Trichodorus</i>
<i>Pratylenchus</i>	<i>penetrans/neglectus</i>	Apples	125 sl; PCN 242; Douglas, WA
<i>Pratylenchus</i>	<i>penetrans/neg.</i>	Raspberries	46 sl; PCN 430 Marion, OR; + pin & <i>Xiphinema</i>

<i>Pratylenchus</i>	<i>penetrans/neglectus/crenatus?</i>	Pears	60, soil; PCN 191; Okanagan, WA
<i>Pratylenchus</i>	<i>penetrans/thornei</i>	Apples	35, soil; PCN 233, Douglas, WA
<i>Pratylenchus</i>	<i>thornei</i>	Carrot seed	15, soil; PCN 155; Marion, OR; with <i>neglectus</i>
<i>Pratylenchus</i>	<i>thornei</i>	unspecified	3306, soil; PCN 227; Jefferson, OR; a few of other <i>Prat</i> spp.
<i>Pratylenchus</i>	<i>thornei</i>	Mustard/carrot	353-1688; PCN 228-229; Jefferson, OR; some other <i>Prat</i> spp.
<i>Pratylenchus</i>	<i>thornei</i>	Recently mustard	441-1569 (few <i>cren</i>), PCN 323-235; Jefferson, OR
<i>Pratylenchus</i>	<i>thornei</i>	Peppermint	21-423, soil; PCN 7; Union, OR; with <i>P. neglectus</i> .
<i>Pratylenchus</i>	<i>thornei</i>	Peppermint for tea	223-840, soil; PCN 337, 338; Jeff., OR; + pin.
<i>Pratylenchus</i>	<i>thornei</i>	Fallow	424 (all <i>th</i>) - 641 (few <i>neg</i>); PCN 318, 319; Wasco
<i>Trichodorus</i> **	sp.	Apples	14; PCN 520; Benton, WA; + 60 <i>P. pen/neg</i>
<i>Trichodorus</i> **	sp.	Hemlock trees	3, soil; PCN 740; Clackamas, OR; + <i>Prat, Mel, Xiph</i>
<i>Tylenchorhynchus</i>	sp.	Golf green	53-298, soil; PCN 51-54; Lane, OR.
<i>Tylenchorhynchus</i>	sp.	Golf green	2025, sl; PCN 759; Lane, OR; <i>Mel, Cric</i> ; 11,184 NPP
<i>Tylenchorhynchus</i>	sp.	Golf green	25 sl; PCN 891; Linn, OR
<i>Tylenchorhynchus</i>	sp.	Gooseberry	115 sl; PCN 881; Polk, OR; + 115 <i>Prat</i> sp.
<i>Tylenchorhynchus</i>	sp.	Unspecified nursery	32-300 sl; PCN 882-884; Polk, OR; + high <i>Prat</i> sp.
<i>Xiphinema</i>	<i>americanum</i>	Apples	5-18 sl; PCN 515, 516; Benton, WA
<i>Xiphinema</i>	<i>americanum</i>	Apples	4-43 sl; PCN 886-887, 889-890; Yakima, WA; + <i>Prat, Mel</i> , sheath
<i>Xiphinema</i>	<i>americanum</i>	Peaches	34 sl; PCN 261; Spokane, WA
<i>Xiphinema</i>	<i>americanum</i>	Cherries	3-97 sl; PCN 454, 455; Marion, OR
<i>Xiphinema</i>	<i>americanum</i>	Cherries (Ranier)	75 sl; PCN 621; Yakima, WA; + <i>P. neg</i>
<i>Xiphinema</i>	<i>americanum</i>	Wine grapes	74 sl; PCN 257, 258; Klikitat, WA; with 95 <i>P. neg</i>
<i>Xiphinema</i>	<i>americanum</i>	Wine grapes	3 sl; PCN 339, Marion, OR
<i>Xiphinema</i>	<i>americanum</i>	Wine grapes	66 sl; PCN 411; Lane, OR; with 74 <i>Cric</i> .
<i>Xiphinema</i>	<i>americanum</i>	Wine grapes	44-261 sl; PCN 617-620; Benton, WA; + <i>P. neg</i> .
<i>Xiphinema</i>	<i>americanum</i>	Wine grapes (Merlot)	133-159 sl; PCN 521, 522; Benton, WA; + <i>M. hapla</i>
<i>Xiphinema</i>	<i>americanum</i>	Unspecified nursery	4-5 sl; PCN 417-419; Marion, OR
<i>Xiphinema</i>	<i>americanum</i>	Hemlock trees	43 sl; PCN 740; Clackamas, OR; + <i>Prat, Mel, Trik</i>
<i>Xiphinema</i>	<i>americanum</i>	Rhubarb	13 sl; PCN 267; Wash., OR; with 39-115 <i>P. cren</i> .
<i>Xiphinema</i>	<i>americanum</i>	Alfalfa	3 sl; PCN 247; Washington, OR

* All *Mesocriconema* species in this report have been keyed to *M. xenoplax* or strongly resemble this species under the dissecting scope. Other *Mesocriconema* species as well as other genera in the ring nematode complex are recognizable under the dissecting scope as different taxa. Thus, all *Mesocriconema* species in this report are considered to be *Mesocriconema xenoplax*.

**All of the many *Trichodorus/Paratrachodorus* species from throughout western North America keyed in the NTS have been *P. allius*.