

Table 1. Nematode counts in samples collected from treatments applied during the fall of 2010. Samples for nematode counts collected from infested trees during the spring of 2011. Experiment 3 (2010).

Orchard	Treatment	Samples n	Average # of nemat.	Range per treat.	Borer species
FRGRA*	Pesticide	18	98	4-822	DWB
FRGRA	Nem + H2O	26	95	4-608	DWB
FRGRA	Mulch only	18	73	2-462	DWB
FRGRA	Mulch + Nem	14	389	7-1686	DWB
FRGRA	Mulch + Nem + H2O	11	289	3-1055	DWB
FRPLA	Pesticide	19	118	4-805	DWB
FRPLA	Nem + H2O	9	71	9-153	DWB
FRPLA	Mulch only	11	92	1-636	DWB
FRPLA	Mulch + Nem	14	263	5-685	DWB
FRPLA	Mulch + Nem + H2O	13	134	6-471	DWB
CMLP	Untreated	1	97	97	PTB
CMLP	Pesticide	3	638	312-1242	PTB
CMLP	Nem + H2O	5	289	79-618	PTB
CMLP	Mulch only	16	170	7-1040	PTB
CMLP	Mulch + Nem	29	139	2-427	PTB
CMLP	Mulch + Nem + H2O	14	92	3-242	PTB

* - the last later in the orchard name describes crop : A - apple, P - peach

Table 2. Nematode counts in bark, mulch and soil samples collected from various treatments applied during the spring of 2011 and summer 2011. Samples for nematode evaluations collected during the fall of 2011.

Orchard	Treatment	Samples n	Average # of nem.	Range min-max	Sample type	
FRGRA	Pesticide	10	10.2	0-52	Bark	DWB
FRGRA	Nem + H2O	10	88	0-796	Bark	DWB
FRGRA	Mulch only	10	16.6	0-118	Mulch	DWB
FRGRA	Mulch + Nem	10	32.6	0-161	Mulch	DWB
FRGRA	Mulch + Nem + H2O	10	112.4	0-390	Mulch	DWB
FRPLA	Pesticide	10	42.3	2-213	Bark	DWB
FRPLA	Nem + H2O	10	15.3	1-42	Bark	DWB
FRPLA	Mulch only	10	27.9	1-171	Mulch	DWB
FRPLA	Mulch + Nem	10	21.9	2-83	Mulch	DWB
FRPLA	Mulch + Nem + H2O	10	46.3	0-241	Mulch	DWB
CMLP	Untreated	10	69.7	31-215	Soil	PTB
CMLP	Pesticide	10	444	7-1607	Soil	PTB
CMLP	Nem + H2O	10	49.4	12-128	Soil	PTB
CMLP	Mulch only	10	524.2	107-1608	Mulch	PTB
CMLP	Mulch + Nem	10	27.9	1-81	Mulch	PTB
CMLP	Mulch + Nem + H2O	10	49.9	8-144	Mulch	PTB
PDA	Mulch + Nem	10	30.5	1-251	Mulch	DWB
PDA	Mulch + Nem + H2O	10	13.8	0-66	Mulch	DWB
PDP	Mulch + Nem	10	159.8	22-361	Mulch	PTB
PDP	Mulch + Nem + H2O	10	292.1	7-1543	Mulch	PTB

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Table 3. The results of nematode counts in frass samples only collected from various treatments applied during the fall of 2010 and summer 2011. Samples for nematode evaluations collected during the fall of 2011.

Orchard Range	Treatment Species	Samples		Average	
		N	# of nem.	min-max	
FRGRA*	Nem + H2O	21	107	10-465	DWB
FRGRA	Pesticide	7	74	8-210	DWB
FRGRA	Mulch only	4	263	101-482	DWB
FRGRA	Mulch + Nem	7	135	31-340	DWB
FRGRA	Mulch + Nem + H2O	8	237	32-912	DWB
FRPLA	Pesticide	7	84	1-265	DWB
FRPLA	Nem + H2O	6	32	7-120	DWB
FRPLA	Mulch only	6	75	5-155	DWB
FRPLA	mulch + Nem	12	231	51-478	DWB
FRPLA	Mulch + Nem + H2O	13	145	19-416	DWB
CMLP	Untreated	5	525	98-971	PTB
CMLP	Nem + H2O	13	367	71-905	PTB
CMLP	Pesticide	14	378	95-2021	PTB
CMLP	Mulch only	19	376	2-807	PTB
CMLP	Mulch + Nem	19	181	9-961	PTB
CMLP	Mulch + Nem + H2O	12	175	2-552	PTB
PDA	Mulch + Nem	13	100	1-1093	DWB
PDA	Mulch + Nem + H2O	12	52	2-441	DWB
PDP	Mulch + Nem	8	172	20-818	PTB
PDP	Mulch + Nem + H2O	4	308	19-1127	PTB

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Table 4. Percentage of trees with fresh trunk injuries caused by wood boring insects on trees in treatments applied during the spring of 2012. Summer evaluations, July 2012.

Orchard	Treatment	No. of trees sampled n	Percentage of trees with fresh injuries	Species
FRGRA*	Mulch + nem.	90	9.3	DWB
FRGRA	Control	90	7.7	DWB
FRPLA	Mulch + nem.	130	4.8	DWB
FRPLA	Control	104	6.8	DWB
THA	Mulch + nem.	360	11.1	DWB
THA	Control	180	21.7	DWB
ERA	Mulch + nem.	660	6.0	DWB
ERA	Control	400	3.0	DWB
ERP	Mulch + nem.	320	8.0	PTB
ERP	Control	260	10.0	PTB
CMLP	Mulch + nem.	150	14.0	PTB
CMLP	Control	150	10.0	PTB
PDP	Mulch + nem.	220	5.0	PTB
PDP	Control	160	7.0	PTB
PDA	Mulch + nem.	120	4.0	DWB
PDA	Control	80	5.0	DWB

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Table 5. The results of nematode counts in frass samples collected from treatments applied during the spring of 2012. Samples for nematode evaluations collected during fall 2012.

Orchard	Treatment	Samples n	Average # of nem.	Range per treat.	Species
FRGRA	Mulch + nem.	13	101.8	7 - 685	DWB
FRGRA	Control	9	62.8	2 - 233	DWB
FRPLA	Mulch + nem.	8	173.6	5 - 924	DWB
FRPLA	Control	12	118.8	29 - 317	DWB
THA	Mulch + nem.	15	110.0	12 - 315	DWB
THA	Control	14	56.7	0 - 277	DWB
ERA	Mulch + nem.	13	70.3	3 - 308	DWB
ERA	Control	14	25.1	2 - 100	DWB
ERP	Mulch + nem.	21	453.7	4 - 1184	PTB
ERP	Control	11	90.5	7 - 486	PTB
CMLP	Mulch + nem.	14	294.5	36 - 901	PTB
CMLP	Control	13	278.3	19 - 1016	PTB
PDP	Mulch + nem.	15	590.1	8 - 2518	PTB
PDP	Control	5	958.8	41 - 3132	PTB

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Table 6. The results of nematode counts in frass samples collected from treatments applied during the spring of 2013. Samples for nematode evaluations collected during the fall 2013.

Orchard	Treatment	Samples n	Average # of nem.	Range per treat.	Species
FRA**	Mulch + nem.	85	149.7	0-297	DWB
FRA	Control	33	32.8	0 - 2608	DWB
DBA	Mulch + nem.	48	252.6	19 - 1327	DWB
DBA	Control	22	172.6	22-463	DWB
THA	Mulch + nem.	13	263.9	0-1144	DWB
THA	Control	19	245.7	7-861	DWB
ERA	Mulch + nem.	21	348.1	8-3000*	DWB
ERA	Control	14	38.3	2-192	DWB
BPA	Mulch + nem.	141	222.4	0-3000*	DWB
BPA	Control	72	540.9	21-3000*	DWB
ERP	Mulch + nem.	49	418.6	17-3000*	PTB
ERP	Control	22	97.1	2-723	PTB
CMLP	Mulch + nem.	100	260.7	3 - 1908	PTB
CMLP	Control	72	308.7	8-2396	PTB
PDP	Mulch + nem.	14	927.0	17-3000*	PTB
PDP	Control	2	431.5	95-768	PTB
Apple comb.	Mulch + nem.	304	217.4	0-3000*	PTB
Apple comb.	Control	217	304.7	0-2608	PTB
Peach comb.	Mulch + nem.	163	365.4	3-3000*	DWB
Peach Comb.	Control	96	262.7	2-2396	DWB

* - the nematode count was stopped after counting over 3,000 per sample.

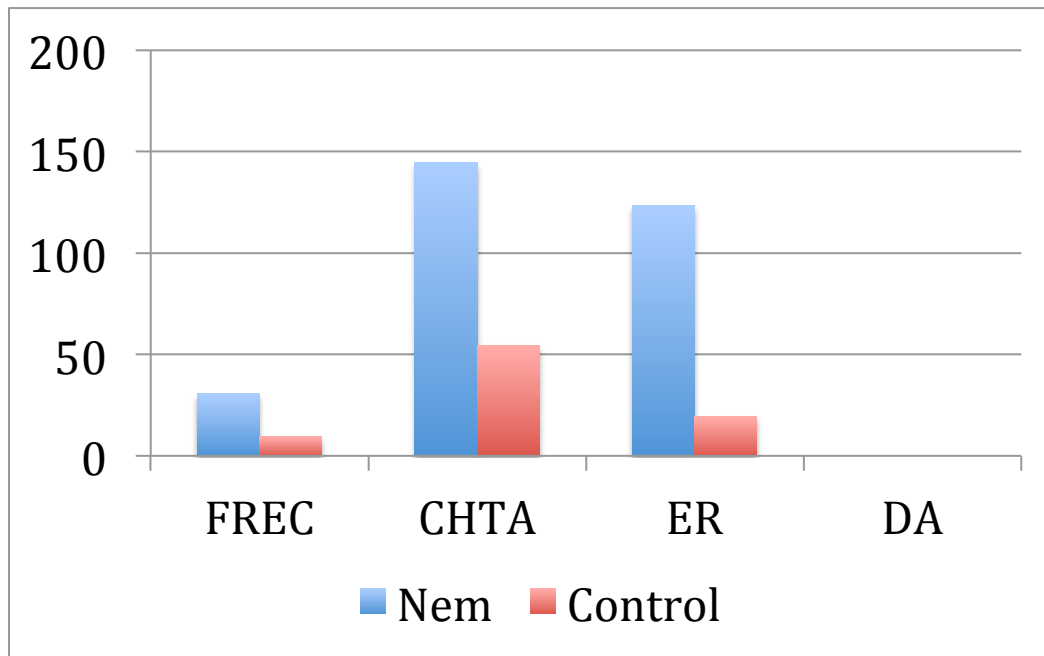
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Table 7. Cumulative moth capture in pheromone traps baited with DWB or PTB sex pheromone lures. Data from various locations participating in the project, 2013.

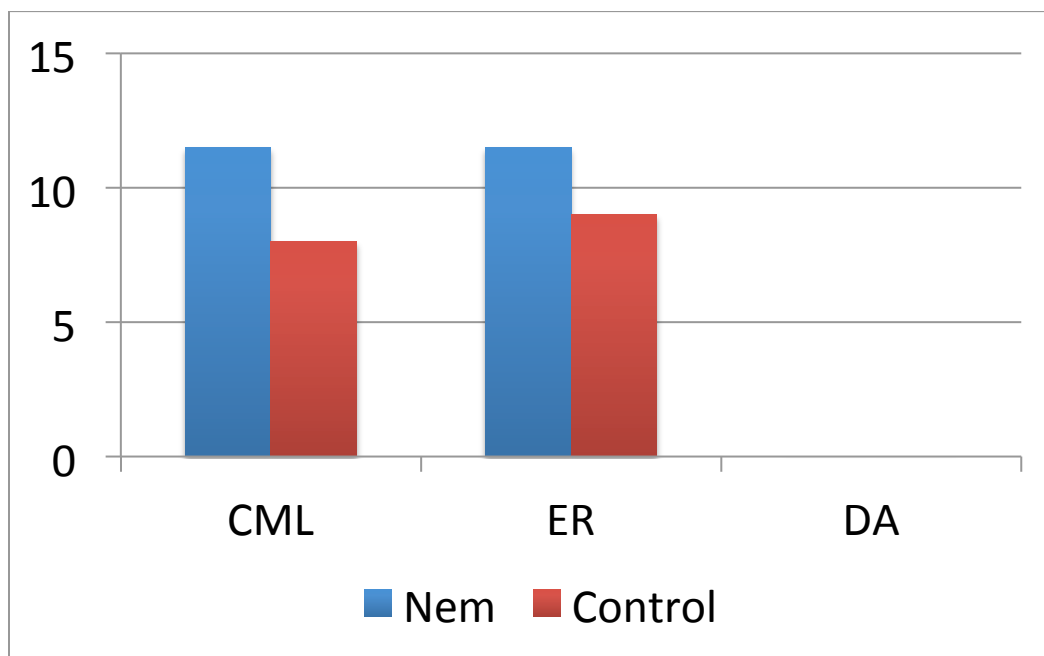
Orchard	Treatment	n	Cumulative moth capture average/per trap/season	
FRA**	Mulch + nem.	2	86.5	DWB
FRA	Control	2	84.0	DWB
DBA	Mulch + nem.	2	58.5	DWB
DBA	Control	2	69.5	DWB
THA	Mulch + nem.	2	38.0	DWB
THA	Control	2	26.5	DWB
ERA	Mulch + nem.	2	98.0	DWB
ERA	Control	2	35.0	DWB
PDA*	Mulch + nem.	2	0	DWB
PDA*	Control	2	0	DWB
BPA	Mulch + nem.	2	67.5	DWB
BPA*	Control	2	0	DWB
ERP	Mulch + nem.	2	23.5	PTB
ERP	Control	2	34.5	PTB
CMLP	Mulch + nem.	2	9.5	PTB
CMLP	Control	2	16.0	PTB
PDP*	Mulch + nem.	2	0	PTB
PDP*	Control	2	0	PTB
DBP	Mulch + nem.	2	2.5	PTB
DBP	Control	2	6.0	PTB

* - orchards with DWB or PTB mating disruption programs

Figure 1. Seasonal average cumulative capture of dogwood borer (apple orchards) and peach tree borer (stone fruit orchards) moths in pheromone traps located within evaluated blocks during 2012 season.



a) cumulative average number of dogwood borer moths per trap (n=2) per season. DA orchard was treated with DWB mating disruption (Isomate DWB, CBC America).



b) cumulative average number of peach tree borer moths per trap (n=2) per season. DA orchard was treated with PTB mating disruption (Isomate PTB, CBC America).