

Pome Fruits—Chemical Control

Prebloom Control of Pear Psylla with Fenoxycarb and Pyrethroids

Peter H. Westigard and Richard J. Hilton  
Southern Oregon Experiment Station, Medford, OR

*Keywords:* pear psylla, fenoxycarb, Asana, Danitol, pear

In this test we compared two pyrethroids, Asana and Danitol, in the standard timings to a program using the IGR fenoxycarb applied at the delayed dormant and the pink bud periods. The dormant timing of spray oil was deleted from the fenoxycarb program.

Materials were applied by airblast sprayer set to deliver 250 gpa to a 5.5 acre block of mature pear trees, cv. Bosc and Bartlett. Each material was applied to 3 replicates each approximately 1/3 acre in size arranged in a randomized block design. In the conventional program, horticultural spray oil was applied at the rate of 4 gal/acre on Feb 12 (dormant timing) and followed on Feb 26 (delayed dormant) with pyrethroids, either Asana at 0.1 lb AI/acre or Danitol at 0.4 lb/acre both in combination with 4 gal of oil/acre. The modified timing program used fenoxycarb at 30 or 60 g AI/acre applied in combination with oil (4 gal/acre) on Feb 26 (delayed dormant) and again without oil at the pink bud stage on Mar 25. The control plot was left untreated during the course of this trial.

Pear psylla adult densities were measured by recording the number taken on 6 trays/replicate/date/treatment from Feb 3 through May 18. Pear psylla egg and nymph densities were measured by counting these stages on 10 fruit spurs/rep through Mar 20 or on 20 leaves/rep (May 1).

### Results

**The conventional pyrethroid programs.** The pre-oil dormant PP adult densities were somewhat higher than normal ranging from about 6-7/tray. While no substantial reduction in adult densities was attributed to this oil treatment, it provided excellent inhibition of egg laying. On Feb 25, prior to application of the delayed dormant spray, the number of eggs/spur averaged 0.15 in the 2 plots receiving the dormant oil and 2.7 in the untreated check or about a 95% reduction. Following the delayed dormant treatment (Feb 27) both pyrethroids reduced PP adult densities to near zero. Both the Danitol and Asana plots remained relatively free of PP through the final count taken on May 18. These results along with laboratory bioassays (data not presented) indicate that PP adults have not as yet developed resistance to the pyrethroid chemicals in southern Oregon as has been the case in Washington State and in northern Oregon.

**The fenoxycarb program.** In the absence of the dormant oil treatment, PP egg deposition in the fenoxycarb plots was relatively high prior to the delayed dormant application on Feb 27. At this time the number of eggs/spur averaged 3.6 and 5.6 in the 30 and 60 g plots, respectively. There was no substantial reduction in PP adult levels following the delayed dormant fenoxycarb treatments and egg deposition continued, reaching a peak just prior to the pink bud application (Mar 20) of about 15/spur. Despite the large number of eggs present in the

fenoxycarb plots, there was very little subsequent development of PP nymphal populations. On May 1 no PP nymphs were recorded in the fenoxycarb treatments compared to 2.3/leaf in the check plot. There was no difference in overall PP suppression between the two rates of fenoxycarb tested.

**Table 1.** Prebloom control of pear psylla with pyrethroids and fenoxycarb; Dormant treatment Feb 12, Delayed Dormant Feb 27, Pink Mar 25; Medford, OR, 1992.

Program no., materials and rate AI/acre	Treatment timings			PP Stage	No. pear psylla adults per tray, eggs per spur (Feb 20-Mar 20) or leaf (Apr 13-May 18) and nymphs per spur (Mar 21) or leaf (May 1)							
	D	DD	P		Feb 3 <sup>1</sup>	Feb 13	Feb 19	Feb 25 <sup>2</sup>	Mar 11	Mar 20 <sup>3</sup>	May 1	May 18
1 (a) oil 4 gal	X			A	5.8	5.6	2.3	3.5	0.0	0.0	0.1	0.1
(b) oil 4 gal + Danitol .4 lb		X		E N	-- --	-- --	-- --	0.0 --	-- --	0.4 0.0	0.0 0.0	-- --
2 (a) oil 4 gal	X			A	7.4	2.3	2.6	3.4	0.0	0.0	0.0	0.0
(b) oil 4 gal + Asana 0.1 lb		X		E N	-- --	-- --	-- --	0.3 --	-- --	0.0 0.0	0.0 0.0	-- --
3 (a) oil 4 gal		X		A	5.9	6.3	4.2	3.6	1.1	0.7	0.0	0.1
+Fenoxycarb 30 g				E	--	--	--	3.6	--	13.3	0.8	--
(b) Fenoxycarb 30 g			X	N	--	--	--	--	--	0.1	0.0	--
4 (a) oil 4 gal		X		A	4.8	8.8	6.2	8.6	1.0	0.6	0.1	0.1
+Fenoxycarb 60 g				E	--	--	--	5.6	--	18.3	0.5	-
(b) Fenoxycarb 60 g			X	N	--	--	--	--	--	0.2	0.0	--
5 Check				A	4.2	6.4	3.9	5.8	1.8	1.2	2.2	1.8
				E	0.1	0.1	1.2	2.7	--	48.3	0.2	--
				N	--	--	--	--	--	2.8	2.3	--

<sup>1</sup>Pretreatment Dormant.

<sup>2</sup>Pretreatment Delayed Dormant.

<sup>3</sup>Pretreatment Pink.