

II. Pome Fruits

d. Chemical control

Pear psylla (PP); *Psylla pyricola* Foerster
Pear rust mite (PRM); *Epirimerus pyri* (Nalepa)
Twospotted spider mite (TSM); *Tetranychus urticae* Koch
European red mite (ERM); *Panonychus ulmi* (Koch)
Codling moth (CM); *Cydia pomonella* (L.)

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PEAR, PEAR PSYLLA CONTROL, 1988. Twenty-five year-old pear trees were sprayed with an air carrier sprayer applying 400 gallons per acre to evaluate pesticide programs for control of PP and other pest species. Plots consisted of unreplicated blocks of about one half-acre. Experimental programs were based on Agri-Mek, one made up of scheduled applications similar to timings used in standard programs and a second with applications as needed for PP control. These programs were compared to a standard program similar to that used in commercial pear orchards in central Washington. PP egg and nymph and phytophagous mite densities were estimated from three 50-leaf samples per plot at 2-week intervals. Leaf samples during the early post-bloom period were collected from fruiting spurs; later samples consisted of the proximal leaf, the distal leaf and 3 leaves from the middle of 10 growing shoots. Leaf samples were processed by the standard leaf-brushing technique and pests were counted on resulting slides using a dissecting microscope. Adult PP were counted by the limb-tap method. PP, PRM russet and CM damage were rated according to US grade standards for fresh pears on 2 samples of 25 mature fruits/per plot. Factors of fruit quality including firmness, soluble solid content and size were evaluated on 2 10-fruit samples per plot at harvest maturity. Spray programs are detailed in the first table.

Density of overwintered adult PP was high, about 25 per limb-tap. PP in the test orchard were moderately resistant to pyrethroids, thus the dormant application did not reduce their density below retreatment levels. The standard program included a delayed dormant application to further reduce winter form adult density. Populations of other pest species failed to develop sufficiently to produce meaningful comparisons. The three programs provided about equal control of PP except for early post-bloom when the standard program was less effective. There was little difference in PP control between the two Agri-Mek programs, indicating that the 5 Apr and 13 Jun sprays were not needed against this pest. Six percent of fruits in the standard plot were sufficiently russeted by PP honeydew to lower their grade to US fancy. There was no honeydew russeted fruit in either Agri-Mek plot. There were no treatment associated differences in measured factors of fruit quality.

Spray Programs Tested

<u>Dates applied</u>	<u>Program</u>	<u>Insecticide</u>	<u>Amt. /acre</u>
4 Mar (D)	Agri-Mek Scheduled	Pydrin 2.4 EC	1 pt
		Butacide 8 EC	8 oz
		Superior type oil	4 gal
5 Apr (DD), 28 Apr (PF) 13 Jun & 5 Jul (CS)		Agri-Mek .15 EC	20 oz
		Superior type oil	1 gal
4 Mar (D)	Agri-Mek Timed	Pydrin 2.4 EC	1 pt
		Butacide 8 EC	8 oz
		Superior type oil	4 gal
28 Apr (PF) 5 Jul (CS)		Agri-Mek .15 EC	20 oz
		Superior type oil	1 gal
4 Mar (D)	Standard	Pydrin 2.4 EC	1 pt
		Superior type oil	4 gal
24 Mar (DD)		Pydrin 2.4 EC	1 pt
		Parathion 8 EC	1 pt
		Butacide 8 EC	8 oz
28 Apr (PF) & 5 Jul (CS)		Mitac 50% WP	3 lb
		Guthion 50% WP	2 lb
14 Jun (CS)		Mitac 50% WP	3 lb
		Guthion 50% WP	2 lb
		Agri-Mek .15 EC	10 oz

Program	Mean pear psylla nymphs per 100 leaves ¹							
	26 Apr	11 May	26 May	8 Jun	7 Jul	18 Jul	3 Aug	16 Aug
Agri-Mek scheduled	60b	3b	0b	0a	0a	0a	0a	3a
Agri-Mek timed	310a	3b	0b	7a	3a	0a	0a	3a
Standard	140b	77a	13a	10a	0a	0a	3a	3a

¹ Means within columns followed by the same letter are not significantly different (P = 0.05, LSD).

Program	Mean pear psylla adults per 25 limb taps								
	19 Apr	2 May	18 May	1 Jun	30 Jun	12 Jul	27 Jul	11 Aug	24 Aug
Agri-Mek scheduled	37	1	0	0	0	4	1	0	1
Agri-Mek timed	253	2	0	0	8	8	3	4	2
Standard	107	86	58	323	4	39	7	29	28