

II. Pome Fruits

d. Chemical Control

1. Pear psylla (PP): Psylla pyricola Foerster
PEAR: Pyrus communis L. Bartlett

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1989 SAFER INSECTICIDE CONCENTRATE (SIC) TRIALS. The objectives of the project the first year were to: 1) determine the effectiveness of SIC in controlling PP populations when applied at petal fall (April 27, 1989), midsummer (June 16, 1989), and post-harvest (September 15, 1989); and 2) determine if SIC is phytotoxic to pear fruit when applied at different stages of fruit development by itself and in combination with other chemicals.

All applications were made to single Bartlett pear trees replicated three times in a randomized block design using a handgun sprayer, at 250 psi with sprays applied to runoff.

Phytotoxicity was observed following both the petal fall and mid summer application on the fruit and leaves of the pear trees, but only that which occurred at midsummer was significant. Primarily, damage was marginal leaf burn and a solid spray ring found on the calyx end of the fruit where spray droplets collected. This damage occurred wherever SIC or SUFSO was used, with the most significant damage occurring on those trees sprayed with the 2% SIC and 2% SUFSO combination. It should be noted that even though damage was rated at 100%, three packinghouse managers felt the damage was not downgrading in their opinion.

Safer Insecticide Concentrate reduced populations sufficiently enough to virtually eliminate psylla marking with only 2 applications. It appears that Safer Insecticide Concentrate is chiefly effective against early instar psylla nymphs and it would be advisable for growers to use an orchard monitoring program to time their applications for maximum efficacy.

While addition of 2% Sunspray to 2% Safer Insecticide Concentrate significantly enhanced psylla control, it also caused the most severe phytotoxicity to the fruit. The fruit marking that Safer Insecticide Concentrate caused when used alone would not affect fruit going to the cannery, but the potential for impacting fruit going to fresh market exists, particularly if used on more sensitive pear varieties such as Comice and D'Anjou.

Table 1. Seasonal control of pear psylla.
(5/8 - 7/24)

Treatment		Psylla nymphs per leaf	% Down grading due to psylla marking	% Spray Marking Moderate & Heavy
Sunspray Ultra		¹		
Fine Oil	2%	.49 ab	0.0 a	0.0
Safer				
Insecticide	2%	.75 b	1.3 a	1.7
Safer				
Insecticide	1%			
plus		.53 ab	0.0 a	0.0
Sunspray Ultra				
Fine Oil	2%			
Safer				
Insecticide	2%			
plus		.37 a	0.0 a	40.0
Sunspray Ultra				
Fine Oil	2%			
Safer				
Insecticide	1%			
plus				
Agri-mek (10 oz/ac)		.53 ab	0.0 a	1.7
plus				
Sunspray Ultra				
Fine Oil	0.25%			
Agri-mek (20 oz/ac)				
plus		.28 a	0.0 a	0.0
Summer spray oil	0.25%			
Control		1.47 c	6.0 b	0.0

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Means within the same column with same letter are not significantly different based on Fisher's Least Significant Difference Test. $P < 0.05$.