

## II. Pome fruits

### d. Chemical control

Pear psylla, (PP); Psylla pyricola and

Twospotted spider mite, (TSM) Tetranychus urticae: Pear

Philip VanBuskirk, Richard Hilton, Peter Westigard  
OSU Southern Oregon Experiment Station  
Medford, Oregon

1990 SAFER INSECTICIDE CONCENTRATE (SIC) TRIALS. Based on the information collected in 1989, field testing of SIC continued into 1990 with two objectives in mind: 1) to determine the effectiveness of SIC in controlling TSM and PP; and 2) to evaluate 7 pear varieties for phytotoxicity when SIC is applied by air blast sprayer at 1st cover and midsummer.

1st cover (5/14/90) and midsummer (6/18/90) treatments for pest control were applied to 20 year old Bosc trees, replicated two times in a randomized block design. Phytotoxicity treatments were unreplicated and applied to Seckel, Comice, Bosc, Bartlett, Red Comice, Red Bartlett, and Cascade pear ranging in age from 12 to 20 years old. All treatments were applied at the rate of 200 gallons per acre using conventional air-carrier equipment.

Evaluations for TSM control at 1st cover (5/14) show that SIC gives variable results (Table 1). In combination with 1% oil populations were initially controlled but had fully resurged within 14 days. The SIC alone treatment gave initially poor results, but some suppression was evident for up to three weeks. The midsummer application (6/14) had minimal effect on the exploding mite population. While the oil and SIC combination again gave the best initial suppression, economic levels of mite control were not obtained in any of the SIC or oil treatments.

Due to higher than normal temperatures during the 1990 foliar season and materials used during the delayed dormant spray, PP populations failed to develop in the late season test plots. However, data collected following the midsummer application suggest that all treatments suppressed PP populations below the retreatment level of .5 immature PP/leaf for over 14 days (Table 2).

Phytotoxicity on Bartlett pear in the SIC alone treatment increased in 1990 when compared to the handgun trials of 1989. The reduction of oil from 2% to 1%, in the SIC plus oil treatment reduced the amount of phytotoxicity in the moderate to heavy range from 40% in 1989 to only 4% in 1990 (Fig. 1).

### SUMMARY

While SIC shows promise as a control for PP during the foliar season with only two applications timed for early life stages, it is a very weak control for TSSM, possibly requiring treatments every 7 days. Reducing the rate of material applied per acre from 400 gallons in 1989 to 200 gallons in 1990 provided a 70% reduction in the amount of phytotoxicity in the moderate to heavy range seen on the fruit at mid-summer.



Table 1. Control of Twospotted Spider Mite 1st Cover and Midsummer  
(Treated 5/14/90 and 6/18/90).

Treatment	Mites per Leaf (All life stages)						
	Pre-treatment						
	5/10	5/21	5/29	6/4	6/11	6/25	7/2
1% Ultra Fine Spray Oil	6.0	3.6	25.1	21.3	15.3	11.3	12.9
2% Safer Insecticide Concentrate	7.2	4.7	1.1	2.5	19.8	12.4	10.8
2% Safer Insecticide Concentrate + 1% Ultra Fine Spray Oil	4.5	0.2	12.5	16.6	9.4	5.2	10.0
Agrimek (20 oz/ac rate) + .25% Ultra Fine Spray Oil	1.6	0.4	5.3	0.7	0.4	1.0	0.4
Control	6.0	10.2	8.1	26.6	19.2	29.5	20.75

Table 2. Control Of Pear Psylla 1990: On Pear  
(Treated 5/14/90 and 6/18/90).

Treatment	Average Number Pear Psylla Adults/Inp or Immatures/Leaf													
	Pre-treatment													
	5/10		5/21		5/29		6/4		6/11		6/25		7/2	
	(A)	(I)	(A)	(I)	(A)	(I)	(A)	(I)	(A)	(I)	(A)	(I)	(A)	(I)
1% Ultra Fine Spray Oil	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.4	0.0	0.0	0.0	0.1
2% Safer Insecticide Concentrate	0.3	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0
2% Safer Insecticide Concentrate + 1% Ultra Fine Spray Oil	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0
Agrimek (20 oz/ac rate) + .25% Ultra Fine Spray Oil	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.1	0.0	0.2	0.0
Control	0.1	0.0	0.2	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.4	1.0	0.0

## Phytotoxicity on Bartlett Pear 1990 Results

