

Implementation Programs

The Use of Mating Disruption, Horticultural Spray Oil, and Fenoxycarb in a Pear Pest Program

Richard Hilton and Peter Westigard
Oregon State University, Southern Oregon Experiment Station, Medford, OR

Keywords: codling moth, pear psylla, twospotted spider mite, leafroller, mating disruption, horticultural spray oil, Orchex, fenoxycarb, Guthion, Asana, Agrimek, Vendex, Kinetic, Kelthane, Apollo, Mitac, pear

In 1994, a program consisting of mating disruption and three applications of horticultural spray oil (Orchex 796) was implemented on approximately 80 acres of mixed pear cultivars in southern Oregon. Codling moth, pear psylla, and twospotted spider mite were all effectively controlled. In a 1.2 acre plot at the Southern Oregon Experiment Station, under conditions of high codling moth pressure, the addition of one application of fenoxycarb at petal fall to the mating disruption and horticultural oil program was found to significantly increase the control of codling moth.

Table 1 outlines the seasonal pest management programs followed in two adjacent blocks managed by the same company. One block followed the grower's standard program while the other was part of the mating disruption and oil program. Comparative results from these two blocks showed similar amounts of insect damage at harvest (Table 2) and better fruit finish on the Comice cultivar in the mating disruption and oil program (Table 3).

The effect of a petal fall application of fenoxycarb was examined in a small block of Anjou and Bartlett pears where, due to high codling moth pressure, mating disruption and horticultural oil applications are ineffective in controlling codling moth. The fenoxycarb application was applied to three replicated plots within the block using an air-blast sprayer. Fruit was evaluated at the end of the first codling moth generation and again at harvest to determine the level of infestation. Guthion was applied on July 21 for control of the second codling moth generation.

Table 1. Program comparison, insecticide and acaricide applications, 1994.

Application timing	Grower standard	Test plot
Dormant	oil 4 gal/acre	oil 4 gal/acre
Delayed dormant	oil 4 gal/acre lime-sulfur 12 gal/acre	oil 4 gal/acre lime-sulfur 12 gal/acre
Codling moth biofix (4/15)		Isomate C+ 400 dispensers/acre
1 st cover	Guthion 2.5 lb/acre	oil 1%
200 °D post-biofix	or Asana 16 oz/acre	
400 °D post-biofix		oil 1%
2 nd cover	Guthion 2.5 lb/acre	oil 1%
600°D post-biofix	Agrimek 20 oz/acre oil 0.25%	
3 rd cover	Guthion 2.5 lb/acre Vendex 16 oz/acre Kinetic 6 oz/acre	
	(Bartlett Harvest)	
	Kelthane 8 lb/acre Apollo 6 oz/acre	
4 th cover	Guthion 2.5 lb/acre Mitac 3 lb/acre (Winter Pear Harvest)	Guthion 1.25 lb/acre

Table 2. Program comparison, insect damage at harvest, 1994.

	Grower standard	Test plot
Comice	4% psylla honeydew	3.1% bug feeding 0.3% leafroller feeding
Bosc	no damage recorded	0.3% bug feeding 0.3% miscellaneous damage

Table 3. Program comparison, fruit finish on Comice (% in grade), 1994.

	Grower standard	Test plot
Extra	39	57
#1	47	30
#2	13	12
Cull	0	1

Table 4. The effect of a petal fall application of fenoxycarb in controlling insect-related fruit damage in a mating disruption and horticultural spray oil program, Bartlett cultivar.

Treatment	CM entries (%)		Other insect damage (%) at harvest	
	1 st generation	Harvest	Hemiptera	Lepidoptera
	11 July	18 August		
Pheromone horticultural oil	12.0b	10.8b	2.7	1.0
Pheromone horticultural oil fenoxycarb	1.5a	2.3a	2.5	0.5
Check ¹	33.0	66.5	--	--

¹The check treatment was not included in the statistical analysis.