

#### 4. Chemical Control/New Products

### CONFIRM AS A CONTROL FOR APPLE PESTS

J. F. Brunner, M. J. Doerr and L. J. Gut  
 WSU Tree Fruit Research and Extension Center  
 1100 North Western Avenue, Wenatchee, WA 98801

For the second year, Confirm provided suppression of codling moth and leafrollers similar to the conventional insecticide program. Spring applications of Confirm targeted at leafrollers seemed to provide adequate control of this pest when accompanied by summer sprays applied to control codling moth, some of which would also provide suppression of summer generation leafroller larvae. Four sprays of Confirm timed to coincide with conventional control applications allowed for some fruit injury at harvest, but considering the pressure from untreated plots control was very good (Table 1).

Arthropods other than codling moth and leafroller were not very different in abundance between the three treatments. There were no pest species that stood out as being more of a problem in any particular treatment. There was a tendency for the conventional insecticide program to have less biodiversity early in the season as measured by traps or beating tray samples, but this did not translate into a more unstable biological system. Lorsban in the delayed-dormant spray in the conventional program is probably the chemical having the greatest effect on biodiversity. It may be at sites that are more challenged by pests such as aphids that this simplification of the predator complex early in the season could have an effect on the biological control of aphids later in the summer.

The Confirm program seems very compatible with biological control agents for a number of pest species. The abundances and kinds of natural enemies of aphids, mites, leafminer, leafroller and leafhopper were similar in the Confirm and untreated plots throughout the year. Confirm provided control of key pests while allowing the greatest possible expression of natural controls for other pests. Confirm is a "soft" pesticide that fits very well into a pheromone-based pest management system for Washington State. This was demonstrated by the fit Confirm had in the SARE project in 1996. In apple orchards where no neuroactive insecticides could be used and where mating disruption had not provided adequate codling moth control in 1995, Confirm proved to be an excellent "soft" chemical control supplement to pheromones. Confirm also provided control of leafrollers in the SARE sites where in 1995 this pest had been as great if not a greater threat to crop loss than codling moth.

Table 1. Fruit injury following the first codling moth generation and at harvest, 1996.

1st Generation 10-Jul	Avg % injury							
	Codling moth			Leafroller	Thrips	Campy.	Lygus	
Treatment	Entries	Stings	Total CM					
Confirm	0.2a	0.3a	0.4a	0.1a	3.5a	0.2a	0.3a	
Conventional	0.1a	0.1a	0.1a	0.0a	5.2a	0.0a	0.1a	
Untreated	22.8b	0.1a	22.8b	3.3a	3.3a	0.5a	0.5a	
Harvest 18-Sep	Avg % injury							
	Codling moth			Leafroller	Lygus	Aphid stem mold	SJS	Avg % clean
Treatment	Entries	Stings	Total CM					
Confirm	1.1a	0.4a	1.5a	1.0a	0.4a	0.3a	0.0a	96.7b
Conventional	0.1a	0.2a	0.3a	0.1a	0.1a	0.0a	0.0a	99.5b
Untreated	57.4b	1.2b	58.6b	13.2b	0.7a	0.0a	0.4a	33.2a

Means in the same column followed by the same letter not significantly different (p=0.05, Fisher's Protected LSD).