4. Chemical Control/ New Products

EXTENDING THE ORGANOPHOSPHATE PER HARVEST INTERVAL IN PEARS BY LATE SEASON CONFIRM APPLICATIONS

R. A. Van Steenwyk & R. M. Nomoto
Department of Environmental Science,
Policy and Management
University of California, Berkeley, CA 94720

Methods and Materials – A trial was conducted in a commercial 'Bartlett' pear orchard near Sheldon, CA. Three treatments were replicated three times in a randomized complete block design. Each replicate was 1.67 acres. Insecticides were applied using an air-blast speed sprayer operating at 2.0 mph and applying 100 gal. of finished spray per acre. The three treatments were: 1) Guthion 50WP [1.0 lb (AI)/ac] applied about 300 degree-days (DD) from the 1st biofix followed every two weeks by an application of Confirm 2F [0.28 lb (AI)/ac], 2) Guthion applied about 300 DD and 650 DD from the 1st biofix followed every two weeks by an application of Confirm and 3) Guthion applied about 300 DD and 600 DD from the 1st biofix and about 300 DD from the 2nd biofix (grower standard). All Confirm applications contained 0.0625% Latron B-1956 by volume. DD were calculated with a biofix of 14 April using a single sine horizontal cutoff model with a lower threshold of 50° F and an upper threshold of 88° F. Maximum and minimum air temperatures were obtained from the IMPACT weather station at Lodi, CA. Control was evaluated at the end of the first codling moth (CM) generation on 1 July by inspecting 1000 fruit per treatment and at commercial harvest on 5 August by inspecting 1500 fruit per treatment for green fruitworm (GFW), obliquebanded leafroller (OBLR) and CM damage.

Results and Discussion – There was little CM or OBLR fruit damage and moderate GFW fruit damage during the first generation evaluation. Since GFW were present early in the season prior to the first application on 5 May, they were not greatly effected by this application. There were no significant differences in CM, GFW or OBLR among the treatments in the first generation evaluation (Table 1). In the harvest evaluation, the grower standard (three applications of Guthion) had significantly less CM infested fruit than two Guthion applications followed by three Confirm applications or one Guthion application followed by five Confirm applications (Table 2). There was also a rate response where two Guthion applications followed by three Confirm applications had less CM infestation than one Guthion application followed by five Confirm applications. There was no significant difference among the treatments in the amount of OBLR or GFW fruit damage. Since the orchard had a moderate CM population and two Guthion applications followed by three Confirm applications could not prevent unacceptable CM damage, it appears that Confirm will not be a stand-alone substitute for Guthion.

Table 1. Mean Percent Codling Moth, Green Fruitworm, Obliquebanded Leafroller Fruit Damage for First Codling Moth Generation Evaluation at Shelton, CA. - 1999

	Mean Percent Fruit Damage			
Treatment	CM	GFW	OBLR	Total
Guthion 3X	0.1 a	0.1 a	0.2 a	0.4 a
Guthion 2X & Confirm 3X	0.0 a	1.1 a	0.1 a	1.2 a
Guthion 1X & Confirm 5X	0.3 a	0.8 a	0.0 a	1.1 a

Means followed by the same letter within a column are not significantly different (Fisher's LSD, $P < 0.05$). Data analyzed using an arcsin transformation.

Table 2. Mean Percent Codling Moth, Green Fruitworm and Obliquebanded Leafroller Fruit Damage for the Harvest Evaluation at Shelton, CA. - 1999

	Mean Percent Fruit Damage			
Treatment	CM	GFW	OBLR	Total
Guthion 3X	0.1 a	0.0 a	0.1 a	0.2 a
Guthion 2X & Confirm 3X	1.4 b	0.1 a	0.1 a	1.6 b
Guthion 1X & Confirm 5X	2.1 b	0.3 a	0.1 a	2.5 b

Means followed by the same letter within a column are not significantly different (Fisher's LSD, $P < 0.05$). Data analyzed using an arcsin transformation.