

Pome Fruits—Chemical Control

Pear, Evaluation of AC 303,630, 1993

Philip VanBuskirk and Richard Hilton
Oregon State University Southern Oregon Experiment Station, Medford, OR

Keywords: twospotted spider mite, pear psylla, codling moth, AC 303,620, Orhex, pear

The evaluation was conducted in a 1.7 acre pear block consisting of 5 varieties including Bartlett, d'Anjou, and Bosc, planted in a randomized block. The orchard block was divided into 5 treatments, replicated three times in a randomized block design. Applications of AC 303,630 plus .5% Orhex 796 spray oil were made 27 May, 24 June and 28 July using an air-carrier sprayer set to deliver 200 gal/acre. AC 303,630 performance was compared to a standard spray program consisting of: 27 May, Agri-Mek .15 EC (20 oz/acre), .25% Orhex 796 spray oil and Guthion 35WP (3.5 lb/acre); 24 June, Guthion (3.5 lb/acre); and 28 July, Mitac 50W (3 lb/acre) and Guthion (3.5 lb/acre). Densities of PP immature and TSM were estimated bi-weekly by randomly selecting 8 mature and 8 new leaves from each of two varieties (d'Anjou and Bosc) for a total of 16 leaves/replicate/variety. Leaves were brushed and the stages and numbers of each species were determined with the aid of a dissecting microscope. Adult PP and predators were counted from a 4-beating tray sample per replicate. Codling moth damage was evaluated at the end of the first CM generation and at harvest by collecting 50-100 fruit per replicate and determining percent larval entry.

Populations of PP and TSM were generally lower on Bosc than on d'Anjou, but the results were similar. Seasonal control of TSM and PP indicated no differences between the three rates of AC 303,630 tested and the standard spray program. Data indicated an increase in control of PP immatures and adults as the rate of AC 303,630 increased. This rate response was not seen in the TSM data, possibly due to the low initial TSM population. There were also no differences between any of the rates of AC 303,630 tested and the standard treatment with respect to predator populations. The standard Guthion program was more effective in control of CM than AC 303,630 on Bartlett, the most susceptible variety. In summary, a seasonal program of AC 303,630 controlled PP and TSM as well as a standard spray program but did not maintain CM damage below the commercially acceptable level of .5%.

Proceedings of the 68th Annual Western Orchard Pest & Disease Management Conference

Treatment	Form./ acre	Anjou—Mean TSM eggs plus post-embryonics per leaf								
		Pre- treatment	3 Jun	16 Jun	1 Jul	14 Jul	27 Jul	12 Aug	26 Aug	Seasonal mean
AC 303,630 2SC + Orchex 796 spray oil	4.9 oz 47.9 oz	0.0	0.0a	0.0a	0.0a	0.1a	0.2a	0.2a	0.1a	0.1a
AC 303,630 2SC + Orchex 796 spray oil	9.8 oz 47.9 oz	0.0	0.0a	0.0a	0.0a	0.0a	0.0a	0.0a	0.0a	0.0a
AC 303,630 2SC + Orchex 796 spray oil	14.7 oz 47.9 oz	0.0	0.0a	0.0a	0.0a	0.0a	0.2a	0.0a	0.1a	0.0a
Standard program		0.0	0.0a	0.0a	0.0a	0.0a	0.0a	0.3a	0.5ab	0.1a
Control		0.0	0.0a	0.0a	0.5a	1.9a	0.1a	0.5a	0.9b	0.6b

Means within a column followed by the same letter are not significantly different (P=0.05 Fisher's Protected LSD). Data were subjected to $\sqrt{x+0.5}$ transformation for statistical analysis. Nontransformed means are presented for comparison.

Treatment	Form./ acre	Anjou—Mean PP eggs plus nymphs per leaf								
		Pre- treatment	3 Jun	16 Jun	1 Jul	14 Jul	27 Jul	12 Aug	26 Aug	Seasonal mean
AC 303,630 2SC + Orchex 796 spray oil	4.9 oz 47.9 oz	2.3	1.6a	1.5bc	1.3ab	0.2a	1.2ab	0.7a	1.0a	1.1a
AC 303,630 2SC + Orchex 796 spray oil	9.8 oz 47.9 oz	2.9	2.3a	0.7ab	0.1a	0.4a	1.5ab	0.7a	0.5a	0.9a
AC 303,630 2SC + Orchex 796 spray oil	14.7 oz 47.9 oz	2.0	3.3a	0.1a	0.4a	0.0a	0.8a	0.2a	0.4a	0.8a
Standard program		2.0	2.6a	0.5ab	0.5a	1.1ab	4.8bc	0.4a	0.3a	1.5a
Control		2.3	5.8a	2.5c	2.2b	2.7b	6.7b	5.6b	2.7b	4.0b

Means within a column followed by the same letter are not significantly different (P=0.05 Fisher's Protected LSD). Data were subjected to $\sqrt{x+0.5}$ transformation for statistical analysis. Nontransformed means are presented for comparison.

Treatment	Form./ acre	Anjou—Mean PP adults per 10 taps								
		Pre- treatment	2 Jun	9 Jun	22 Jun	7 Jul	20 Jul	8 Aug	27 Aug	Seasonal mean
AC 303,630 2SC + Orchex 796 spray oil	4.9 oz 47.9 oz	2.7	0.2a	1.1ab	5.5a	2.3a	5.4ab	6.1c	5.4a	3.7a
AC 303,630 2SC + Orchex 796 spray oil	9.8 oz 47.9 oz	5.7	0.3a	2.1bc	7.8a	2.0a	4.3a	2.9b	4.0a	3.3a
AC 303,630 2SC + Orchex 796 spray oil	14.7 oz 47.9 oz	1.9	0.3a	0.8a	1.8a	0.8a	3.0a	1.8ab	3.5a	1.7a
Standard program		2.8	0.3a	0.5a	1.9a	6.7a	14.5bc	0.7a	3.1a	4.0a
Control		3.7	2.0b	2.3c	4.6a	20.2b	24.0c	9.0c	5.8a	9.7b

Means within a column followed by the same letter are not significantly different (P=0.05 Fisher's Protected LSD). Data were subjected to $\sqrt{x+0.5}$ transformation for statistical analysis. Nontransformed means are presented for comparison.

Proceedings of the 68th Annual Western Orchard Pest & Disease Management Conference

Treatment	Form./ acre	Anjou—Mean predators per 10 taps								Seasonal mean
		Pre- treatment	2 Jun	9 Jun	22 Jun	7 Jul	20 Jul	8 Aug	27 Aug	
AC 303,630 2SC + Orchex 796 spray oil	4.9 oz 47.9 oz	0.0	0.0a	0.8a	0.8a	0.8a	1.7a	0.8b	6.7ab	1.7a
AC 303,630 2SC + Orchex 796 spray oil	9.8 oz 47.9 oz	0.0	0.0a	0.8a	0.8a	0.0a	0.0a	0.0b	0.0b	0.2a
AC 303,630 2SC + Orchex 796 spray oil	14.7 oz 47.9 oz	0.0	0.0a	0.0a	0.0a	0.8a	0.0a	0.8b	0.0b	0.2a
Standard program		0.0	0.0a	0.8a	0.8a	0.0a	0.0a	0.8b	0.8b	0.5a
Control		0.0	1.7a	2.5a	1.7a	5.0a	5.0a	5.0a	25.8a	6.7b

Means within a column followed by the same letter are not significantly different (P=0.05 Fisher's Protected LSD). Data were subjected to $\sqrt{x+0.5}$ transformation for statistical analysis. Nontransformed means are presented for comparison.

Treatment	Form./acre	Percent codling moth damage			
		First generation (23 Jul)		Second generation (26 Aug)	
		Bartlett	Anjou	Bartlett	Anjou
AC 303,630 2SC + Orchex 796 spray oil	4.9 oz 47.9 oz	10.7c	1.3a	18.3bc	3.7b
AC 303,630 2SC + Orchex 796 spray oil	9.8 oz 47.9 oz	2.7b	1.3a	8.7b	2.0ab
AC 303,630 2SC + Orchex 796 spray oil	14.7 oz 47.9 oz	2.4ab	2.0a	6.7b	1.3ab
Standard program		0.0a	0.0a	0.0a	0.3a
Control		30.0d	10.0b	36.0c	28.0c

Means within a column followed by the same letter are not significantly different (P=0.05 Fisher's Protected LSD). Data were subjected to arcsine transformation for statistical analysis. Nontransformed means are presented for comparison.