

APPLE: *Malus domestica* Borkhausen, ‘McIntosh’ and ‘Red Delicious’

COMPARISON OF INSECTICIDES AGAINST WOOLLY APPLE APHID, 2017

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Woolly apple aphid (WAA): *Eriosoma lanigerum* (Hausmann)

A field trial was conducted in the 2017 growing season to test the efficacy of insecticides with activity against woolly apple aphid (WAA). Treatments were arranged in a RCB design and replicated three times in ‘McIntosh’ and ‘Red Delicious’ cultivars. These plots were sprayed using airblast applications at 90 gpa. A full list of treatments including materials used, application timings and rates is listed in Table 1. Three applications of Mesurol 75W (12.0 oz/A) were applied to the test orchard on 31 May, 12 Jun and 12 Jul in an attempt to flare WAA populations in the test orchard. WAA was sampled pre- and post-application (approx. every 7 days PT) to determine efficacy of materials used. There are no recommended treatment threshold levels for WAA in NY apple orchards, so treatments were applied when WAA were first observed, or approximately 15% infestation, or a first cover application timing, or a combination of first cover timing and first aerial colony. Plots were sampled by counting the presence or absence of WAA colonies on 100 terminals in each replicate. Data was transformed and subjected to an AOV with JMP. Means were separated with Student’s t test.

As in previous years in this test orchard, Mesurol applications worked very well for building WAA populations quickly. This is likely due to the material eliminating parasites and predators of WAA in an orchard that does not receive any other insecticides than what is in this trial. All treatments worked very well to reduce populations in 2017. The 2 treatments where Movento 240SC was applied at 1st cover timing seemed to have a slightly delayed effect, but showed no significant difference when Sivanto was added at first sign of WAA, or when Movento was stand-alone. The treatments consisting of 2 applications of Closer 5SC at the same rate and timing, but using either LI-700 or Dyne-Amic as an adjuvant, also did not have significant differences between them on any sample date. All of the treatments were statistically similar to one another on every sample date, as well as being efficacious when compared against the untreated plot, which indicates that these are all valid control measures against WAA. The untreated plot eventually also fell to very low numbers mid-season, which would indicate that the effect of the Mesurol had dissipated and WAA predators and parasites had returned to the test orchard.

Table 1

Treatment/formulation	Rate amt/acre	Timing	Application Dates
Closer 5SC+	5.75 oz	15% infestation + 14d	27 Jun, 12 Jul
LI-700	32.0 oz		
Closer 5SC+	5.75 oz	15% infestation + 14d	27 Jun, 12 Jul
Dyne-amic	48.0 oz		
Movento 240 SC+	9.0 oz	Approximately 1 st Cover	12 Jun
LI-700	32.0 oz		
Movento 240 SC+	9.0 oz	Approximately 1 st Cover	4 Jun
LI-700	32.0 oz		
Sivanto	14.0 oz	First appearance of WAA	24 Jun
LI-700	32.0 oz		
<u>Untreated Check</u>			

Table 2

Treatment/formulation	Rate amt/acre	% WAA Infested Terminals								
		11 Jun	22 Jun	29 Jun	3 Jul	10 Jul	17 Jul	26 Jul	1 Aug	7 Aug
Closer 5SC+	5.75 oz	0.0 a	17.0 ab	52.7 a	5.7 b	7.3 b	0.0 a	0.0 a	0.7 a	0.3 a
LI-700	32.0 oz									
Closer 5SC+	5.75 oz	0.0 a	29.3 a	60.7 a	10.7 b	10.7 b	0.0 a	0.0 a	0.3 a	0.7 a
Dyne-Amic	48.0 oz									
Movento 240 SC+	9.0 oz	0.0 a	16.3 ab	44.0 ab	14.7 b	11.0 b	0.0 a	0.0 a	1.3 a	0.0 a
LI-700	32.0 oz									
Movento 240 SC+	9.0 oz	0.0 a	8.3 b	41.3 ab	10.7 b	10.0 b	0.0 a	0.0 a	1.7 a	1.0 a
LI-700	32.0 oz									
Sivanto+	14.0 oz									
LI-700	32.0 oz									
<u>Untreated Check</u>		0.0 a	15.7 ab	15.7 b	40.7 a	31.0 a	0.0 a	0.3 a	2.0 a	2.3 a

Means within a column followed by the same letter are not significantly different (Student's t Test, $P \leq 0.05$).

% WAA Infestation 2017

