

APPLE: *Malus domestica* Borkhausen, ‘MacIntosh’ and ‘Delicious’

COMPARISON OF INSECTICIDES AGAINST WOOLLY APPLE APHID, 2018

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

A field trial was conducted in the 2018 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 ‘MacIntosh’ and ‘Delicious’ cultivars. These plots were sprayed using air-blast 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 30 May, 11 Jun and 25 Jun 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 at first cover application timing, or when WAA were first observed, or approximately 15% infestation. 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 2018. The prophylactic treatment of Movento 240SC at 1st cover held WAA to populations to zero for 4 weeks post application, at which time Sivanto Prime was applied when aerial colonies appeared. Closer 5SC was applied at a 15% infestation level, plus 14d with and without LI-700. Both of these treatments were statistically as effective as the Movento/Sivanto treatment except for one sample date, which was taken shortly after the 15% threshold had been reached. The untreated plot eventually fell to a zero level of infestation, 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	6 Jul, 19 Jul
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LI-700	32.0 oz		
Movento 240 SC+	9.0 oz	Approximately 1 st Cover	11 Jun
LI-700	32.0 oz		
Sivanto	14.0 oz	1 st aerial colony +14d	11 Jul, 26 Jul
LI-700	32.0 oz		
Untreated Check			

Table 2

Treatment/form	Rate amt/A	% WAA Infested Terminals										
		30 May	5 Jun	13 Jun	19 Jun	25 Jun	3 Jul	9 Jul	16 Jul	23 Jul	30 Jul	6 Aug
Closer 5SC+	5.75 oz	0.0 a	0.0 a	0.0 a	0.3 a	0.0 a	7.0 bc	3.7 b	7.3 b	0.7 b	0.7 a	0.3 a
Closer 5SC+	5.75 oz	0.0 a	0.0 a	0.0 a	0.0 a	0.7 a	18.0 a	3.3 b	7.7 b	4.7 b	3.0 a	0.0 a
LI-700	32.0 oz											
Movento 240 SC+	9.0 oz	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.7 b	5.0 b	6.0 b	6.7 a	0.3 a
LI-700	32.0 oz											
Sivanto+	14.0 oz											
LI-700	32.0 oz											
Untreated Check		0.0 a	0.0 a	0.0 a	1.7 a	0.3 a	16.3 ab	28.7 a	38.7 a	36.0 a	19.0 a	0.7 a

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

Mean % of Infested WAA Terminals 2018

