

APPLE: *Malus domestica* Borkhausen, “Delicious”

Evaluation of Miticides for Control of European Red Mite, 2014*

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European red mite (ERM): *Panonychus ulmi* (Koch)

Predaceous mite (TP): *Typhlodromus pyri* (Scheuten)

The purpose of this test was to evaluate miticides for control of ERM. Several blocks in a research orchard containing “Delicious” trees were managed to flare ERM. Lannate LV was applied once (17 June) for this purpose. Treatments, including an untreated check, were replicated three times with four-trees/plot and arranged in an RCB design. Miticides were applied when threshold was reached (avg. 5.0 mites/leaf, 2014 Cornell Pest Management Guidelines for Commercial Tree Fruit Production) with a Durand–Wayland air-blast sprayer at 100 gpa on 2 July (Table 1). Samples were taken 1 wk prior and 1 wk following the Lannate LV treatment and weekly following the miticide treatment (Table 2). On each sampling date, 25 leaves were sampled and brushed with a mite brushing machine and then counted under a microscope. ERM motiles, ERM eggs and

phytoseiids were counted. Data were transformed and subjected to analysis of variance, and means were separated with the Student’s *t*-test.

ERM numbers rose quickly once Lannate LV was applied to research plots. ERM populations declined in all of the treatments six DAT, and continued to decline on each sample date. By 17 July, these numbers remained statistically lower than the check plots for the remainder of the season (Table 2). ERM eggs also decreased in the treated plots, while they continued to climb in the untreated plot for the remainder of the season. Phytoseiid numbers were very low throughout the entire field trial, most likely due to the early season Lannate LV applications. Phytotoxicity was not observed in any of the treated plots.

Table 1.

Treatment/formulation	Rate/acre	Date applied
Nealta 200SC + Tactic	13.5 fl oz	2 July
Nealta 200SC + HM9425C	32 fl oz	
Nealta 200SC + Zeal 72WDG	13.5 fl oz	2 July
Nealta 200SC + Check	32 fl oz	
Zeal 72WDG	3 oz	2 July
Check	–	–

Lannate LV applied to all treatments on 17 June.

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Table 2:

Treatment/formulation	Rate amt/acre	ERM/leaf						
		11 June	24 June	2 July	8 July	17 July	25 July	30 July
Nealta 200SC + Tactic	13.5 fl oz 32 fl oz	0.8a	2.9a	9.6a	2.3b	1.1b	2.5b	1.4b
Nealta 200SC + HM9425C	13.5 fl oz 32 fl oz	0.5a	1.9a	9.3a	1.7b	0.9b	1.1b	1.1b
Zeal 72WDG	3 oz	1.2a	2.2a	9.2a	3.1ab	0.4b	1.3b	0.8b
Check	–	1.1a	1.2a	5.0a	8.0a	20.6a	31.8a	21.9a

Treatment/formulation	Rate amt/acre	ERM eggs/leaf						
		11 June	24 June	2 July	8 July	17 July	25 July	30 July
Nealta 200SC + Tactic	13.5 fl oz 32 fl oz	2.3a	30.7a	8.3a	22.1a	9.9b	15.1ab	13.6b
Nealta 200SC + HM9425C	13.5 fl oz 32 fl oz	2.1a	14.1a	11.2a	11.8a	6.9b	8.1b	10.2b
Zeal 72WDG	3 oz	2.8a	22.3a	14.7a	35.3a	25.5ab	25.4ab	27.2b
Check	–	3.3a	9.1a	9.7a	42.3a	39.9a	44.3a	63.4a

Treatment/formulation	Rate amt/acre	TP/leaf						
		11 June	24 June	2 July	8 July	17 July	25 July	30 July
Nealta 200SC + Tactic	13.5 fl oz 32 fl oz	0.2a	0.0a	0.0a	0.01a	0.03a	0.05a	0.1a
Nealta 200SC + HM9425C	13.5 fl oz 32 fl oz	0.1a	0.01a	0.0a	0.0a	0.0a	0.05a	0.05a
Zeal 72WDG	3 oz	0.7a	0.01a	0.02a	0.0a	0.0a	0.01a	0.0b
Check	–	0.4a	0.01a	0.01a	0.01a	0.04a	0.05a	0.1a

Lannate LV applied to all treatments 17 June; miticide treatments applied 2 July 2014. Means within a column followed by the same letter are not significantly different (Student's *t*-test, $P \leq 0.05$). Data transformed arcsine (\sqrt{x}) prior to analysis.