

APPLE: *Malus domestica* Borkhausen, 'Red Delicious'

Flaring of European Red Mites Following Insecticide Sprays in Apple, 2011

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Apple | *Malus domestica*European red mite (ERM) | *Panonychus ulmi* (Koch)

This trial was conducted to evaluate 'mite flaring' response of ERM following the application of insecticides targeting first-generation codling moth, with and without the addition of a thinning material in apples. Two tree plots were set up in a 28-yr-old planting of semidwarf 'Red Delicious' apples (row spacing of 20 × 10 ft) located at the MSU Trevor Nichols Research Center (TNRC), in Fennville, MI. Treatments were replicated four times and arranged in an RCB design, with a minimum of one buffer tree and one buffer row separating all plots. Insecticide treatments were applied on 13 Jun (A) and 27 Jun (B) using an FMC 1029 tractor-mounted airblast sprayer, calibrated to deliver 100 gpa at 2.5 mph (Table 1). The maintenance foliar applications applied to all treatments included Inspire Super, Captan, and Penncozeb. In addition, Sinbar and Touchdown were banded below the rows for weed control.

Mite populations were monitored with 50 leaf samples, collected randomly from plots. Leaves were brushed onto plates using a mite-brushing machine, with motile forms counted under a stereo microscope, and converted to mites per leaf. Data were analyzed using ANOVA and means separation by Tukey's HSD at $P = 0.05$. ANOVA was performed on log-transformed ($\log x + 1$) data; data presented are actual counts.

ERM motile populations were significantly higher than the untreated check in the Asana treatment on all evaluation dates, and in the Assail treatment on 14 Jul (Table 1).

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Table 1.

Treatment/formulation	Rate product/acre	Appl. timing	ERM motile forms per leaf			
			20 Jun	1 Jul	14 Jul ^a	30 Jul
Untreated check			0.5b	5.5b	9.3b	1.3b
Asana XL 0.66EC	9.6 fl oz	AB	6.8a	7.3a	51.8a	23.5a
Delegate 25WG	5.2 oz	AB	1.3b	1.0b	28.3b	16.0ab
Rimon 0.83EC	20 oz	AB	0.3b	1.0b	12.0b	0.8b
Altacor 35WDG	3 oz	AB	0.3b	4.5b	13.5b	12.5ab
Assail 30SG	6 oz	AB	0.0b	2.0b	60.3a	4.3ab
Sevin XLR 4F	1 qt	A	0.5b	1.3b	11.8b	0.3ab
Delegate 25WG	5.2 oz	AB	0.3b	0.3b	10.5b	1.5ab
Sevin XLR 4F	1 qt	A				
Rimon 0.83EC	20 oz	AB	0.0b	1.5b	12.3b	1.3ab
Sevin XLR	1 qt	A				
Altacor 35WDG	3 oz	AB	0.0b	1.0b	10.5b	1.5ab
Sevin XLR 4F	1 qt	A				
Assail 30SG	6.0 oz	AB	0.3b	1.0b	11.3b	1.0ab
Sevin XLR 4F	1 qt	A				

Means followed by the same letter do not significantly differ ($P \leq 0.05$, Tukey's HSD).

ANOVA performed on log-transformed ($\log x + 1$) data; data presented are actual counts.

Application dates A = 13 June, B = 27 June, 2011.

^aANOVA may not be valid as the data failed Bartlett's test for homogeneity.