

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

Flaring of European Red Mites Following Insecticide Sprays in Apple, 2010

John C. Wise¹ and Raja Zalinda Raja JamilDepartment of Entomology, Michigan State University, East Lansing, MI 48824-1115, Phone: (517) 432-2668, Fax: (517) 353-5598 (wisejohn@msu.edu; zalindajamil@gmail.com) and ¹Corresponding author, e-mail: wisejohn@msu.edu

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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 27-yr-old planting of semi-dwarf '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 25 May (A) and 8 June (B) using an FMC 1029 tractor-mounted airblast sprayer, calibrated to deliver 100 gpa at 2.5 mph (Table 1). The foliar maintenance applications to the entire orchards included Manzate, Penncozeb, Ziram, Flint, and Procure. In addition, Solicam, Gramoxone, and Precep were banded under the trees for weed control.

Mite populations were monitored with fifty 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 on were significantly higher in the Altacor or Assail treatments (14 Jul) and the Asana treatment (4 Aug) compared with the untreated check (Table 1).

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Table 1.

Treatment/formulation	Rate product/acre	Appl. timing	ERM motile forms per leaf			
			16 Jun ^a	29 Jun	14 Jul	4 Aug ^a
Untreated check			0.3ab	0.3a	0.9c	0.1b
Asana XL 0.66EC	9.6 fl oz	AB	0.1b	0.6a	3.8abc	2.0a
Delegate 25WG	5.2 oz	AB	0.6ab	1.3a	1.0bc	0.7ab
Rimon .83EC	20 oz	AB	0.7a	2.2a	2.7abc	0.9ab
Altacor 35WDG	3 oz	AB	0.3ab	1.5a	5.3ab	0.5b
Assail 30SG	6 oz	AB	0.2ab	0.9a	6.2a	1.3ab
Sevin XLR 4F	1 qt	A	0.5ab	0.1a	0.9c	0.6ab
Delegate 25WG	5.2 oz	AB	0.1b	0.2a	1.1bc	0.6ab
Sevin XLR 4F	1 qt	A				
Rimon .83EC	20 oz	AB	0.1b	0.2a	3.8abc	1.3ab
Sevin XLR 4F	1 qt	A				
Altacor 35WDG	3 oz	AB	0.1b	0.7a	4.0abc	1.1ab
Sevin XLR 4F	1 qt	A				
Assail 30SG	6.0 oz	AB	0.3ab	0.6a	2.7abc	0.6ab
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 timing: A = 25 May; B = 8 June.

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