

## Control of Twospotted Spider Mites, *Tetranychus urticae*, in Walnuts – 2003

Investigators: Benny Fouché & Joe Grant, Farm Advisors, UCCE San Joaquin County  
Dawn Brunmeier, Don Colbert, Brenda Villalpando & Scott Whiteley,  
University of California Cooperative Extension, San Joaquin County

Farmer Cooperator: Eugene Caffese, Farmington, California

### Experimental Design:

- Single-tree plots, trees 4<sup>th</sup> year in ground. Four Replications
- Randomized Complete Block Design with treatments assigned according to pretreatment pest severity
- Hot spots were identified and 10-leaflet samples removed from subterminal leaves in that area of the tree canopy
- Treatments were applied with 5 hp Solo Backpack Blower at 100 Gallons/Acre on July 14<sup>th</sup>. The Hexacide plots received a second application at 2% v/v on July 30<sup>th</sup>. The Activol plots were oversprayed with Proud on August 6<sup>th</sup>
- 10-leaflet samples were taken to lab, brushed and examined under a dissecting microscope or scanned under a lighted magnifier if only a few mites present

<b>Table 1. Treatment Materials</b>		
<u>Product</u>	<u>Active Ingredient</u>	<u>Product/Acre</u>
Zeal 72 WDG	etoxizole	.090 Lb
Zeal 72 WDG	etoxizole	.125 Lb
Mesa 1% EC	milbemectin	20 oz + oil
Mesa 1% EC	milbemectin	25 oz + oil
Onager 1 E	hexythiazox	16 oz
Onager 1 E	hexythiazox	20 oz
Acramite 50 WF	bifenazate	.75 Lb
Acramite 50 WF	bifenazate	1.0 Lb
Envidor 240 SC	spirodiclofen	14 oz
Envidor 240 SC	spirodiclofen	18 oz
Hexacide 5%	rosemary oil	1 % & 2% of Volume
Activol 11%, followed by Proud 5.6%	clove & garlic oils, thyme oil	1% of Volume 2% of Volume
Untreated	-----	-----

Figure 1

Walnut Mite Trial – Farmington, California  
28 Days After Treatment – Aug 12, 2003 – 10-Leaflet Sample

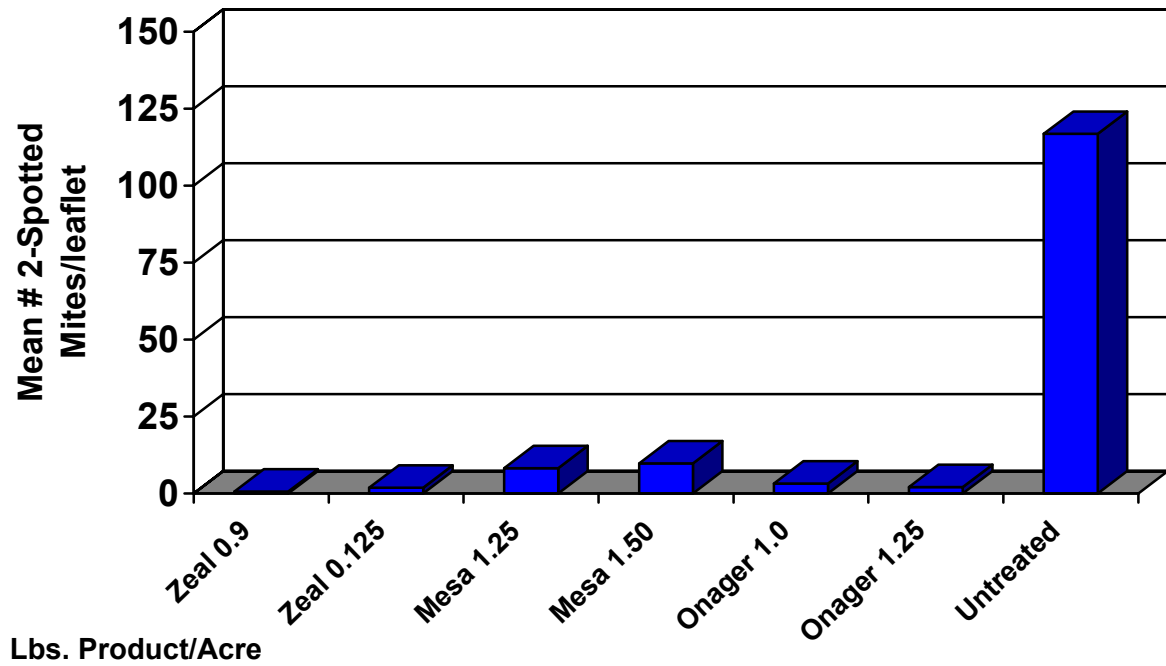
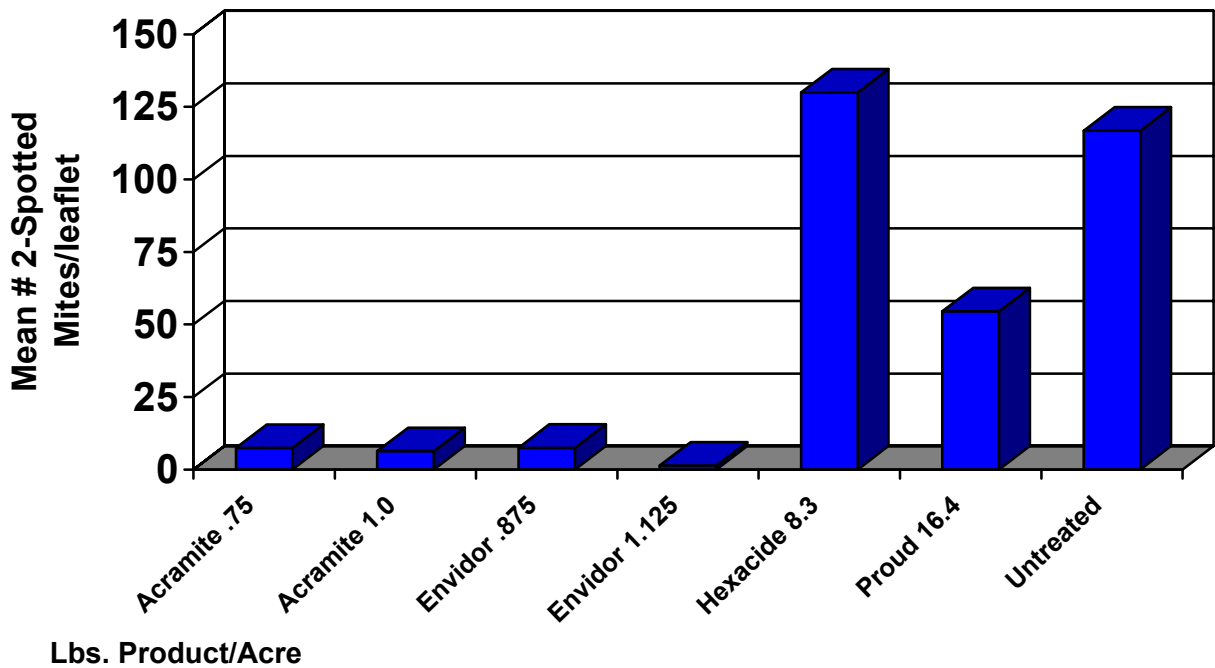


Figure 2



**Table 2. Walnut Twospotted Spider Mites – Farmington, California 2003  
Mean Number of Mites per Leaflet from 10 Leaflets**

<b>Treatment Lb/Acre</b>	<b>Jul 22</b>	<b>Jul 29</b>	<b>Aug 5</b>	<b>Aug 12</b>
Zeal .09	1.1a	0.9a	1.5a	0.7a
Zeal 0125	0.68a	0.7a	1.4a	1.9a
Mesa 1.25	2.0a	1.4a	3.2a	8.2a
Mesa 1.50	1.0a	2.3a	7.6a	9.8a
Onager 1.0	1.7a	0.5a	1.0a	3.2a
Onager 1.25	1.3a	0.5a	0.8a	2.1a
Acramite .75	1.0a	0.8a	0.3a	7.4a
Acramite 1.0	2.8a	0.2a	0.9a	6.3a
Envidor 1.125	2.6a	3.2a	0.7a	7.5a
Envidor 1.250	2.7a	0.5a	0.9a	1.4a
Hexacide 8.3 + 16.6	8.9a	50.5a	46.3b	130.3c
Activol 8.3, Proud 16.6	60.7b	134.3b	162.1d	54.5b
Untreated Control	56.5b	134.7b	126.6c	116.9c

Means within columns followed by the same letter are not significantly different (DMRT P = 0.10)

**Conclusions:**

- All materials, with the exception of the Hexacide and the Activol, provided excellent control of twospotted spider mites for the duration of the trial.
- The control from Hexacide was significantly better than the untreated plots for the first three sample dates. By the Aug 12 sample date, mite numbers were equal to the untreated plots.
- Control from the Activol treatment was similar to the untreated plot for two weeks following the application. Proud was applied over the same trees and was able to reduce mite pressure considerably. Future tests should evaluate Proud applied at the start of mite buildup.