During the summer of 2008 a trial was conducted near Arvin, Kern Co., CA to determine the effects of miticides on the density of Willamette spider mite in grapes. A 3.5 acre portion of a mature vineyard with 8’ × 12’ spacing was divided into 75 plots, each 4 rows by 10 vines long. Plots were organized into a RCBD with 5 blocks of 14 treatments and an untreated check. Treatments were applied at 200 gpa on 24 Jun and 26 Jun using an air-blast sprayer. Mite populations were evaluated on 23 Jun (pre-counts), 27 Jun (3 DAT), 2 Jul (6/8 DAT), 9 Jul (13/15 DAT), 16 Jul (20/22 DAT), 23 Jul (27/29 DAT), 30 Jul (34/36 DAT), and 6 Aug (41/43 DAT). On each evaluation date, 10 leaves from the inside of the canopy were collected, taken to a laboratory and processed through a mite brush, and then evaluated under magnification to determine the total number of mite motiles (juveniles + adults). Data for each plot were converted into average mite motiles per leaf, and were analyzed by ANOVA using transformed data (square root (x + 0.5)) with means separated by Fisher’s Protected LSD (P = 0.05).

Mite densities were low to moderate with precounts averaging 3.7 mites per leaf and the untreated checks never exceeding an average of 12 mites per leaf. All treatments significantly reduced mite densities on at least one evaluation date (Table 1). Plots treated with Fujimite and Onager maintained mite densities < 1 mite per leaf until the end of the trial. Apollo, Brigade, Prevamite (12 fl oz), and Zeal also maintained mite densities < 1 mite per leaf through 34/36 DAT. Agri-Mek and Zoro (12 fl oz) reduced mite densities at 13/15 DAT, but by 20/22 DAT effects were lost. Zoro performed better at the 16 fl oz rate and mite densities were reduced through 34/36 DAT.

Table 1. Effects of miticide treatments on the density of motile spider mites on grape leaves

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
<th>Pre</th>
<th>3 DAT</th>
<th>6/8 DAT</th>
<th>13/15 DAT</th>
<th>20/22 DAT</th>
<th>27/29 DAT</th>
<th>34/36 DAT</th>
<th>41/43 DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri-Mek 0.15EC</td>
<td>12 fl oz</td>
<td>4.3a</td>
<td>0.88a</td>
<td>1.30abc</td>
<td>1.17bcd</td>
<td>1.60bcd</td>
<td>4.10ef</td>
<td>7.60d</td>
<td>15.93f</td>
</tr>
<tr>
<td>Agri-Mek 0.15EC</td>
<td>16 fl oz</td>
<td>8.9a</td>
<td>0.80a</td>
<td>1.03ab</td>
<td>0.72ab</td>
<td>2.73cd</td>
<td>3.65ef</td>
<td>2.38bc</td>
<td>6.08cde</td>
</tr>
<tr>
<td>Acramite 50WS</td>
<td>9 oz</td>
<td>0.5a</td>
<td>0.57a</td>
<td>0.47a</td>
<td>0.20a</td>
<td>0.45ab</td>
<td>1.18abcd</td>
<td>1.87ab</td>
<td>4.17abc</td>
</tr>
<tr>
<td>Acramite 50 WS</td>
<td>12 oz</td>
<td>0.7a</td>
<td>0.43a</td>
<td>0.37a</td>
<td>0.12a</td>
<td>0.72ab</td>
<td>1.07abcd</td>
<td>0.98ab</td>
<td>3.07abc</td>
</tr>
<tr>
<td>Prevamite SC</td>
<td>12 fl oz</td>
<td>0.9a</td>
<td>0.25a</td>
<td>0.12a</td>
<td>0.10a</td>
<td>0.27a</td>
<td>0.72abcd</td>
<td>0.88ab</td>
<td>3.60abc</td>
</tr>
<tr>
<td>Prevamite SC</td>
<td>16 fl oz</td>
<td>9.6a</td>
<td>1.75a</td>
<td>0.25a</td>
<td>0.17a</td>
<td>0.15a</td>
<td>0.88abc</td>
<td>1.95ab</td>
<td>2.83abc</td>
</tr>
<tr>
<td>Apollo 42SC</td>
<td>8 fl oz</td>
<td>2.5a</td>
<td>---</td>
<td>0.28a</td>
<td>0.10a</td>
<td>0.20a</td>
<td>0.33a</td>
<td>0.13a</td>
<td>1.43ab</td>
</tr>
<tr>
<td>Brigade 10WSB</td>
<td>16 oz</td>
<td>1.8a</td>
<td>---</td>
<td>0.12a</td>
<td>0.02a</td>
<td>0.07a</td>
<td>0.62ab</td>
<td>0.40ab</td>
<td>3.28abc</td>
</tr>
<tr>
<td>Envidor 2SC</td>
<td>18 fl oz</td>
<td>2.3a</td>
<td>---</td>
<td>2.47bc</td>
<td>1.92d</td>
<td>1.22abc</td>
<td>1.93bcde</td>
<td>1.78ab</td>
<td>5.02bdc</td>
</tr>
<tr>
<td>Fujimite 5EC</td>
<td>2 pt</td>
<td>2.1a</td>
<td>---</td>
<td>0.42a</td>
<td>0.03a</td>
<td>0.17a</td>
<td>0.43ab</td>
<td>0.08a</td>
<td>0.88a</td>
</tr>
<tr>
<td>Onager</td>
<td>20 fl oz</td>
<td>3.6a</td>
<td>---</td>
<td>0.18a</td>
<td>0.07a</td>
<td>0.15a</td>
<td>0.28a</td>
<td>0.18ab</td>
<td>0.98a</td>
</tr>
<tr>
<td>Zeal 72 WDG</td>
<td>2 oz</td>
<td>2.4a</td>
<td>---</td>
<td>0.57ab</td>
<td>0.23abc</td>
<td>0.22a</td>
<td>0.30a</td>
<td>0.63ab</td>
<td>2.43abc</td>
</tr>
<tr>
<td>Zoro 0.15EC</td>
<td>12 oz</td>
<td>7.9a</td>
<td>---</td>
<td>1.20abc</td>
<td>0.63abc</td>
<td>1.83bcd</td>
<td>3.03def</td>
<td>5.08cd</td>
<td>10.72ef</td>
</tr>
<tr>
<td>Zoro 0.15EC</td>
<td>16 fl oz</td>
<td>7.2a</td>
<td>---</td>
<td>1.43abc</td>
<td>1.92cd</td>
<td>0.72ab</td>
<td>2.27cd</td>
<td>1.88abc</td>
<td>9.18de</td>
</tr>
<tr>
<td>Untreated check</td>
<td>---</td>
<td>0.5a</td>
<td>1.92a</td>
<td>3.15c</td>
<td>3.44e</td>
<td>2.78d</td>
<td>5.12f</td>
<td>7.48d</td>
<td>11.87ef</td>
</tr>
</tbody>
</table>

1Latron B-1956 used as a surfactant at 0.0156% v/v

Means in a column followed by the same letter are not significantly different (P > 0.5, Fisher’s protected LSD) after square root (x + 0.5) transformation of the data. Untransformed means are shown.