

(C7)

GRAPE: *Vitis vinifera* L. 'French Colombard'

WILLAMETTE SPIDER MITE CONTROL IN GRAPE, 2007

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Willamette spider mite: *Eotetranychus willamettei* Ewing

During the summer of 2007 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 1.7 acre portion of a mature vineyard 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 15 Jun 2007 using an air-blast sprayer. Mite populations were evaluated on 14 Jun (pre-counts), and 6, 13, 20, 27, 34, 41, 48, 55, and 62 DAT. On each evaluation date, 10 leaves from the inside and outside 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 Willamette spider mite motiles (juveniles + adults) and eggs. Data for each plot were converted into average Willamette spider mite motiles per leaf and average Willamette spider mite eggs per leaf, and were analyzed by ANOVA using transformed data (square root ($x + 0.5$)) with means separated by Fisher's Protected LSD ($P = 0.05$).

All miticide treatments provided significant reductions in mite density on at least one evaluation date compared to the untreated check. Of these treatments Fujimite, Onager and Apollo provided the best overall control, with mite densities for the duration of the trial never exceeding 1.0 per leaf (Table 1). This was followed by both Envidor treatments, Zeal, Vendex, Brigade and Acramite, that with only minor exceptions resulted in mite densities higher than, but statistically equivalent to the top three treatments. The four abamectin treatments (Agri-Mek, Reaper, Zoro and ABBA) resulted in significant reductions in mite densities compared to the untreated check through 35 DAT for Zoro, and through 42 DAT for the other three products. Plots treated with abamectin products had comparable pest densities to the untreated check for the final 4 weeks of the trial. Ecotrol resulted in no consistent reductions in mite densities.

Data on the density of spider mite eggs paralleled trends for motile spider mites (Table 2).

Table 1.

	Rate form prod/acre	Average spider mites per leaf									
		Pre	7 DAT	14 DAT	21 DAT	28 DAT	35 DAT	42 DAT	49 DAT	56 DAT	63 DAT
Fujimite 5EC ¹	2 pt	1.6a	0.00a	0.0a	0.0a	0.0a	0.1a	0.1ab	0.5ab	0.1ab	0.1a
Onager 11.8EC	20 fl oz	3.5a	0.13ab	0.1ab	0.0a	0.3ab	0.1a	0.1a	0.2ab	0.1a	0.1a
Apollo 42SC	8 oz	0.8a	0.01ab	0.1ab	0.0a	0.8ab	0.1a	0.3abc	0.1a	0.2ab	0.1a
Envidor 2SC ³	18 fl oz	0.9a	0.06ab	1.1cd	1.0b	2.2abc	0.9a	1.1abcd	0.9ab	0.5abc	0.3ab
Envidor 2SC ²	18 fl oz	1.9a	0.02ab	0.4abcd	0.4ab	2.2bc	1.1a	1.1abcd	1.0ab	0.8abc	0.4ab
Zeal 72WDG	2 oz	0.9a	0.03ab	0.5abcd	0.2ab	0.4ab	1.1a	1.3abcd	0.8ab	0.2ab	0.5abc
Vendex 50WP ¹	2.5 lb	1.7a	0.04ab	0.4abcd	0.2a	1.4abc	1.1a	0.9abcd	0.5ab	0.3abc	0.4ab
Brigade 10WSB ¹	16 oz	3.7a	0.00a	0.2abc	0.0a	0.4ab	0.5a	1.5abcd	1.9bc	1.3cd	1.4cd
Acramite 50WS	1 lb	0.5a	0.02ab	0.3abcd	0.3ab	1.0abc	1.3a	1.7cd	0.5ab	0.6abc	0.3ab
Agri-Mek 0.15EC ¹	10 fl oz	2.4a	0.03ab	1.1bcd	0.1a	1.9abc	1.5a	1.2abcd	1.6abc	0.8abc	0.3ab
Reaper 0.15EC ¹	10 fl oz	1.4a	0.00a	1.2d	0.6ab	3.2cd	1.6a	1.7cd	3.6cd	0.7abc	0.6abc
Zoro 0.15EC ¹	10 fl oz	1.8a	0.00a	0.8abcd	0.6ab	1.9abc	2.0a	5.2ef	4.4cd	1.0bc	1.9d
ABBA 0.15EC ¹	10 fl oz	1.8a	0.14ab	1.0abcd	0.4ab	2.3bc	2.0a	2.3de	4.2cd	1.7cd	1.1bc
Ecotrol 10EC	4 pt	2.2a	0.22b	3.1f	2.6c	7.8de	9.6b	8.4f	6.4d	2.8d	1.3cd
Untreated		0.2a	0.67b	2.2e	7.2d	9.3e	9.7b	5.0ef	4.5cd	0.9abc	1.3bcd

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

²Silwet L-77 used as a surfactant at 0.04% v/v

³Induce used as a surfactant at 0.25% v/v

Means in a column followed by the same letter are not significantly different ($P > 0.05$, Fisher's protected LSD) after square root ($x + 0.5$) transformation of the data. Untransformed means are shown.

Table 2.

	Rate form prod/acre	Average spider mites per leaf									
		Pre	7 DAT	14 DAT	21 DAT	28 DAT	35 DAT	42 DAT	49 DAT	56 DAT	63 DAT
Fujimite 5EC ¹	2 pt	1.7a	0.0a	0.0a	0.0a	0.0a	0.1a	0.0a	0.1a	0.0a	0.0a
Onager 11.8EC	20 fl oz	1.1a	0.1a	0.1a	0.0a	0.2ab	0.1a	0.1abc	0.1a	0.0a	0.0ab
Apollo 42SC	8 oz	0.4a	0.0a	0.1a	0.0a	0.0ab	0.1a	0.1ab	0.1a	0.2ab	0.0abc
Envidor 2SC ³	18 fl oz	0.8a	0.1a	1.1a	0.4a	0.9bc	1.5a	1.0cdefg	0.3abcd	0.5ab	0.1abc
Envidor 2SC ²	18 fl oz	0.6a	0.0a	0.4a	0.7a	1.1bc	0.8a	0.3abcd	0.3abcd	0.5bc	0.0ab
Zeal 72WDG	2 oz	0.4a	0.1a	0.5a	0.1a	0.4abc	0.8a	0.8bcdefg	0.4abcd	0.2ab	0.3abcd
Vendex 50WP ¹	2.5 lb	1.2a	0.1a	0.4a	0.1a	0.4abc	0.9a	0.8bcdefg	0.1a	0.6bc	0.2abcd
Brigade 10WSB ¹	16 oz	1.0a	0.0a	0.2a	0.0a	0.1ab	0.2a	1.2defgh	0.6abcd	0.4bc	0.3bcd
Acramite 50WS	1 lb	0.1a	0.0a	0.3a	0.0a	0.6abc	0.4a	0.5abcde	0.1ab	0.4abc	0.1abc
Agri-Mek 0.15EC ¹	10 fl oz	0.4a	0.1a	1.1a	0.2a	0.2ab	0.9a	0.5abcdef	0.2abc	0.3abc	0.1abc
Reaper 0.15EC ¹	10 fl oz	3.0a	0.0a	1.2a	0.2a	0.3abc	1.7a	1.4efgh	0.5abcd	0.2ab	0.1abc
Zoro 0.15EC ¹	10 fl oz	1.6a	0.0a	0.8a	0.3a	0.3abc	2.1a	2.3g	0.7abcd	0.4bc	0.2abcd
ABBA 0.15EC ¹	10 fl oz	1.4a	0.1a	0.9a	0.4a	0.3abc	2.5a	1.4efgh	0.9d	0.9c	0.2abcd
Ecotrol 10EC	4 pt	1.5a	0.1a	3.1b	2.5b	1.9cd	7.0b	1.9gh	0.8bcd	0.3abc	0.4d
Untreated		0.1a	0.1a	2.2a	3.1b	2.7d	6.8b	1.4fgh	0.7cd	0.8c	0.3cd

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

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