

**C12****GRAPE:** *Vitis labrusca* L. 'Red Globe'**IN-SEASON CONTROL OF VINE MEALYBUG IN 'RED GLOBE' TABLE GRAPES IN KERN COUNTY, 2010****David R. Haviland, Jennifer Hashim-Buckey, and Stephanie M. Rill**

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Vine mealybug: *Planococcus ficus* (Signoret)

During 2010 we conducted a field trial near Arvin, CA to evaluate the effects of insecticides against vine mealybug. The trial was conducted in a 2.0 acre portion of a mature Red Globe vineyard on sandy loam soil. The trial was organized into a randomized complete block design with four blocks of 15 treatments and an untreated check (Table 1). Plot size for each of the 64 plots was two rows wide by 11 vines long on an 11ft by 6 ft vine spacing. Each plot was oriented such that there was one central row of vines used for data collection with half of each of the adjacent rows used as buffers. Insecticide treatments were made either as a foliar spray or as a soil treatment via chemigation (Table 1). Foliar sprays were made by using an air blast sprayer on 19 Feb, 29 Apr, 20 May or 22/23 Jun. Water volume was 150 gpa for applications for Feb and Apr and 200 gpa for the May and June applications. Applications to the soil were made over a period of one hour by distributing half of the insecticide for each plot into cups placed under the drip emitters. The water was then turned on for 30 min, allowing the insecticide to pour out into the soil one drip at a time. This process was then repeated during a second 30-min interval with the other half of the insecticide. Contents of each cup were stirred at 10-min intervals to help ensure consistent delivery of the insecticide to the soil. Applications to the soil were applied on 5 May and 27 May. Trials were evaluated using cluster evaluations on 28 Jul. For each plot we evaluated 10 clusters per vine on each of the 8 vines in the center of each plot. Each cluster was given a rating from 0 to 3 with 0 = no mealybug, 1 = honeydew only, 2 = mealybug present and 3 = greater than 10 mealybugs per cluster. Data were analyzed by ANOVA. Means separation was determined using Fisher's Protected LSD ( $P=0.05$ ) using transformed data ( $\arcsin(\text{square root}(x))$ ) for percentages or square root ( $x + 0.5$ ) for average ratings.

Treatments with Movento in April at both rates and Applaud + Movento were the only treatments that significantly reduced vine mealybug damage compared to the untreated check (Table 1). However, Lorsban, Clutch, Venom, and the other treatments of Movento provided numerical reductions compared to the untreated check. Comparisons among May neonicotinoids resulted in Venom and Clutch being significantly lower than plots treated with Admire or Platinum.

Table 1.

Treatment/formulation <sup>1</sup>	Rate amt form/acre	App. Date	Method	Average Rating <sup>3</sup>	Cluster Ratings <sup>2</sup> , 28 Jul Percentage clusters per category				
					0 <sup>4</sup>	1 <sup>4</sup>	2 <sup>4</sup>	3 <sup>4</sup>	1+2+3 <sup>4</sup>
Lorsban Advanced	4 pt	19 Feb	Foliar	0.02ab	98abc	1.3a	0.4a	0.0a	1.7ab
Movento 2SC	4 fl oz	29 April	Foliar	0.02ab	99a	0.4a	0.8ab	0.0a	1.3a
Movento 2SC	8 fl oz	29 April	Foliar	0.02a	99a	0.8a	0.4a	0.0a	1.3a
Movento 2SC	8 fl oz	20 May	Foliar	0.03ab	98a	2.1a	0.4a	0.0a	2.5ab
Movento 2SC	8 fl oz	22 June	Foliar	0.04ab	97abcd	2.9a	0.4a	0.0a	3.3abc
Applaud 70DF	12 oz +	29 April +	Foliar +	0.22cde	89cde	5.0a	3.3abc	2.9cd	11.3cd
+ Applaud 70DF	12 oz	20 May	Foliar						
Applaud 70DF	12 oz +	29 April +	Foliar +	0.02ab	98a	1.3a	0.4a	0.0a	1.7a
+ Movento 2SC	8 fl oz	20 May	Foliar						
Clutch 2.13SC	6 fl oz	20 May	Foliar	0.07abc	95abcde	4.5a	0.4a	0.0a	5.0abcd
Clutch 2.13SC	6 fl oz	20 June	Foliar	0.08abc	94abcde	5.0a	0.8ab	0.4ab	6.3abcd
Lannate SP	1 lb	23 June	Foliar	0.11abcd	94abcde	2.5a	2.9abc	0.8abc	6.3abcd
Venom 70SG	6 oz	27 May	Soil	0.05ab	97ab	2.1a	0.4a	0.4ab	2.9ab
Admire Pro 4.65L	14 fl oz	27 May	Soil	0.35e	82e	9.3a	5.5c	3.8d	18.5d
Platinum 75SG	5.67 oz	27 May	Soil	0.25de	86de	8.0a	3.8bc	3.0bcd	14.7d
Clutch 2.13SC	12 fl oz	5 May	Soil	0.08abc	96abc	2.1a	0.8ab	0.8abcd	3.8abc
Clutch 2.13SC	12 fl oz	27 May	Soil	0.14abcd	92abcd	3.8a	3.3abc	1.3abcd	8.3abcd
Untreated Check	n/a	n/a		0.17bcde	90bcde	4.6a	3.8c	1.3abcd	9.7bcd

<sup>1</sup>Latron B-1956 was used at a rate of 4 fl oz/100gal v/v for all foliar applied products.

<sup>2</sup>Cluster Ratings: 0 = no mealybug, 1 = honeydew only, 2 = mealybug present, and 3 = >10 mealybugs present

<sup>3</sup>Means in a column followed by the same letter are not significantly different ( $P > 0.05$ , Fisher's protected LSD) with square root ( $x + 0.5$ ) transformation of the data. Untransformed means are shown.

<sup>4</sup>Means in a column followed by the same letter are not significantly different ( $P > 0.05$ , Fisher's protected LSD) with arcsin square root transformation ( $\arcsin(\text{square root}(\text{damage percentage}/100))$ ) transformation of the data. Untransformed means are shown.