



Control of Vine Mealybug (*Planococcus ficus*) in Wine Grapes

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Introduction

Vine mealybug infestations are being found in many of the vineyards in the Lodi-Woodbridge area of Northern California. The mealybugs produce a sugary excretion that drops on the grape bunches and gives rise to a black sooty mold. They can also weaken the vine by their feeding. The pest is more aggressive, and has more generations than other mealybugs, and is spreading to new areas rapidly. See the UC IPM Pest Management Guidelines for Grapes for a complete description of the pest and management options. Also available is ANR Publication 8152, Vine Mealybug, What you Should Know. This study was initiated so that growers could gain an insight on two new materials, Venom and Movento and their potential for use in controlling of the mealybugs.

Much thanks goes to Mark Shimosaki for technical help and locating the infestation. Thanks also to Lange Twins for providing the site and working around the research plot this year.

Materials and Methods

Due to a limited number of infested vines, the applications were limited to the following:

| Product | Active Ingredient | Amount | Type & Timing |
|-------------------|-------------------|------------|-----------------------------------|
| Lorsban 4E | chlorpyrifos | 64 oz/acre | Foliar, Delayed Dormant, 21 March |
| Venom 70G | dinotefuron | 6 oz/acre | Soil, Post Bloom, 21 May |
| Movento 240 SG | spirotetramat | 5 oz/acre | Foliar, Post Bloom, 21 May |
| Movento 240 SC | spirotetramat | 8 oz/acre | Foliar, Early Berry Set, 20 June |
| Admire Pro | imadacloprid | 14 oz/acre | Soil, Early Berry Set, 16 June |
| Untreated Control | | | |

The foliar applications on Sauvignon Blanc wine grapes were made with a CO₂ backpack sprayer using a single 8002 flat fan nozzle. The volume of carrier was 150 gallons per acre for the delayed dormant application and 80 gallons per acre for the post bloom and early berry set applications. The soil applications were made just prior to an irrigation event. The amount of material was separated into two parts and placed approximately 6 inches deep in the soil below a drip emitter on each side of the experimental vine. Due to the limited number of vines available for study, single vines were used for each treatment and evaluation of control.

The following rating scale was used for determining the level of control:

- 0= no damage, no vine mealybugs
- 1= honeydew present, no vine mealybugs
- 3= some honeydew, some vine mealybugs but cluster can be harvested
- 4= very infested, cluster should not be harvested

For each week of evaluation, five clusters were evaluated and then removed from the vine. The clusters were selected based on their location near the cordon or proximity to any visible mealybugs on the nearby woody material. This biased the evaluation for the worst possible situation, unlike a random sample. At the same time this method also biased the data in the opposite direction by the removing the worst infested clusters from the test vine on a weekly basis. It's likely that the rating in the second week of July 10 reflected the previous removal of the worst bunches, making it difficult to find infested clusters the week after that.

Results and Discussion

The delayed dormant application of Lorsban provided the highest level of control for the first two weeks of trial, with no vine mealybugs found in the test vines. The Admire Pro and Movento provided the next best level of control in this experiment. Admire Pro is currently registered in grapes, but the Movento is not. The registration in grapes for Movento is expected early next year. The Venom treatment did not provide the level of control of the other materials early in the trial, however that level of control held for the duration of the test, while all the other treatments weakened, including the Lorsban.

Mean rating for vine mealybug infestation, average of 3 replications.

| | | 3-July | 10-July | 24-July | 31-July |
|----------------|-----------------|--------|---------|---------|---------|
| Untreated | | 2.0a | 2.1a | 2.7a | 2.5a |
| Lorsban 4E | Foliar 21 March | 0.0b | 0.0b | 0.3c | 0.1b |
| Venom 70G | Soil 21 May | 1.6a | 0.7b | 1.8ab | 1.9a |
| Movento 240 SC | Foliar 21 May | 0.3b | 0.7b | 0.9bc | 0.8b |
| Movento 240 SG | Foliar 20 June | 0.7b | 0.3b | 0.1c | 0.3b |
| Admire Pro | Soil 16 June | 0.7b | 0.7b | 0.5c | 0.9b |

Means followed by the same letters are not significantly different at the 90% LSD level.

Mean rating value for treatments on July 24, 2007. Lodi, CA



