

## Vine Mealybug Grower Best Management Practices

Vine Mealybug (*Planococcus ficus*) Best Management Practices (BMPs) for **growers** are common sense practices that will reduce the risks of inadvertent spread of vine mealybug (VMB) to other blocks and vineyards. The effectiveness of some of these practices has not been validated with research data; however they balance cost with practical considerations for vineyard operations.

### Trapping for Male VMB

Growers should place traps for male VMB in **all vineyards** (one trap site per 30 vine acres or vineyard if less than 30 acres).

The University of California Cooperative Extension, Sonoma County Viticulture Program contains several documents on VMB,

<http://cesonoma.ucdavis.edu/Viticulture717/Mealybugs.htm>. The following two documents are related to **VMB traps**:

- “Vine Mealybug Trapping Protocol: Monitoring Vine Mealybug with Pheromone Traps in North Coast Vineyards”
- “Retail Sources of Red Delta Traps and Lures, for male Vine Mealybug, *Planococcus ficus*”

### When Male VMB Are Caught in a Trap

- 1) Notify neighbors and encourage them to set traps in their vineyards to assist in locating the infestation(s).
- 2) Notify and train field workers to look for signs of infestations:
  - a) Depending on the time of year, the insects can be located on top of and under the bark of the trunk, the head of the vine, the cordons and in the canopy and clusters.
  - b) If ants are present on a vine, watch them closely to determine if they are “tending” VMB.
  - c) If few or no ants are present, then look for signs of honeydew – shiny, sticky leaves and trunk – as well as black sooty mold. In the late summer and fall, sooty mold will grow on the honeydew.
  - d) Wet trunks are caused by honeydew-saturated bark and are more prevalent in vineyards with mealybug infestations when few or no ants are present.
- 3) If mealybugs are located on vines, then place a few adults in a container (pill bottle or plastic bag) taking care not to smash them and deliver to the Agricultural Commissioner’s office for formal identification. Grape mealybug (*Pseudococcus maritimus*) commonly occurs in vineyards and it is essential that you know what type of mealybug you have found. This is because the monitoring and control practices for grape mealybug are **not** identical to those for VMB. Sanitation practices to reduce spread of either mealybug will also reduce the need for chemical control measures in the future.

**When a VMB Infestation is Confirmed in your Vineyard, Do the Right Thing and Notify the Following People**

- 1) Your neighbors. The VMB infestation you found may not be the only one in the neighborhood. It is possible that the VMB males your neighbors are catching in their traps are coming from your infestation; however there may be other sites. The males trapped by your neighbor may be coming from a separate infestation on your neighbor's property. VMB spread is by physical transfer of nymphs or adults on blowing leaves, birds, equipment, winery waste, bud wood and personnel. Stay in touch with your neighbors. Communicating the status of all VMB infestations and the effectiveness of subsequent control measures is vital in reducing its spread.
- 2) The Ag Commissioner. Formal identification of the adult mealybugs is advisable.
- 3) The winery that buys your fruit. Winery BMPs exist for maturity sampling, grape delivery and winery waste handling for infested vineyards.
- 4) Anyone that visits your vineyard such as your PCA and vineyard supply representative. Sanitation measures are recommended to avoid moving the pest to different blocks or vineyards.

For technical information on management and control strategies, contact the University of California Cooperative Extension.

### **Vineyard Sanitation Practices – VMB Infested Blocks**

Infested blocks should be the **last** blocks worked by equipment or field crews in a given day to avoid spread to other areas in your vineyard or other vineyards.

- 1) Equipment should be washed prior to leaving the property, ideally with a high-pressure sprayer and hot water. All plant debris and sticky surfaces must be removed/cleaned.
- 2) If washing on site is not possible, then wash off-site before entering another vineyard.
- 3) It is recommended that protective clothing (disposable coveralls or sleeve covers) be worn.
- 4) Field workers should wash their hands with soap and water prior to leaving the vineyard.
- 5) If protective clothing is not worn, then hat, shirt, pants and shoes should be vigorously brushed off to remove plant debris that can contain crawlers.
- 6) Consultants, winery personnel and others – including harvest crews – should follow these sanitation practices as well.

### **Harvesting Infested Blocks**

Additional efforts must be taken prior to, during and immediately after harvest to prevent movement of this pest.

- 1) The winery should be notified prior to the harvest date so that a delivery schedule and protocols are in place and understood by all parties before delivery is made.
- 2) As pre-harvest intervals permit, treat vines to reduce population in fruit **and in the canopy**. This will help to reduce spread during harvest activities.
- 3) If clusters are badly infested, they should be picked prior to the actual harvest date, placed in heavy-duty or double plastic bags and sent to a landfill. VMB on ripe clusters can survive under plastic in direct sunlight for several days.
- 4) If the infested vineyard will be machine harvested, care should be taken to not allow leaves to blow outside the vineyard boundary. The harvester must be thoroughly “flood” washed, as is the normal practice, then pressure washed, with hot water, prior to entering another vineyard or block.
- 5) If the infested vineyard will be hand harvested, then schedule it at the end of their shift so that workers do not have to enter another block. It is not practical to wear disposable suits

during picking, however workers clothing and tubs will probably contain VMB crawlers. Prior to leaving the vineyard, provide pickers with enough water and soap to wash hands and arms. Picking tools and tubs must also be washed. Ideally, all clean-up is completed prior to leaving the job site.

- 6) Leaves should be removed from the tops of grape bins. Tarp the load for transport. Outside surfaces of trucks, trailers and bins should be pressure washed to remove all plant debris before leaving the vineyard.
- 7) Trucks, trailers and empty grape bins should be washed before leaving the winery.
- 8) A grower may have to collect winery waste (unfermented pomace or stems from a destemmer) from the infested load and tarp it for transport back to the vineyard, to a landfill for disposal or to a composting facility. If returned to the vineyard, the waste must be immediately covered in clear plastic for at least one week. The bins that transported the contaminated waste should be washed with hot water.

### **Vineyard Management Companies**

Because infestations often go unnoticed for more than one year, minimal sanitation measures should be taken prior to leaving one vineyard and entering another:

- 1) Equipment should be pressure washed, ideally with hot water.
- 2) Instruct field workers to brush off hats, shirts, pants and shoes to remove plant debris that can contain crawlers.
- 3) Enable field workers to wash hands with soap and water prior to leaving the property.

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