

MONTEREY COUNTY . . .

CENTRAL COAST

VINEYARD NEWS



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The Vine Mealybug Spreads to Coastal Production Areas
Vine Mealybug Management For North and Central Coast Vineyards
2002 Great Wine Escape Weekend
University Extension Courses in Viticulture and Enology

The Vine Mealybug Spreads to Coastal Production Areas

Larry Bettiga, Viticulture Farm Advisor
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 Monterey, San Benito and Santa Cruz Counties

The vine mealybug (*Planococcus ficus*) has recently been found in the coastal winegrape production areas of Sonoma, Napa, San Luis Obispo and Santa Barbara Counties. New infestations have also been identified in the interior valley in Madera, Sacramento and San Joaquin Counties. As of this date I am unaware of any known infestations in the northern central coast counties of Monterey, San Benito, and Santa Cruz Counties. It is important that you learn to identify this insect so you can survey your vineyards for the presence of the vine mealybug. Contact the Agricultural Commissioner or the UC Cooperative Extension Office for identification if you find a mealybug infestation that looks suspicious. **If infestations are found, it is important to confine and control local infestations to prevent this pest from spreading within your vineyard or to non-infested sites.**

The vine mealybug is an economic pest of vineyards in the Mediterranean regions of Europe, Africa, and in the Middle East, as well as in South Africa, Pakistan, Argentina, and the southeastern United States. In California it was identified in the Coachella Valley in 1994 on table grapes and in the southern San Joaquin Valley in 1998 where it currently infests over one thousand acres of vines. It also was found in 2000 and 2001 in a few vineyards in the southern central coast region and additional sites have been found this year. In California, the vine mealybug has only been found on grapevines despite the presence of reported alternate hosts nearby. Figs, avocado, citrus, date palm, apple and some ornamentals have been listed as host plants.

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In recent years mealybugs have become an increasing problem in central coast vineyards. The grape mealybug (*Pseudococcus maritimus*) is the most common species found in the Salinas Valley, but the obscure mealybug (*Pseudococcus affinis*) has also been identified in area vineyards. The longtailed mealybug (*Pseudococcus longispinus*) is a third species that can be found in the southern central coast but has not been found locally.

Damage by the vine mealybug is similar to other mealybugs in that they produce honeydew that can drop on the clusters and foliage, which serves as a substrate for black sooty mold. Vine mealybug infestations produce large amounts of honeydew, which can resemble candle wax when the infestation is severe and is found on leaves, canes, fruit, cordons and the trunk. High population densities can result in a loss of vine vigor. The vine mealybug can be found on all parts of the vine including the root system. This is different than the other mealybug species, which are only found on the above ground portions of the vines. A percent of the population is always located on the root system making it more difficult to control and less susceptible to natural enemies. These root populations in addition to the percent that live under the bark make control with contact insecticide sprays more difficult. It has more generations per year, 5-6 compared to 2 for the grape mealybug. This higher reproduction rate allows the vine mealybug to reach damaging levels quickly. All life stages of the vine mealybug can be found year-round on various parts of the vine, unlike the grape mealybug that overwinters as eggs or newly hatched crawlers. In addition to the obvious damage the vine mealybug as well as the other species of mealybugs are capable of transmitting grapevine leafroll viruses from plant to plant. It is the above differences that make vine mealybug a potentially a more damaging insect pest than grape mealybug.

The size of the vine mealybug is similar to the grape mealybug, but the wax filaments around the body margin are much shorter. The vine mealybug does not have the long caudal filament or tail (greater than 1/4 of the body length) that is seen in the adult female in the other species of mealybugs found in vineyards. To see pic-

tures of the vine mealybug online, visit the UC Pest Management Guidelines at: <http://axp.ipm.ucdavis.edu/PMG/selectnewpest.grapes.html>. Information on mealybugs is listed under "Vine Mealybug" and "Pseudococcus Mealybugs". A new publication "**Mealybugs in California Vineyards**", UC Publication 21612, is now available and has excellent pictures on the different mealybugs found in Californian vineyards. It can be purchased at our office or online at <http://anrcatalog.ucdavis.edu/>.

As with other mealybugs ants will often be associated with vine mealybug infestations. The ants will feed on the honeydew produced by mealybugs and will tend the mealybugs and have been observed to protect them from natural enemies. High ant populations on the vines are often a signal that mealybugs or fruit lecanium scale are present in the vineyard.

Vine mealybug like the other mealybugs can be moved by vineyard equipment or people that come in contact with infested vines. The adult female mealybug and the immature stages cannot fly therefore flight is not a mechanism for spread. During harvest, mechanical harvesters, picking crews and a variety of harvesting equipment that comes in contact with the vines and fruit can move mealybugs from infested to non-infested vineyards. Spread is also possible during other times of the year with other vineyard activities. **All vineyard workers and equipment that come in contact with an infested site have the potential to spread the vine mealybug.** Sanitation of all equipment leaving known mealybug infested vineyards will help prevent further spread. As it was shown with phylloxera, wind is also a likely factor in the spread in a vineyard of mealybugs as individual insects are blown downwind.

Vine mealybug can also be spread by infected nursery stock. Vine mealybugs can be under the bark or on the roots of dormant plants or on the leaves of green growing plants. This is believed to be the method of spread in the north coast sites. At these sites there was no movement of people or equipment from the established vine mealybug areas in the San Joaquin Valley.

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The California Department of Food and Agriculture has rated the vine mealybug as a “B” pest. This rating means that the pest is of quarantine significance and regulated at the discretion of the County Agricultural Commissioner.

A team of UC entomologists headed by Kent Daane, UC Berkeley and Kearney Agricultural Center, is evaluating a trapping system utilizing sticky traps baited with a pheromone lure. The pheromone attracts the male vine mealybug, which is the only life stage that can fly. It is believed that currently the lure also attracts a mealybug species that is not an agricultural pest. Although not commercially available this trap was useful in identifying an infestation in Sonoma County.

I have included in this newsletter an article that was written by Walt Bentley, UC IPM Advisor at UC Kearney Agricultural Center, on management practices for the vine mealybug. There are very few natural enemies currently present that can reduce vine mealybug populations. The control of this insect currently will require insecticide applications.

What you should be doing?

It is important that you begin to survey your vineyards for mealybug infestations. Alert your vineyard staff to the problem. You should contact the UC Cooperative Extension or the Office Agricultural Commissioner’s Office for help with mealybug identification. As a precaution it is important to clean equipment that is move between vineyard sites or for large vineyards between blocks. If you currently have grape mealybug infestations, having a sanitation program could also reduce the spread of this insect. If you will be purchasing nursery stock ask your supplier what precautions they are taking to prevent the spread of vine mealybug. Insecticide treatments or hot water dips may be an appropriate treatment from areas were vine mealybug is known to exist.

Vine Mealybug Management For North and Central Coast Vineyards

Walt Bentley, University of California IPM Advisor,
California Statewide IPM Program, Kearney Agricultural Center

Restricting movement of vine mealybug, *Planococcus ficus*, will require a series of insecticide treatments that can be integrated with biological control organisms. Because the insect survives well on roots, near the soil surface, as well as above ground plant parts special attention to shallow root area must be given when using insecticides.

If grapes have not been harvested, vines should be treated with Provado® (imidachloprid) prior to harvest. This treatment will give short-term kill of the above ground mobile stages and, therefore, reduce the possibility of movement to uninfested areas of the vineyard. Provado® will not give long term residual required to kill newly hatching eggs later in the fall. It will reduce spread that can occur during harvest. If possible, infested areas should be hand harvested with special caution taken to keep pickers from transferring the infestation to other area. Preferably a crew should be as-

signed to harvest the infested area. After harvest they should be allowed to bathe and change clothing. Take care to wash clothing worn during harvest.

Grapes from the infested area should be carefully isolated for transport to the crushing area. The gondolas should be covered with a plastic tarp to reduce wind blown movement of the leaves. The crushing process will kill vine mealybug. However, the gondolas should be cleaned of plant debris. This debris should be destroyed prior to movement back to the vineyard. Leaves infested with vine mealybug are quite sticky and readily adhere to equipment and people. Watch for this when any equipment or individuals are in infested areas of the vineyard.

After harvest, consult with the county agricultural commissioner. Consider making an application of Lorsban® (chlorpyrifos). The four-pint rate applied in a minimum of 200 gallons per acre should cover the vine and also

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contact the base of the plant. No other additive is required with this treatment. Chlorpyrifos residues will provide approximately two-week residual control of the crawler and female stages of vine mealybug.

In 2003, another Lorsban treatment should be made prior to budbreak in late March. The same rates used in 2002 should be used. The spring treatment is more effective if applied on a warm day (70° F). The crawler stage is active on such days and contact with the insecticide will be improved compared to application when temperatures are below 65°F.

Take precautions not to move prunings or other plant parts to noninfested vineyards. Be particularly alert to cleaning equipment that may have been used in infested vineyards.

During the bloom period, if on drip irrigation, Admire® (imidachloprid) should be injected with irrigation. There is a Special Local Need label for this application. A single application can be made with a minimum of 24 ounces of product. If two applications are made, each should be made at 16 ounces per acre. The first should be applied during bloom and the sec-

ond approximately 8 to 10 weeks later, depending upon preharvest interval. Do not exceed 0.5lb active ingredient imidacloprid (Admire + Provado) per acre per year.

During the summer, releases of the parasitoid *Anagyrus pseudococci* should be made to establish it in the area. This parasitoid is available from the FAR Insectary in southern California. Specific recommendations for release are currently under development and will be available in 2003.

During the summer field workers should be trained in identifying and marking infested areas. This can help restrict movement by marking small portions of the vineyard for treatment prior to large-scale infestation; isolation of infested areas is paramount. A new pheromone for the male vine mealybug is now being utilized for monitoring. It can be used to help find incipient infestations. However, to corroborate the male "finds" in the sticky traps, infested vines with females must also be located in the vineyard.

The product names given herein are supplied with the understanding that no discrimination is intended and no endorsement by University of California Cooperative Extension is implied.

2002 GREAT WINE ESCAPE WEEKEND

The Great Wine Escape Weekend is the "hospitality event of the year" for Monterey County and the showcase event for the Monterey County Vintners and Growers Association (MCVGA). The Monterey County Vintners & Growers Association (MCVGA) brings together the talents and resources of members, partners and their community in order to promote and support their leadership in the art, the science and the business of wine. Founded in 1974, MCVGA is a non-profit organization representing over sixty vintners and growers in Monterey County.

For the 2002 Great Wine Escape Weekend Auction, MCVGA has once again selected viticulture research, through The University of California and The American Vineyard Foundation, as a beneficiary of the auction. The Boys and Girls Club of Monterey County has also been selected as the community beneficiary. The auction will occur on Saturday, November 9th at The Monterey Bay Aquarium. Friends of The University of California and The American Vineyard Foundation are encouraged to attend and indulge in fine wine and food, while also participating in a live auction that will feature premier wine and lifestyle packages. It's an event that you won't want to miss!

University Extension Courses in Viticulture and Enology

2002

Establishing the Small Vineyard October 19

Step by Step Winemaking October 19

Fundamentals of Wine Chemistry November 2

Introduction To Grapevine Diseases and Their Identification November 5

Advances in Understanding Grapevine Diseases November 6

Introduction to Wine Analysis December 14

2003

Varietal Winegrape Production February 4-6

For more registration information on the above courses contact University Extension at (530)-757-8899 or online at www.universityextension.ucdavis.edu and under program area go to Viticulture and Enology (which is listed under winemaking).

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Central Coast Vineyard News

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Larry Bettiga
Farm Advisor - Viticulture



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