

Vineyard Views

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Vine Mealybug Found in Napa County!

The vine mealybug, a serious grapevine pest, has been found in two vineyards near St. Helena. These are the first cases of vine mealybug infestation in Napa County.

Until recently, only three species of mealybugs were commonly found in California vineyards. The grape mealybug occurs throughout the North Coast, Central Coast and San Joaquin Valley. It can be found throughout Napa County, but usually does not become a problem because it is under good biological control. In Carneros, Yountville, Oakville and Rutherford, grape mealybug populations occasionally reach levels high enough that growers apply insecticides. In the Central Coast, two additional mealybugs are also found, the obscure and longtailed mealybugs.

The vine mealybug first appeared in the Coachella Valley in the early 1990s. It was spread to the southern San Joaquin Valley in the late 1990s where it currently infests over a thousand acres. It appeared in Central Coast vineyards in 2000 and 2001. In August 2002, it was found in Sonoma County and Sacramento County, and in September 2002 it was found in two Napa County vineyards.

Is this serious?

Yes! The vine mealybug is much more damaging and difficult to control than the other mealybug species. Established populations will require repeated insecticide treatments far in excess of the norm for Napa County vineyards. The vine mealybug reproduces at a higher rate than other species, enabling small numbers of mealybugs to reach damaging levels in a single season. Whereas the grape mealybug has only one generation per year, the vine mealybug has 5-6 generations in the San Joaquin Valley. It has overlapping generations so that all life stages are present year-round. This makes chemical control more difficult. The vine mealybug is not native to California, so it has fewer natural enemies than other species. It can be found on the leaves, in clusters, under the bark and even on the roots of grapevines.

Mealybugs are phloem feeders. They produce a sugary excretion (honeydew) that supports the growth of sooty mold. The vine mealybug excretes much more honeydew than other species.

The honeydew can cover leaves, canes, trunks and fruit, making entire vines a sticky mess. It often becomes so thick it resembles soft candle wax. Fruit from heavily infested vines is not suitable for harvest. The stickiness of all the plant parts also facilitates spread from vineyard to vineyard.

Mealybugs damage vines by contaminating clusters with honeydew, sooty mold, egg sacs, and lots of mealybugs. In southern California, severe vine mealybug infestations have also reduced vine growth and caused spur death.

In addition, like other mealybugs, vine mealybugs can spread grapevine viruses from vine to vine.

How did it get here?

Vine mealybug can be moved in several ways. People, and especially equipment, moving from infested vineyards to non-infested ones can easily spread vine mealybugs. Because there is so much honeydew, all parts of the vine get very sticky (leaves, canes, berries, clusters, cordon, trunks). Harvest activities can easily spread mealybugs from vineyard to vineyard. Adults, nymphs or eggs can stick to tractors, harvesters, picking pans, gloves, etc. Infested plant material carried from one block to another can spread them. Leaves that fall from the vine may have mealybugs on them. These can be blown into other parts of the vineyard. Wind can also carry individual mealybugs blown off of vines. Only the male mealybugs fly, so flight is not a mechanism of spread.

Vine mealybugs can also be moved on nursery stock. This is the most likely way it arrived in Napa County. Vine mealybugs can be under the bark or on the roots of dormant vines, and could be on leaves of green-growing plants. Plants produced in the southern San Joaquin Valley could be infested at low levels that are difficult to detect, then shipped throughout the state. In Napa County, heavy infestations were discovered on older vines. However, in both sites, we did find vine mealybugs on young replants adjacent to the infested older vines. It appears the mealybugs came in on the replants, and then moved (crawled) to the older vines. At both sites, there has been no movement of people or equipment from the San Joaquin Valley to suggest introduction other than by plant material. Infested plant material is also implicated in the recent Sonoma County infestations.

What is being done?

Vine mealybug is a B-rated pest, meaning the Agricultural Commissioner has authority to ensure that proper control measures are being implemented to reduce populations and limit its spread. In both Napa County vineyards, the owners are aggressively treating the infestations and taking steps to minimize the chance of spread during harvest activities. Eradication is their goal, although this may not be possible. In both locations, harvested fruit is crushed on the premises.

Our initial efforts are aimed at minimizing spread from the existing infestations. Heavily infested fruit is being removed from vines and destroyed. Insecticides with short pre-harvest

intervals were applied to infested blocks, and to surrounding ones, to reduce mealybug numbers. Harvest crews will change clothes and clean all equipment after picking near the infestations.

Post-harvest applications of Admire (imidacloprid) will be made. Bark may be stripped to expose more mealybugs and limit their hiding places. Additional insecticide applications will be made in late winter and early spring.

Releases of the parasitoid *Anagyrus pseudococci*, and possibly others, are planned for next year. UC researchers are developing specific recommendations for parasitoid releases in the North Coast.

A trapping program has begun to see if vine mealybug is in other parts of Napa and Sonoma counties. A pheromone lure specific to vine mealybug was recently developed by University of California entomologists. This lure attracts male mealybugs (the ones that fly) and will help determine the extent of vine mealybug infestations. One infested site in Sonoma County was discovered through the use of these traps.

What can you do?

- Alert your managers and harvest crews about the problem. Ask them to inform you if they find sticky fruit or sooty mold. Ants in the vines can also indicate a mealybug (or scale) infestation.
- Inspect any suspicious blocks for the presence of mealybugs. Adult mealybugs have a cottony white appearance. Look for them in bunches and on leaves. Ants will often be present too. On young vines, inspect the base of the plant at the soil line, especially on vines with milk cartons still in place.
- Contact my office or the Agricultural Commissioner to help with mealybug identification.
- Talk to your nursery representative if you are buying plants next year. Find out what they are doing to insure their plants are not infested. Insecticide treatments or hot water dips may be appropriate for plants originating from areas where vine mealybug is known to occur, such as Kern and Fresno counties.

For more information

- Mealybugs in California Vineyards
University of California Agriculture & Natural Resources Publication 21612. \$7.00

This new 16-page booklet has excellent photos, descriptions and a key for six mealybug species of concern in California vineyards. Copies are available at my office or can be ordered online at <http://anrcatalog.ucdavis.edu/>.

- UC Pest Management Guidelines
<http://www.ipm.ucdavis.edu/PMG/selectnewpest.grapes.html>

See the listings for Vine Mealybug and Pseudococcus Mealybugs.

Napa Valley Viticultural Fair

When: **Wednesday, November 20, 2002 9:00 a.m. – 5:00 p.m.**
Where: Napa Valley Exposition, Napa

Mark your calendars now for the seventh Napa Valley Viticultural Fair at the Napa Valley Exposition in the city of Napa. This year's event will feature over 100 vendors and agencies providing products and services to winegrape growers. Included will be vineyard equipment dealers, trellis suppliers, compost and fertilizer products, grapevine nurseries, and more. This is a great opportunity to get new ideas, interact with colleagues and visit with friends. Lunch will be available on site with proceeds supporting Napa County 4-H clubs and programs. Two educational seminars will be presented: **Update on Young Vine Decline** by Dr. Doug Gubler from UC Davis, and **Vine Mealybugs in North Coast Vineyards** (tentative). Admission is only \$5.

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