University of California Cooperative Extension

Grape Notes

June 2003

Division of Agriculture & Natural Resources

County of San Luis Obispo
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Vine Mealybug Update

- ## Summer conditions

A vine mealybug infestation will become very noticeable during the months of June, July and August. During these warmer months, the population increases very rapidly and the mealybugs will be found on all parts of the vine. Physical symptoms of sooty-mold covered leaves and high ant activity will be at their most obvious. With the high pest numbers, there will also be a correspondingly high number of male mealybugs to fly into pheromone traps. This is the period when it is critical to have pheromone traps in place; if you've been procrastinating all spring, now's the time to act and get some traps in place.

- ## Educating field workers

Pheromone traps are only one tool for helping locate infestations. It is just as important to train your field workers to recognize the pest and report any suspect finds to you. Field workers are in best position to find a new infestation before spreads into a huge problem. Teaching your field workers to recognize and report a vine mealybug infestation is one of the best investments that you can make in your efforts to keep this pest out of your vineyard.

While in the field, workers and/or foremen should carry a roll of flagging tape of a distinct color to mark any suspect infested vines; this will make it much easier to return to the same area again to evaluate the insect. If your vineyard has other mealybug species present (obscure, grape, or longtailed), consider providing some workers with an inexpensive hand lens and sufficient training to allow them to distinguish between the vine mealybug and the other common mealybug species. This is not very difficult; the vine mealybug has minimal tail filaments, while the other species have obvious tail filaments. Don't assume that this task is beyond the ability of your field personnel; the more trained eyes that are on the lookout for the pest, the better your chances of finding an infestation early on.

There is no easy solution to this pest on the horizon; dealing with vine mealybug infestations of varying degrees of severity may very well become a routine part of growing grapes in California from this point forward.

- ## Bilingual posters

The "Wanted: Vine Mealybug" bilingual identification poster is available at Cooperative Extension offices in San Luis Obispo, Santa Maria, and Paso Robles. This

11” x 17” laminated poster has detailed full-color photographs of the pest. The cost is still just $3 each.

- **Print your own bilingual identification pamphlets**

  Included with this newsletter is an example of a smaller bilingual identification pamphlet available from Cooperative Extension. You can download this document over the Internet and print out as many copies as you need to distribute to your field personnel. The Internet link to download this file is:

  http://cesanluisobispo.ucdavis.edu/Viticulture/Vine_Mealybug.htm

  Follow the link named “VMB Bilingual Pamphlet”.

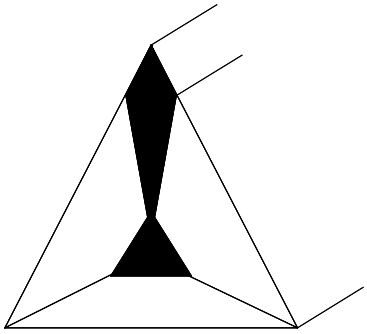
- **Continue trapping effort, report trap locations**

  Many of you have already been putting out the vine mealybug pheromone traps; for those of you with high-risk plantings (planted since 1997, have movement of personnel/equipment from infested regions) who have not yet put out traps, please do so soon. Males are now being captured in traps at the known infested sites; the cooler weather earlier this spring seemed to reduce the mealybug activity, but populations are now increasing rapidly.

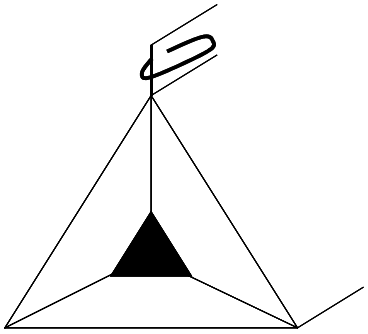
  The Agricultural Commissioners in both San Luis Obispo and Santa Barbara Counties have requested that you submit the locations of your vine mealybug traps, in the same way that you have done in the past with GWSS traps. This will help the entire industry in our efforts to ensure that the counties have adequate trap coverage.

- **Trapping tips**

  Because the vine mealybug males are so small, it is difficult to evaluate traps that have a significant amount of dust or other insects on them. To help keep traps clean, avoid placing them alongside or downwind of dusty roads, and secure the top folds of the trap with a large paper clip on each end of the trap:



Without paper clips



With paper clips

- **The importance of finding the pest prior to harvest**

If any additional vine mealybug infestations exist in this area, it is very important to find them before harvest rather than afterwards. The passage of a mechanical harvester or hand picking crews will spread the pest over a much larger area, potentially well beyond the original infested block.

European Fruit Lecanium Scale

Some growers who have been on the lookout for the ant activity and sooty mold associated with vine mealybug infestations have been finding Lecanium Scale. European Fruit Lecanium Scale (*Parthenolecanium corni*) also known as brown scale, brown fruit scale, brown apricot scale, etc., is one of the soft scales. What are normally noticed on the vine are brown leathery shells in the springtime, which are the bodies of the dead female scale.[2]

In most areas of California, this scale has one generation per year. The adult scale is usually found on current shoots, or on 1- to 3- year old growth. In late spring, the females lay 2000 or more eggs underneath the brown leathery shell; the female then dies, leaving the eggs well protected underneath the remaining shell. The crawlers hatch from late spring to mid-summer and move out from underneath the shell and upward onto the leaves. Feeding on the leaves by the immature scale produces honeydew, sooty mold, and ant activity similar to a mealybug infestation. Prior to leaf fall, the immature scale move back down onto the canes and branches, where they mature through the winter and early spring into adults.[1, 2]

Increasing problems with European Fruit Lecanium Scale have been noticed in North Coast vineyards in recent years; this may be due in part to the presence of the Argentine ant, which can interfere with the natural predation of the scale by suppressing the activity of predators such as *Metaphycus* spp., *Coccophagus* spp., *Encarsia* spp., and *Aphytis* spp.[4] Other common predators such as lady beetles and lacewings can also help control scale infestations.[1]

Treatment with in-season foliar sprays is not very efficient, because the crawlers emerge from underneath the protective shell over a period of about six weeks. Summer treatments listed on the UC IPM website include narrow-range oil sprays, and imidacloprid (Admire) applied with irrigation; post-harvest treatments include chlorpyrifos (Lorsban). In the fall just prior to leaf fall, the immature scale move down from the leaves; an application of narrow-range oil at this time can be one of the most effective treatments (W. Bentley, personal. communication). Consult the UC IPM Pest Management Guidelines for detailed information on the above treatments.

Anther scale species, the Cottony Maple Scale (*Pulvinaria innumerabilis*) has been prevalent in coastal vineyards for several years. In the springtime, this insect lays eggs in abundant cottony-like masses which will elevate the scale's body off of the vine.[3] Treatments for this pest are similar to the European Fruit Lecanium Scale.

Citations and further reading:

1. European Fruit Lecanium. UC IPM Pest Management Guidelines. UC ANR Publication 3448. http://www.ipm.ucdavis.edu/PMG/r302302011.html

2. Gill, R.J. The Scale Insects of California. 1988. CDFA, Sacramento, CA. p.60-62

3. Phillips, P. A. and K. B. Clark. 1997. Cottony Maple Scale: A potential new threat to coastal vineyards. Grape Grower, July, 22-25.

4. Varela, L.G. 2003. European Fruit Lecanium (*Parthenolecanium corni*) In-season Control with low-risk insecticides. UC Plant Protection Quarterly, Vol. 13:1. http://www.uckac.edu/ppq/

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GRAPE NOTES

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