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Treating the SECOND GENERATION of *Lobesia botrana* (EGVM) in a quarantine area

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If your Sonoma County vineyard is within a State Interior Quarantine for European Grapevine Moth (*Lobesia botrana*) and you are notified that your parcel is within 1000 meters (0.6 miles) from the location(s) that trapped moths, then you should consider making an insecticide application to the vineyard in that parcel to control this pest. An application should be directed toward second generation larvae. **On June 10, 2010, the first moths of the second flight were detected in vineyards in Oakville and Rutherford, California.**

Background

Lobesia botrana was verified in Napa County in September 2009. It is the first observation of this Lepidopteran pest in North America. It is the principle "worm" pest in most of Europe where infested vineyards require annual treatment(s). Three generations of EGVM will occur in the North Coast. EGVM is unlike other tortricid vineyard pests found in California; its unique biology allows it to cause significant damage to clusters and reduce yields. Eggs are laid singly and almost exclusively inside grapevine clusters and larvae feed **on and inside** developing flowers and berries. In the second generation, females lay their eggs individually on berries. Initially the larvae will form a silken tunnel by the cluster rachis, tie several berries together and feed on berry surfaces. Larvae penetrate mid-size berries where two berries touch.

EGVM is currently targeted for eradication by the California Department of Food and Agriculture (CDFA) and the United States Department of Agriculture – Animal Plant Health Inspection Service (USDA-APHIS).

Pheromone traps that attract male adult moths are deployed and monitored by the Sonoma County Agricultural Commissioner at a density of 16 traps per vineyard square mile. If two or more adult male moths are caught in traps placed no further than 3 miles apart, then a quarantine is established by CDFA. A quarantine is also triggered if more than one adult moth is caught in a single trap. The quarantine encompasses a 5 mile radius from the trap(s) that caught moths. Trapping density increases to 25 traps per vineyard square mile inside a quarantine area. Traps are serviced every two weeks.

Sonoma County Agricultural Commissioner

The Sonoma County Agricultural Commissioner's office (Sonoma CAC) will phone all growers with vineyards located in parcels within 1000 meters (0.6 miles) from a pheromone trap that caught adult EGVM. All suspect moths located in traps are confirmed by CDFA prior to notification. The property on which the trap was located is not identified.

Chemical Control of Second Generation Larvae

The preferred timing to achieve optimal control of EGVM during the second generation is during the egg or young larval stages. At this time of the year EGVM females will take about 4 to 6 days to mate and begin egg laying. Peak flight thus peak egg laying is predicted for June 30. Egg and larval development is completed in about 6 and 25 days, respectively. Larvae then pupate and adult moths (third flight) emerge 6-14 days after pupae form.

At this time, we are encouraging conventional growers to apply Intrepid® 2F (methoxyfenozide) or Altacor® (chlorantraniliprole) for the second generation. Both are ovicidal and larvicidal thus have activity against eggs and larvae. For the second generation Altacor® is best timed pre-oviposition (any time between June 16 and June 24) and Intrepid® is best timed against eggs, or against first and second instar larvae (any time between June 16 and June 30 preferably, but not later than July 7). At the higher rates, they will have about a 21 day residual.

For organic growers, the available materials are larvicidal only and do not have as long residual. These include Entrust® (spinosad) and "Bt" (*Bacillus thuringeinsis*) products. The first application of either of these materials should be made at egg hatch which is estimated to be about June 24. Two or more weekly applications are required to control larvae.

Spray coverage is critical; aim at the clusters and use enough water to thoroughly wet.

Although it is not expected, it is possible that EGVM larvae will be missed by a single application of a conventional material for a few reasons. First, the application may have gone on late and larger worms are difficult to kill; second, spray coverage on clusters was poor. If larvae are found in clusters 2 to 3 weeks after you made an application, **and they are confirmed to be EGVM**, you will have to make a second application with a different material. The following products are options: Success®, Avaunt® , Delegate® and Agri-Mek®. It is assumed that growers who use a Bt or Entrust® will have to make at least three applications in the second generation.

All of the products included in the online document **"Insecticides for *Lobesia botrana* on grape"** are effective on this pest; however materials in the following three groups are highly disruptive to natural enemies – pyrethroids, carbamates and organophosphates. Specifically, natural enemies of grape mealybug and spider mites will be killed and you will see damage caused by these pests.

Placing traps in your own vineyards

Sonoma County growers may place their own pheromone traps for EGVM. Do not place traps within 30 meters of any other EGVM trap on your property. Traps and lures are available for sale at local agricultural product suppliers. UC Cooperative Extension has trained many Sonoma County PCAs how to recognize adult *Lobesia botrana* moths in a sticky trap, thus independent PCAs, PCAs with agricultural product suppliers, and UCCE can identify "suspects" on your traps. Growers will have to bring traps with a suspect moth to the Sonoma CAC office for verification. **If a moth in a trap is confirmed to be EGVM, then the property on which that trap was placed is infested.**

For more information go to http://ucanr.org/egvm&leafrollers