

Washington State Grape Quarantined Pests - Management Plan Basics

Quarantined Pests Covered: vine mealybug (*Planococcus ficus*), glassy-winged sharpshooter (*Homalodisca vitripennis*), European grapevine moth (*Lobesia botrana*)

Operations Covered: All grape producers, including grape stock producers.

WAC Rules:

WAC Chapter 16-483; Grape Pest Quarantine.

<https://apps.leg.wa.gov/wac/default.aspx?cite=16-483>

Management Plan General Approach: Eradication

Description: Vine mealybug, glassy-winged sharpshooter and European grapevine moth, have been problematic introduced pests in other major grape growing areas in the USA, including California. These pests either directly reduce fruit quality and yield by damaging clusters (vine mealybug, European grapevine moth), or are efficient vectors for diseases that are under WSDA quarantine regulation (vine mealybug – *Grapevine leafroll associated viruses*; glassy-winged sharpshooter – *Xylella fastidiosa*). As such, the first approach upon their detection is to eradicate them from the area. Given that these pests are either highly mobile (glassy-winged sharpshooter, European grapevine moth), or are easily dispersed (vine mealybug), their eradication often requires treatment and scouting of areas much larger than the area of first detection.

Additional Resources:

Vine mealybug University of California Integrated Pest Management Program.

<https://www2.ipm.ucanr.edu/agriculture/grape/vine-mealybug/>

Glassy-Winged Sharpshooter. University of California Integrated Pest Management Program.

<http://ipm.ucanr.edu/PMG/PESTNOTES/pn7492.html>

European Grapevine Moth. University of California Integrated Pest Management Program. <https://www2.ipm.ucanr.edu/Invasive-and-Exotic-Pests/European-grapevine-moth/>

Management Plan Specific Approaches

Eradication Protocols:

Given the highly mobile nature of these three pests, eradication efforts should be done on an entire management unit (i.e., vineyard block). That eradication should also extend to surrounding areas (starting within 100 feet of the first detection and including that entire management unit).

Vine mealybug: Given that this insect has multiple generations in a growing season, immediately after the first detection, an insecticide management approach needs to be implemented. A canopy / foliar based approach should be considered first, followed by potentially longer-duration chemigation options as a complementary approach. Please consult Washington State University or your agronomist for chemical control options. Given this insect can be easily blown between vineyard locations, the entire management unit (e.g., vineyard block) where the insect is found, and surrounding agricultural areas within 100 feet of the first detection should be treated. If this includes neighboring farms, WSDA will notify them for development of their own quarantine pest management plan and treatment schedule). Scouting to assess eradication treatment efficacy should occur between 3- and 4-weeks post-treatment.

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Glassy-winged sharpshooter: Chemical management of this insect will be necessary for eradication. Please consult Washington State University or your agronomist for chemical control options. Given this insect is highly-mobile, the entire management unit (e.g., vineyard block) where the insect is found, and surrounding agricultural and riparian areas near the initial detection should be treated; the total treatment area will be dependent upon surveys taken in a 1 to 2 mile radius. WSDA will notify neighboring landowners for development of their own quarantine pest management plan and treatment schedule).

European grapevine moth: Depending on the timing of the first report relative to the typical lifecycle of this insect, eradication may consist of a several in-season sprays to target eggs, larvae, or adults (or all). Based on lifecycles in northern Italy, eggs will likely be present in May, July, and September. Larva will be present shortly after those periods, and the adults will likely be around in April, June-July, and August-September. That information should be used in selection of insecticides to target the life stages potentially present at the timing of application. Given this insect is highly-mobile, the entire management unit (e.g., vineyard block) the total treatment area will be dependent upon surveys taken in a 1 to 2 mile radius; WSDA will notify neighboring farms for development of their own quarantine pest management plan and treatment schedule). The optimal time to manage this insect is when it's in its larval stage, and eradications efforts should occur as early in the growing season as possible. Mating disruption has proven effective in many regions for managing this insect, and based on product availability, should be coupled with chemical control methods. Please consult Washington State University or your agronomist for chemical control options.

Post-Eradication Plans

1. Scouting and sampling post eradication:

a. Individual scouting and sampling procedures for each pest is described below.

Scouting and sampling should occur for 3 consecutive years after the initial identification and implementation of the respective Eradication Protocols. If the pest in question is found at the site during any follow-up sampling, repeat the Eradication Protocols. The duration of follow-up scouting, and sampling resets with every new positive detection. If the pest in question is not found at the site for 3 consecutive years after the original detection, the site is no longer considered infested.

b. Insect-specific scouting:

i. Vine mealybug: Sex pheromone traps are available and assist in monitoring for this highly-mobile insect; these are like the traps commonly used for grape mealybug management, except they have a vine mealybug-specific lure. The traps attract the adult males and should be monitored weekly during the growing season. Lures must be changed on a regular basis according to the manufacturer's instructions. Descriptions on how to best place and time traps is available in the Additional Resources above. In addition to pheromone traps, the site should be scouted 3 times over the growing season looking for adult females or crawlers, following a zig-zag (also called "W") sampling pattern. Record the dates of scouting and the number of vines inspected, to keep with your scouting records.

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Mealybug species can be difficult to distinguish, so work with the WSDA to accurately identify mealybugs found at the site during the quarantine regulation period.

ii. Glassy-winged sharpshooter: The impacted vineyard should be scouted a minimum of two times within the growing season (between 6-inch shoot growth and 100% véraison) for sharpshooters (predominately blue-green sharpshooter). A minimum of 1 month should occur between each scouting session. Scouting should occur each year until the site is no longer under quarantine pest management regulation. A zig-zag (also called “W”) sampling pattern is recommended, with additional focus on end rows and end vines near riparian areas, as this insect is likely to be between these two spaces. Record the dates of scouting and the number of vines inspected, to keep with your scouting records.

iii. European grapevine moth: Sex pheromone traps are available and assist in monitoring for this highly-mobile insect. The traps attract the adult males and should be monitored weekly during the growing season. Lures must be changed on a regular basis according to the manufacturer’s instructions. Descriptions on how to best place and time traps is available in the Additional Resources above. In addition to pheromone traps, the site should be scouted 3 times over the growing season, following a zig-zag (also called “W”) sampling pattern. Record the dates of scouting and the number of vines inspected, to keep with your scouting records.

2. Pest movement mitigation plans:

a. Vine mealybug: Given this insect can infest ripening fruit, while a site is under quarantine pest management regulation, all harvested fruit must be inspected to determine that it is free of the pest prior to leaving the location.

Materials used for the propagation of grapevine planting stock cannot be moved from the site while the site is under quarantine pest management regulation for vine mealybug.

b. Glassy-winged sharpshooter: Materials used for the propagation of grapevine planting stock cannot be moved from the site while the site is under quarantine pest management regulation for glass-winged sharpshooter.

c. European grapevine moth: Given this insect can infest ripening fruit, while a site is under quarantine pest management regulation, all harvested fruit must be inspected to determine that it is free of the pest prior to leaving the location. Materials used for the propagation of grapevine planting stock

cannot be moved from the site while the site is under quarantine pest management regulation for European grapevine moth.

d. Equipment cleaning requirements: All equipment used for cultivation or harvesting of grapes and vines in the infested site must be thoroughly washed or steam cleaned to remove all soil and plant material prior to movement out of an infested site. This must be completed until the site is no longer under quarantine pest management regulation.