VINE MEALYBUG (VMB)

Planococcus ficus

Description:

Adults:

Very small and present sexual dimorphism. Wingless females are ca. 1/8 inch long (3-4 mm) and retain some nymph-like features. Their pinkish oval bodies are segmented, surrounded by 18 pairs of short spines and covered with a mealy white wax. Winged males are ca. 1/16 – 1/32 inch long (1 mm), have a reddish thin body with 2 long cerci on the abdominal tip.

Eggs:

High fecundity, laying on average 300-400 (and up to 800-1000) yellowish eggs per female. Eggs masses occur within a wax ovisac usually found close to adult females and are visible using a thread loupe.

Vine mealybug crawler infesting grape (Source: Consorzio Fitosanitario di Modena, Italy)

Larvae:

Nymphs have an oval, flat and soft body covered with a white mealy wax, such as adult females but smaller. First instar nymphs, called crawlers, are very mobile. After settling to feed, the crawlers molt into sedentary nymphs. Female mealybugs have a 3rd instar stage that ends at the wingless adult stage, while males after a 2nd instar stage become pupae and then winged adults.

Hosts:

- Polyphagous with a wide range of host plants. Primary host is grapevine, but it can also attack fruit crops and ornamental plants.

Vineyards are usually infested by vine mealybug occuring obscurely under the bark. (Source: Valerie McKinney, Trécé, Inc.)

Damage:

- Phloem feeders that can infest vine roots, trunk and cordon, shoots, leaves and fruits. High density populations can reduce yield, quality and productivity of grapevine and other crops.
- Sap feeding weakens the vine, and excretion of honeydew supports growth of sooty mold on the grape.
- Can vector plant viruses, potentially transmitting many Ampeloviruses (including Grapevine leafroll-associated viruses and Grapevine virus A).

Top Left - Grape infested by vine mealybug (Source: Consorzio Fitosanitario di Modena, Italy)

Top Right - Grape infested by vine mealybug (Source: Consorzio Fitosanitario di Modena, Italy)

Bottom Left - VMB crawlers attended by an ant collecting honey dew. (Source: Valerie McKinney, Trécé, Inc.)

Phenology:

- 3 and 7 generations per year, according to the latitude and climatic conditions.
- Do not diapause during the winter. Overwinter as gravid females with eggs located under the bark, that develop in spring in temperate regions. During spring and summer, infestations rapidly move from the "wood" to shoots, leaves and clusters. Shelter underneath the bark in autumn.
- Ants may transport vine mealybug individuals and protect them. Scouting for ant activity and honeydew may aid in locating infestations.

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VINE MEALYBUG (VMB), *Planococcus ficus*

Lure Type and Maintenance:

* Please note that the lure recommendations can change depending on the trap being used

- PHEROCON® VMB-P controlled release CE/PVC™.
- Replace PHEROCON® VMB-P lures every 12 weeks.

Lure Storage:

- Store in unopened factory sealed packages in a cool place (< 74°F or 24°C maximum) for short periods or refrigerate longer term.
- Refrigerate (40°F or 4°C) or freeze (< 0°F or < –18°C) unopened packages to carry over for annual storage.

Trap Design:

- PHEROCON® V, PHEROCON® II, PHEROCON® IIID traps.

Far Left- Example of PHEROCON® IIID monitoring trap placed inside the grapevine canopy (Source: Valerie McKinney, Trécé, Inc.)

Left - Example of PHEROCON VI Delta monitoring trap placed inside the grapevine canopy (Source: Valerie McKinney, Trécé, Inc.)

Placement Time:

- Install monitoring traps in April in temperate areas of the Northern hemisphere, and continue to monitor the male flight until September-October.

Trap Density

- Use at least 2 traps for each monitored vineyard.
- Use 2 traps for each 20-40 planted acres (8-16 hectares) in large plantings.

Placement Pattern:

- Install at least 1 trap in the center of the block and at least 1 trap on the edge of each planting.

Trap Maintenance:

- Attach the monitoring traps to trellis wires in the cluster area. Remove leaves around trap entrances (for delta-shaped designs) or fully expose the sticky area (for sticky panels).
- Check trap capture every 1-2 weeks, using a hand lens or a stereomicroscope to identify the male mealybugs captured.
- Follow Trécé's recommendations for replacing pheromone lures. Traps should be replaced on a monthly basis or more frequently if the sticky liner is saturated of insect capture or debris.

Recommendations:

- Vine mealybug is a species with cryptic behavior and its population is usually concealed under the bark, where they find some protection from insecticides and natural enemies. Infestations may be scattered and not uniform inside the block. Increase the number of traps. to increase the monitoring resolution.
- Combine trap capture data with field scouting for honeydew and visual observation of infested leaves and clusters.
- Visual sampling should focus on trunk and cordon, removing bark to find the population, in early season.

Sources: Recommendations and certain other sections were sourced from UC IPM.

Note, always:

- Use only one pheromone lure per trap.
- Count and record captures as recommended.
- Change trap as needed.
- Discard lures in trash far from the area of use and remove trash afterwards.
- Follow recommendations.
- Contact local extension authorities and consultants for regional advice.

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