

GRAPE ROOT BORER

Vitacea polistiformis (Harris)



The grape root borer is the most serious threat to grapes in Florida. It belongs to the moth family Sesiidae.

Adults are brown

moths with thin yellow bands on the abdomen and resemble some paper wasps. The front wings are brown while hind wings are transparent. The eggs hatch on the soil surface and the larvae tunnels into the root system. Borer damage causes reduced vine growth, smaller leaves and reduced berry size. Because damage is restricted to below ground, problems often go unnoticed until the vines start to die. Damage ranges from just a few feeding sites to complete root destruction.

Grape root borer presence can be determined by regular root inspection or the detection of shed pupal skins at the base of the vines.

Cultural methods for control of grape root borer include mounding soil under vines just after pupation in order to reduce adult emergence. Proper weed management is also important for reducing potential egg laying sites and to increase larval mortality due to desiccation. Two species of *Heterorhabditis* nematodes have shown promise as biological control agents against grape root borer larvae. Growers can monitor populations by hanging traps baited with grape root borer pheromones. Pheromone-baited traps are recommended for monitoring adult moths. These traps should be placed about 100 m apart inside the vineyard and along adjacent woodland boundaries. Monitoring information may be useful for timing insecticide applications, and it is important to have insecticides on the soil surface at the time of egg



hatch because contact insecticides are ineffective once larvae reach the root system.

GLASSY-WINGED SHARPSHOOTER

Homalodisca coagulata (Say)

Leafhoppers belonging to this species are native to the southeastern United States. The glassy-winged sharpshooter feeds on grapevines as opposed to leaves.

Females lay eggs in groups of 10-20 on the underside of leaves, just under the surface. The glassy-winged sharpshooter vectors the bacterium *Xylella fastidiosa*, which causes Pierce's disease in grapes.



Pierce's disease is considered the most serious threat to viticulture on a national scale. It is the single most formidable obstacle to the growing of European-type (*Vinifera*) grapes. The disease is

less prevalent where winter temperatures are colder, such as at higher altitudes, further inland from ocean influences, and at more northern latitudes. It has been found in all southern states that

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raise grapes commercially; from Florida to California, and in Mexico and Central America. In general, muscadine grapes are resistant to *X. fastidiosa*, which may be responsible for the absence of Pierce's disease in some places including Florida. Early symptoms of Pierce's disease include wilting, the appearance of water loss, which is caused by bacterial growth that blocks the flow of xylem in affected plants. Subsequent damage includes discolored leaf margins, shriveled fruit, leaf drop, and irregular maturation of new canes. Host plant resistance methods, which focus on planting vines resistant

to *X. fastidiosa* may reduce the incidence of Pierce's disease.

GRAPE FLEA BEETLE

Altica chalybea (Illiger)



Grape flea beetle is found in the eastern two-thirds of the United States. It belongs to the family Chrysomelidae which feeds primarily on foliage. Adults are dark metallic greenish-blue, jumping beetles about

4 - 5 mm. (1/5 inch) long. They feed on buds and unfolding leaves. The larvae are brownish and marked with black spots. Larvae feed on flower clusters and skeletonize leaves. Damage is often restricted to vineyard borders, particularly near wooded areas. To date, no monitoring guidelines have been developed. Some biological insecticides and neonicotinoids will reduce high populations of flea beetles during the growing season.

GRAPEVINE APHID

Aphis illinoisensis (Shimer)

Aphids feed on the foliage and vines of grape plants, but more serious injury results from the infestation of the developing fruit clusters. Dry weather contributes to the growth of aphid populations.



The grapevine aphid is usually not important enough to necessitate specific treatments. Good production practices develop grapevines that are of sufficient vigor to tolerate some attack by aphids. Aphids are attacked by predators like ladybird beetle adults and larvae, and lacewing larvae, that regulate their population.

GRAPE LEAFFOLDER

Desmia funeralis (Hübener)

Grape leaffolder moths (Pyrilidae) are brownish black, with two white spots on the forewings and two white stripes across the abdomen. The larvae are about 10 - 15 mm (5/8-6/8 inch) long when mature. Larvae feed and fold the grape leaves. Third generation damage can be severe enough to cause complete defoliation. The moth can be monitored with tent-shaped traps baited with terpinyl acetate and with black light traps. In general, populations of grape leaffolder are regulated by the presence of parasitoids, including *Bracon cushmani* (Muesebeck). Insecticide sprays are generally most effective against early instars.



The curculio has been reported from New England, Florida, Missouri, among other places. An occasional pest of mature grape berries, the adult grape curculio is a foliage feeder, leaving a characteristic zigzag pattern on the undersurface of grape leaves. It lays eggs in the berry where larvae feed on the fruit as well as on the seeds. They are distinguished from the caterpillars of the berry moth, another grape berry feeder, by their lack of true legs. Proper orchard sanitation is usually adequate to prevent significant infestations. Pesticide applications are required whenever the insects or damage are present.

GRAPE CURCULIO

Craponius inaequalis (Say)

The curculio has been reported from New England, Florida, Missouri, among other places. An occasional pest of mature grape berries, the adult grape curculio is a foliage feeder, leaving a characteristic zigzag pattern on the undersurface of grape leaves. It lays eggs in the berry where larvae feed on the fruit as well as on the seeds. They are distinguished from the caterpillars of the berry moth, another grape berry feeder, by their lack of true legs. Proper orchard sanitation is usually adequate to prevent significant infestations. Pesticide applications are required whenever the insects or damage are present.



GRAPE PHYLLOXERA

Daktulosphaira vitifoliae (Fitch)

The insect that causes the characteristic galls of aerial phylloxera looks like a wingless aphid. Aerial phylloxera do little harm and do not necessarily take up residence in your vineyard. The damage is very evident on the underside of the leaf where insect feeding occurred. The insect vector has a complete life cycle that varies according to the host. Generally leaf galls are not produced on some European grapes (*Vitis vinifera* L.). The pathogenic forms of grape phylloxera feed on cell sap, mostly from young roots and leaves causing galls or lesions. Some grape varieties are resistant to attack by root or leaf forms of grape phylloxera. Many native American grapes are tolerant or resistant to root attack and are used as rootstocks for European grapes.



INSECT PESTS OF GRAPES IN THE SOUTHEASTERN UNITED STATES

Small Fruit and Vegetable IPM
Laboratory

Entomology and Nematology
Department
UNIVERSITY OF FLORIDA

OSCAR E. LIBURD, Ph.D.
UNIVERSITY OF FLORIDA
DEPARTMENT OF ENTOMOLOGY &
NEMATOLOGY
SMALL FRUIT & VEGETABLE IPM RESEARCH
LABORATORY
P. O. BOX 110620 GAINESVILLE, FL 32611
(352) 392-1901 xt. 108
oeliburd@mail.ifas.ufl.edu

This pamphlet was prepared by
Oscar Liburd and Gisette Seferina
as an
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