GRAPES

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Integrated Pest Management

Banded Grape Bug

Taedia scrupeus (Say)

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Introduction

The banded grape bug is a sporadic, early-season pest of grapes that feeds on clusters between bud break and bloom. It damages grapes during the period of rapid shoot expansion and flower cluster development. Injury by the banded grape bug was first reported in the Lake Erie region in the early 1900s. Recently, infestations have been observed in both Lake Erie and central New York vineyards. It is also present throughout the eastern states as far south as North Carolina. Cluster feeding by the banded grape bug directly reduces the productivity of Concord grapes and presumably other grape cultivars.

Nymphs

Nymphs (fig. 1) emerge from overwintered eggs when grapes are at the 3-to 6-inch shoot growth stage. They can easily be observed feeding on grape clusters and tender leaves near the shoot tips. Nymphs are green and have prominent antennae with alternating black and white segments, from which they derive their common name. They pass through five stages before becoming adults. Nymphs are sap feeders that insert their stylets (piercing-sucking mouthparts) into cluster and leaf tissue. They prefer to feed on pedicels that attach grape florets to the rachis (cluster stem) and in the rachis itself (figs. 2, 3). This feeding injures clusters when it occurs before bloom.

Adults

Adults (fig. 4), which appear shortly before bloom, are about 1 cm (3/8 in.) long. Overall, they are dark in color but often have orange sections on their wings. The amount and pattern of orange coloration varies from individual to individual. Adults are predatory and feed on a variety of insect larvae. They feed little on grapes as adults. They are highly mobile and many leave the vineyard to feed in surrounding woodlots and border areas. Adults live for 2 to 4 weeks and presumably lay their eggs from bloom to about 3 weeks after bloom. It is possible that a second generation is produced that does not feed on grapes.

Eggs

Eggs are about 0.4 mm (1/64 in.) long and oval, resembling translucent grains of rice. They are found in crevices on canes, in second-year wood, and possibly on vine trunks. Because of their size and location, they are not likely to be observed in the field.


Figure 1


Figure 2


Figure 3


Figure 4


Figure 5


Figure 6


Figure 7

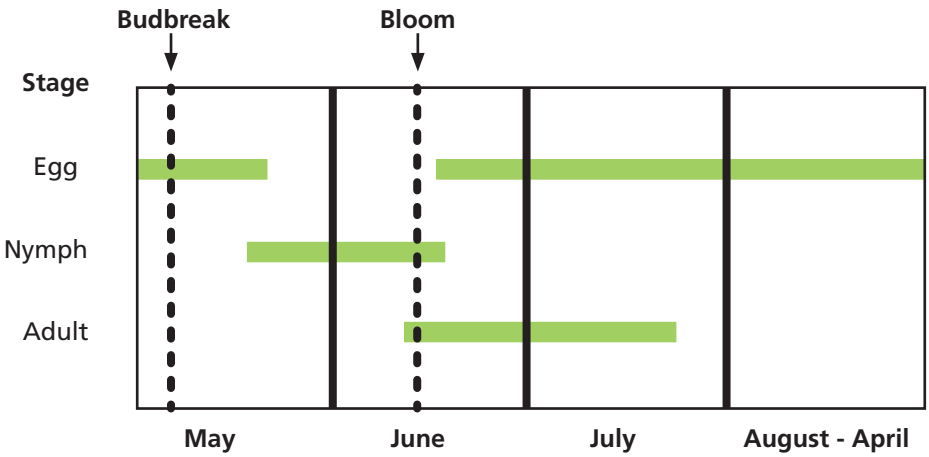
Damage

Most injury occurs between the 3-to 6-inch shoot growth stage and prebloom. Nymphal feeding on flower pedicels causes grape florets to falloff the cluster. Feeding in the vascular tissue on the cluster rachis disrupts normal cluster development, resulting in stunted clusters before bloom (figs 5, 6) and fewer berries, smaller berry size, and "ragged" clusters after bloom (fig 7). In a recent study, nymphs caged on Concord grapes reduced the number of florets per cluster, number of berries per cluster, and average berry size. Overall cluster weight was reduced by 68 percent compared to that of undamaged clus-ters. Feeding may also cause an entire flower cluster to abort. Another recent vineyard study determined that each nymph was associated with an 0.18 kg (0.4 lb.) per vine reduction in crop weight. Injury affects only the clusters and has no impact on overall vigor, shoot growth, cold hardiness, and vine size.

Management

The key to effective management is to examine vineyards at 6-to 12-inch shoot growth for presence of this pest. Examine several clusters on many vines in different locations in the vineyard. Note especially whether the infestation occurs at vineyard edges or is evenly distributed across the vineyard block. An average of one nymph per vine can cause economic injury. Infestations often occur only at vineyard edges, however, so treatment can be applied solely to infested portions of vineyards. When treatment is needed, apply insecticide while young nymphs are still present, generally between May 15 and the first week in June. Later treatment will not prevent injury or crop loss. This pest appears only sporadically and is easy to observe and identify. Therefore, routine, preventive sprays are not recommended.

Seasonal occurrence of banded grape bug life stages



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