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Grape berry moth

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Grape berry moth is common in commercial and backyard vineyards in eastern North America. It is a native insect with wild grape as its historical host. There are two or more generations of larvae per year.

Grape berry moth spends the winter as a pupa in leaf litter in and around vineyards. First generation adults emerge from the pupae around bloom. Male and female moths mate and then females lay circular, flat eggs directly onto the cluster. The eggs can be difficult to find because of their small size (approximately 1 mm diameter). Their shiny exterior can be used to detect them, especially with a hand lens. Eggs parasitized by wasp parasites turn black.

Larvae hatch from the eggs in three to six days, depending upon temperature, and feed on the cluster until they have developed to full size.

Larvae of the first generation feed on young grape clusters and may remove sections of clusters. Then, when berries are formed, the young larvae burrow into the fruit. Webbing and larvae are visible in the small clusters during and after bloom. Damage from redbanded leafroller can be mistaken for grape berry moth at this time, so it is important to identify the larvae to determine the appropriate management strategy.

The dark head capsules indicate that these eggs are close to hatching into larvae.

Mature larva.

Top, left webbing and frass with discoloration of berries from grape berry moth larva. Above, right damage caused by grape berry moth.

Second generation larvae feed on the expanding berries, and feeding sites are visible as holes. Larvae may web together multiple berries.

Larvae of the third generation feed inside berries before and after veraison. Berries may be hollowed out by feeding, and larvae at this time may contaminate harvested fruit. Damage by grape berry moth after veraison predisposes berries to infection by

Botrytis and sour rots and can attract fruit flies, wasps and ants.

In Michigan, Pennsylvania, northern Ohio and New York, it is important to scout in mid- to late July for eggs and larvae. Detecting egg laying and egg hatch helps accurately time insecticide controls. In high-pressure vineyards, egg laying may continue over many weeks late in the season. Infestation is often greater on the border than the interior of vineyards, particularly near woods or hedgerows.

Regular cluster sampling in the vineyard interior and at the borders (particularly next to woods) can help to assess berry moth infestation levels and determine management needs.