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Grape Tumid Galls

Grape tumid galls are made by larva of the small gall-midge fly, the grape tumid gallmaker - *Vitisiella* (formerly *Janetiella*) *brevicauda* (Cecidomyiidae). It is also known as the grape tomato gall. This pest is known to infest only wild and cultivated grapes (*Vitis* spp.) and it is native to the northeastern United States and southeastern Canada. In 2020, CAES scientists detected grape tumid galls in several commercial vineyards in Connecticut.

Field infestations are commonly scattered in a vineyard and in infested vines. The location, shape, and color of the galls depend on the tissue the gall-midge engineered in creating plant tissue malformations that protect the immature developing maggots. It is not uncommon to see them appear as ball-like or blister-like growths on grape flower clusters and leaves (Figs 1 and 2).



Figure 1. Typical galls formed on grapevine flower clusters.



Figure 2. Galls formed on grapevine leaves.

Pest Life Cycle:

Adult midges (~25 mm) are dark brown to reddish while the maggots are orange. Adults live one day and do not feed. Females attract males using a pheromone (odor/scent) and lay eggs within 40 minutes of copulation. Adult midges oviposit (lay eggs) within unfolding buds or shoots. The maggots hatch and enter vine tissues. As they feed, a protective gall forms around them. Fully developed maggots (Fig. 3) exit galls and drop into the soil where they pupate. They either pupate and produce adult midges in ~2-3 weeks or they delay development and overwinter in the soil emerging as adults during the following spring. Midges have from one to three generations per year. The number of generations per year is dependent on several conditions that may include, weather, vineyard location, and spring nighttime temperatures.



Figure 3. Maggots (larva) of grape tumid.

Management:

Grape tumid galls cause little economic impact as long they do not heavily infest flower clusters. Damage is more cosmetic. Therefore, pesticides applications are rarely suggested. When economically justified, efforts should concentrate on killing adults from the overwintered generation as they emerge. The use of methoxychlor which is among several compounds registered for control of this pest in Connecticut should be timed with the first appearance of galls. This will reduce populations. Consult the manufacturers label for dosage rates, safety precautions, and pre-harvest interval times.

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Several natural parasitic and predatory insects also attack the maggot stage of the grape tumid gall. Burying overwintering pupae by mounding soil up under the vines during early to mid-April is strongly suggested in plots with a history of high populations. This cultural practice helps prevent adults from reaching the soil surface, thus reducing the incidence of galls. For correct pest management procedures, growers should consult local University Cooperative Extension recommendations.

Updated on July 20, 2020.