

# Grape Flea Beetle (*Altica chalybea*)

## Description and Life Cycle



Figure 1. Grape flea beetle larvae (Photo credit: Chanel Bluntschly)

The grape flea beetle is occasionally a serious pest of grapes in Ohio. It is dark metallic greenish-blue or steel-blue and about 3/16-inch long. The most serious damage occurs in the spring. The flea beetles overwinter as adults and emerge during April. Upon emergence adult beetles begin to feed upon newly swollen grape buds, chewing holes in the ends and sides. Such damage destroys the capacity of a bud to develop a primary or secondary shoot. Once the buds have grown to a length of 1/2 inch or more, the beetles cannot cause significant injury.

Female beetles lay eggs mainly under loose bark of the grapevine. Larvae hatch and crawl to the developing grape leaves, where they feed on the upper surfaces. Adult beetles and larvae also feed on leaves, but the injury they cause usually is negligible. Newly hatched larvae of the grape flea beetle are dark brown and approximately 1/16-inch long. As they grow their color lightens and they reach a length of almost 1/3 inch. The head is black, and there are six or eight shining black dots on each of the other segments of the body, each dot emitting a single brownish hair. The under surface is paler than the dorsum, its legs, six in number, are black, and there is a fleshy, orange-colored proleg on the terminal segment. When they are fully developed, the larvae drop to the soil, burrow one inch or less and pupate. They emerge later as adults. There may be a partial or full second generation each year.



Figure 2. Adult Grape flea beetle (Photo credit: Elizabeth Long)

## Damage symptoms

Flea beetles cause two types of damage. Larvae and adults feed on the upper and lower leaf surfaces, although this injury usually is not serious. The most serious damage occurs in the spring as the adults emerge from overwintering sites and feed on newly swollen grape buds. They chew holes in the sides and ends of the newly developing grape buds, damaging primary and occasionally secondary and tertiary buds. If all three buds are destroyed, no berries will be produced. If secondary or tertiary buds are not destroyed, a partial crop may develop, but could be lost to an early frost. These beetles do not cause major damage once the buds have grown to 1/2 inch or more.



*Figure 3. Damage and frass from larvae  
(Photo credit: Chanel Bluntschly)*

## Management

Grape flea beetles are most damaging in the spring, when they feed on buds. The adult beetles eat the contents of the buds, destroying foliage and fruit that normally would develop. Fortunately, the beetle attacks are usually confined to limited areas, so if growers are aware of these infestations, they can apply an early-season spray the following year to keep populations in check. Another application of spray in June, when larvae are feeding on the grape foliage may help to control an outbreak the following year. Woodlots and wasteland areas near cultivated vineyards are a possible source of flea beetles and should be cleaned up. This will help to reduce sites for beetles to overwinter. Cultivating between rows may contribute to control of the flea beetle pupae by exposing the delicate pupae to desiccation and death. Cultivating does not eliminate emerging beetles from under the trellis and adjoining woodlots.

## Monitoring

Grape bud damage caused by the grape flea beetle is most often concentrated in vineyard borders near wooded areas. Early vineyard monitoring and past evidence of beetles in the vineyard will help determine the need for an early-season application of insecticide. Scouting of the vineyard for grape flea beetle should begin in late April and continuing until bud development is past the critical stage. These shiny metallic beetles are easily spotted on grape canes and buds on warm, sunny days in the spring. Surveys looking for adult beetles should be conducted along the vineyard perimeter, on all sides and near the center of the vineyard. At least twenty-five vines should be surveyed at each of the five locations. If bud damage averages 4% or more, an insecticide should be applied.

## Control

Brush and woodlots located near a vineyard can be a continual source of flea beetles and these areas should be cleaned up if possible. Cultivation of open areas between rows and around the vineyard can reduce the number of newly emerging adults. However, one cannot depend on this practice to control flea beetles. If at bud swell beetles are present, a broad-spectrum insecticide should be applied to prevent bud damage. This should be effective against adults migrating to vines from their hibernation sites; timing is critical.