

# Threestriped and Ashgray Blister Beetles

## Insect Pests of Horticultural Crops



The threestriped blister beetle (*Epicauta lemniscata*) and ashgray blister beetle (*Epicauta fabricii*) are insect pests that feed on vegetable plants, such as beans, beets, cabbage, carrots, chard, corn, eggplant, melon, mustard, peas, peppers, potatoes, radishes, spinach, squash, tomatoes, and turnips. This publication discusses the biology, damage, and management of threestriped and ashgray blister beetles.

### Biology

The blister beetle life cycle consists of an egg, larva, pupa, and adult. Adult threestriped and ashgray blister beetles are  $\frac{1}{2}$  to  $\frac{3}{4}$  of an inch (12.7 to 19.0 millimeters) in length. Adult threestriped blister beetles are brown to yellow with five black stripes extending lengthwise over the body. In addition, there are two spots on the head and two black stripes on the thorax, or middle section of the body (Figure 1). Adult ashgray blister beetles are gray (Figure 2). Both blister beetles have a thorax that is narrower than the head and abdomen, the last section of the body, which helps distinguish blister beetles from other beetle species.

Adults are present on host plants from summer through fall and are active in the morning and late afternoon, seeking shelter during midday to minimize exposure to sunlight. Females lay clusters of about 100 eggs in the soil near host plants. Larvae emerge (eclose) from the eggs after approximately two weeks. The larvae, called triungulins, move throughout the soil and feed on grasshopper eggs. The threestriped blister beetle has three larval instars (stages between each molt), whereas the ashgray blister beetle has seven larval instars. Blister beetles overwinter as late instar larvae or pupae in the soil. Adults emerge from the soil in summer. There is one generation per year in Kansas.

### Damage

Blister beetle adult feeding leads to the removal of leaf tissue, resulting in leaves with irregular shaped holes, jagged edges, or in some cases, only the veins remain (Figures 3 and 4). Blister beetle adults tend to feed in groups (Figure 5). In addition, they leave distinct fecal material or frass on plant leaves (Figure 6).



Figure 1. Adult threestriped blister beetle (Photo: Raymond Cloyd).



Figure 2. Adult ashgray blister beetle (Photo: Raymond Cloyd).



Figure 3. Feeding damage to chard leaf caused by threestriped blister beetle adult (Photo: Raymond Cloyd).



Figure 4. Feeding damage on eggplant leaf caused by ashgray blister beetle adult (Photo: Raymond Cloyd).

## Management

Managing threestriped and ashgray blister beetle adult populations involves scouting, hand removing, installing barriers, removing weeds, and applying insecticides.

### Scouting

Scout vegetable crops susceptible to blister beetles weekly in summer to detect early infestations and determine population trends during the growing season. Scout plants in the morning or late afternoon when blister beetle adults are likely to be present. In addition, look for fecal material or frass on leaves for evidence of blister beetle adult feeding.

### Hand Removing

To reduce damage to vegetable plants, remove blister beetle adults by hand during the growing season. Place adults into a container with soapy water to kill them. Wear leather gloves during removal, as blister beetle adults emit a substance called cantharidin that deters predators but can cause skin blisters in humans.

### Installing Barriers

Cover susceptible vegetable plants with a floating row cover to protect them from blister beetles. Be sure to fasten the sides down (Figure 7) to prevent blister beetle adults from moving underneath the cover. Floating row covers act as a physical barrier, preventing adult blister beetles from accessing vegetable plants during the growing season.



Figure 5. Threestriped blister beetle adults feeding on radish leaves (Photo: Raymond Cloyd).

### Removing Weeds

Remove weeds from within and around vegetable plantings to eliminate alternative food sources, especially pigweed (*Amaranthus* spp.), which is susceptible to adult blister beetle feeding.

### Insecticides

Apply insecticides labeled for blister beetles to keep adult populations below plant damaging levels. Multiple applications may be required during the growing season to prevent damage to vegetable plants. Apply insecticides early in the morning before adults seek shelter later in the day.



Figure 6. Fecal material or frass associated with the threestriped blister beetle adult (Photo: Raymond Cloyd).



Figure 7. Floating row cover with the sides fastened down to prevent blister beetle adults from moving underneath (Photo: Raymond Cloyd).

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