

Redheaded Flea Beetle

The redheaded flea beetle, *Systema frontalis* (Coleoptera: Chrysomelidae), is a major insect pest of nursery production systems. Adults feed on a broad range of ornamental plants, but *Itea* spp., *Hydrangea* spp., *Cornus* spp., and *Weigela* spp., are highly susceptible to damage by redheaded flea beetle adults. Some cultivars tend to be more susceptible than others, including *Itea virginica* 'Little Henry,' *Hydrangea paniculata* 'Vanilla-Strawberry' and 'Bobo,' *Cornus sericea* 'Kelseyi,' and *Weigela florida* 'Fine Wine.'

Biology

The life cycle of the redheaded flea beetle consists of an egg, larva, pupa, and adult. Eggs are oblong, approximately 1.0 mm in length, and creamy white. Larvae are 5 to 10 mm long, creamy white, and have a brown head capsule. The last body segment has a fleshy projection that curves upward and has hairs (setae) on the end. There are three larval instars (stages between molting). Larvae reside in the growing medium/soil and feed on plant roots. However, the larvae cause less damage to plants than the adults. There is minimal information available on the pupal stage.

Adults are shiny black, and 5.0 mm in length with a reddish head (Figure 1). Adult males tend to be smaller than adult females. Females lay eggs individually. Adults have an enlarged hind femur that allows them to hop like a flea, hence the common name.

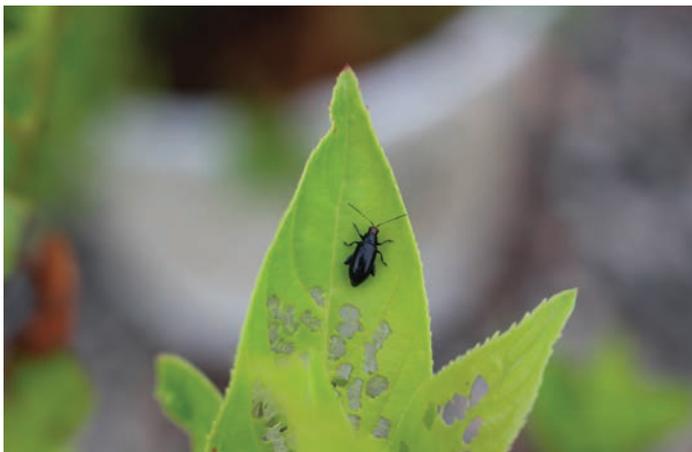


Figure 1. Redheaded flea beetle adult.

The number of generations in Kansas has not been determined. Redheaded flea beetles can emerge from plant containers as adults. They can be present from June through November; however, this depends on environmental conditions such as temperature and the availability of suitable host plants.

Damage

Adults feed on upper and lower leaf surfaces, causing leaf skeletonization or holes in leaves (Figure 2). Adults deposit black fecal material on leaves (Figure 3a). On *Itea virginica* 'Little Henry,' adults tend to feed on the new growth where leaves are folded and pointing upward (Figure 3b). Severe damage reduces aesthetic quality and marketability of plants. Adults also feed on weeds commonly associated with nursery production, including common lambsquarters (*Chenopodium album*), pigweed (*Amaranthus* spp.), smartweed (*Polygonum* spp.), and velvetleaf (*Abutilon theophrasti*).

Management

Removing weeds from nursery containers (Figure 4) helps to reduce food for redheaded flea beetle adults. Redheaded flea beetle adults may enter the nursery from surrounding vegetation. Develop and implement an aggressive scouting program by monitoring for adults weekly. Focus on plants that are highly susceptible to redheaded flea beetle adults and spray an insecticide when necessary.

Apply contact insecticides weekly when adults are active. Use high-volume applications to ensure thorough coverage of plant leaves and growing medium/soil. Redheaded flea beetle adults can avoid insecticide exposure by jumping from plant leaves onto the surface of the growing medium/soil or leaves of adjacent plants. Systemic insecticides can be used, but adults have to feed on plant leaves to be negatively affected. Furthermore, adults can still cause substantial aesthetic damage, although this depends on the numbers present.



Figure 2. Foliar feeding damage caused by adult redheaded flea beetle. Left to right: *Hydrangea* spp., *Weigela* spp., *Itea virginica*, and *Cornus sericea* 'Kelseyi'.



Figure 3a. (left) Black fecal deposits associated with adult redheaded flea beetle feeding. Figure 3b. (right) Adult redheaded flea beetles tend to feed on new growth where leaves are folded.



Figure 4. Sowthistle (*Sonchus* spp.) growing in container.

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