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REDHEADED FLEA BEETLE (*Systema frontalis*) **(Coleoptera: Chrysomelidae)**

In September, 2013 the redheaded flea beetle, also called the cranberry flea beetle, appeared in Connecticut nurseries as a pest on many different deciduous plants.



Figure 1. Adult redheaded flea beetle and damage. Photo by Rich Cowles

This native beetle has a widespread distribution in the United States east of the Rockies from Texas to Florida to Maine to Montana. Nurseries in Delaware, New Jersey and Massachusetts have also found this beetle to be a problem. Cranberry and blueberry growers in Wisconsin, Maine and Massachusetts are also affected. Outside of its native range, this insect is a pest on

cranberry and blueberry in the Pacific Northwest.

DAMAGE

Adults feed on foliage, chewing holes and shredding foliage over time. Young, tender foliage is fed on first. On thicker leaved plants just the undersides of the leaves are removed.

Larvae are found in the soil and feed on roots and underground stems.

HOSTS

Ornamental hosts in Connecticut included Abelia, Aucuba, Hydrangea, Ilex, Itea, Osmanthus, Sarcococca, Vaccinium and Weigela. Roses, forsythia and hibiscus can also be hosts. Other states have reported feeding on perennials and annuals such as asters, chrysanthemum, Coreopsis, Rudbeckia, Salvia, Sedum Veronica and zinnia.

Adults will also feed on many common weed species such as lambsquarter, pigweed, smartweed, foxtail, dogbane, velvetleaf and thistle. Additionally, Joe-Pye weed, jewelweed and steplebush, *Spirea tomentosa*, have been reported as hosts.

DESCRIPTION

Adults

Shiny black adults are nearly twice as long as wide and 3 – 4/16” long. With a hands lens and good light, you can see the reddish head. Antennae are light colored near the head and dark near the tips. The enlarged femur on the hind leg allows adults to “hop” like a flea, hence the common name.

Eggs

Pale yellow eggs are laid singly in the soil.

Larvae

Creamy white larvae have a brown head capsule, three pairs of jointed legs and can get to just under a ½” at maturity. The last body segment has a fleshy upward projection that has hairs on the tip.

Pupae

Pupae have not been described in the literature and images do not come up in a Google search.

LIFE CYCLE

Since this insect is a new discovery for Connecticut the specifics of the life cycle here need to be researched. Is it able to complete a life cycle in container media or do larvae complete development only in native soils?

The redheaded flea beetle overwinters as eggs in soil. Larvae hatch in spring as the soil warms. Upon completing development, larvae pupate. Adults may emerge from the ground in late June or early July in Connecticut.

It remains to be seen how many generations of this beetle we will have in Connecticut. Three generations per year have been reported in New Jersey.

MANAGEMENT

Growing degree days and phenological indicators can help target management tactics. In Delaware, it was found that larval activity begins around 260m – 480 GDD₅₀, when black locust trees are in bloom. Adults were first seen feeding at 590 – 785 GDD₅₀, when winterberry holly is in bloom.

When needed, either adults or larvae can be targeted for management. Entomopathogenic nematodes applied to soil may help control larvae. Pre-plant incorporation of bifenthrin or imidacloprid will also target the larval stage of this insect pest. Incorporation will require thorough distribution of the insecticide as larvae may complete development in a small volume of media.

Foliar sprays against adults may be needed. In Delaware, it was reported that thiamethoxam, dinotefuran and bifenthrin provided greater than 90% control of adults when they fed on one day old residues. Thiamethoxam provided 80% control one week after treatment. Soil-applied neonicotinoids usually provide long-term activity against adults in this group of beetles.

Since many weed species are hosts, managing weeds around the nursery and along its borders may help lower the population that gets into the nursery and damages ornamental plants.

Mention of a pesticide is for reader convenience only and not to be considered an endorsement of one product over another. Be sure to read, understand and follow all label directions before using any pesticides.

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