

Flea Beetles

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Flea beetle damage on Swiss chard.

Flea beetles are an early season pest commonly found on all members of the cole crop group, as well as spinach, beets, potatoes and eggplant. There are several different species of flea beetle that pose problems early in the season when they are considered occasional pests. Host plants of many of the flea beetles are easily identified by their common names. For example, the crucifer flea beetle attacks cole crops and mustards while the eggplant flea beetle is commonly associated with eggplant.

Appearance

Common Wisconsin flea beetles include the crucifer, eggplant, horseradish, pale-striped, potato, spinach and striped varieties. All have characteristically large hind legs that give adults the ability to jump. Adult flea beetles range in size from about $\frac{1}{10}$ – $\frac{1}{5}$ inch. Larvae are delicate and thread-like with white bodies and brown heads.

Symptoms and effects

Adults feed on both leaf surfaces, but usually on the underside where they chew small, circular holes through to the upper cuticle. This cuticle often remains in

Common Wisconsin flea beetles

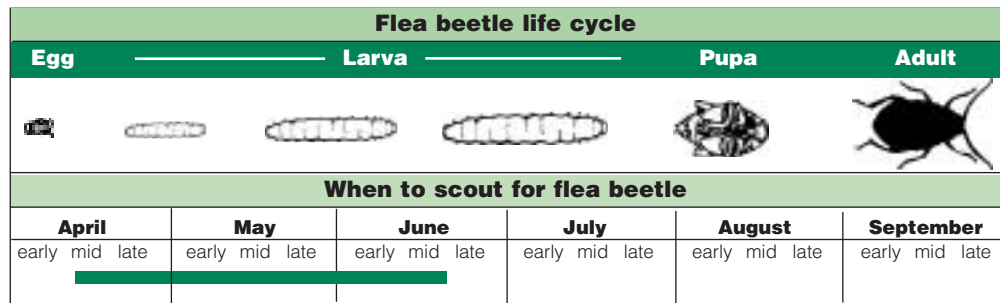
Common name	Scientific name	Description	Host plants
Crucifer flea beetle	<i>Phyllotreta cruciferae</i>	greenish or bluish-black; $\frac{1}{16}$ - to $\frac{1}{8}$ -inch	cabbage and other crucifers including horseradish
Eggplant flea beetle	<i>Epitrix fuscula</i>	black; $\frac{1}{16}$ -inch	eggplant
Horseradish flea beetle	<i>Phyllotreta armoraciae</i>	black with yellow stripes; $\frac{1}{8}$ -inch	horseradish and other mustards
Pale-striped flea beetle	<i>Systema blanda</i>	dark brown with 2 broad white stripes down its back; $\frac{1}{6}$ -inch	bean, beet, eggplant, lettuce, melon, pea, pepper, pumpkin, radish
Potato flea beetle	<i>Epitrix cucumeris</i>	dull black; $\frac{1}{16}$ -inch	potatoes, tomato, eggplant, pepper
Spinach flea beetle	<i>Disonycha xanthomeles</i>	greenish-black with a yellow thorax; $\frac{1}{5}$ -inch	spinach and beets
Striped flea beetle	<i>Phyllotreta striolata</i>	black with 2 crooked yellow strips running down its back; $\frac{1}{12}$ -inch	cabbage

place for some time before drying and falling out. The circular holes give the plant a “shot-gun” appearance. Heavy feeding on young plants may reduce yields or even kill plants in severe cases.

Crops grown for their foliage such as kale, bok choy, spinach or mustards may be rendered unmarketable by flea beetle damage. Larvae feed on the roots and tubers of susceptible plants but don’t often cause economic damage. Larvae of the horseradish flea beetle also mine the stem and leaf veins. In addition, many are vectors of plant pathogens.

Life cycle

Flea beetles overwinter as adults in the soil or beneath plant debris. They become active in early spring when temperatures reach 50°F, and begin feeding on weeds or early-planted crops. Adults lay eggs in the soil at the base of host plants in May. Eggs hatch in 7–14 days and larvae feed on various plant parts until fully grown. They pupate in earthen cells for 11–13 days before emerging as adults. Adult flea beetles are particularly active on warm, calm, sunny days. Depending upon the species, there may be 1–3 generations per year.



Control

Cultural: Adjusting planting dates to avoid damage caused by flea beetles may be useful in some situations. Enclosing seed beds with floating row covers protects plants from egg-laying adults. Removing alternate weed hosts, deep plowing of crop residues in the spring and crop rotation will help reduce populations.

Chemical: Chemical control is recommended when flea beetle populations exceed threshold levels, particularly early in the season. Commercial fields should be scouted for adults with an insect sweep net. Because flea beetles can move into a field

quickly, newly planted fields should be scouted for insects or damage every 1–2 days while plants are small and unable to withstand much damage. Soil-applied insecticides at planting will provide season-long control. Foliar insecticides provide quick control of large populations of adult flea beetles. When selecting foliar insecticides, choose chemicals that will not disrupt the natural enemies of other pests such as lepidoptera on cole crops. Insecticides with a short residual life are recommended. Refer to the UW-Extension publication *Commercial Vegetable Production in Wisconsin* (A3422) for a list of registered insecticides.

Established control thresholds for various crops

Crop	Threshold
Beets	Treat when beetles cause stand reduction on small plants
Cole crops	Undetermined
Eggplant	<3 inches = 2 beetles/plant
	3–6 inches = 4 beetles/plant
	>6 inches = 8 beetles/plant
Horseradish	Treat only if beetles are found in high numbers early in the season
Potato	>2 beetles/sweep
Tomato	>2 beetles/plant

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