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University of Wisconsin Garden Facts

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Extension
UNIVERSITY OF WISCONSIN-MADISON

Provided to you by:

Flea Beetles

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Flea beetles are early season pests commonly found on cole crops/crucifers (e.g., broccoli, Brussels sprouts, cabbage, cauliflower, horseradish, kale, kohlrabi, mustards, radish), as well as on other vegetables (e.g., spinach, beets, beans, potatoes, eggplant). There are several species of flea beetles that can cause problems and their common names typically reflect the host(s) on which they feed. For example, the crucifer flea beetle typically feeds on cole crops/crucifers, while the eggplant flea beetle typically feeds on eggplant. The table below lists some of the common flea beetles found in Wisconsin.

Appearance: Flea beetle adults are tiny ($^1/_{16}$ to $^1/_4$ inches long) and can be gold, dark brown, or black. Some flea beetles have spots or stripes. Flea beetles have large hind legs and jump when disturbed. Adults are particularly active on calm, warm, sunny days. Flea beetle larvae range in size from less than $^1/_{16}$ inch to approximately $^3/_{16}$ inch in length, are worm-like, and white with a brown head.

Common Name	Scientific Name	Description	Host Plant(s)
Crucifer flea beetle	*Phyllotreta cruciferae*	Greenish or bluish-black, $^1/_8$ inch long	Cabbage and other crucifers including horseradish
Eggplant flea beetle	*Epitris fuscula*	Black, $^1/_{16}$ inch long	Eggplant
Horseradish flea beetle	*Phyllotreta armoraciae*	Black with yellow stripes, $^1/_8$ inch long	Horseradish and other crucifers
Pale-striped flea beetle	*Systena blanda*	Dark brown with two broad white stripes down the back, between $^1/_8$ and $^1/_4$ inch long	Bean, beet, eggplant, lettuce, melon, pea, pepper, pumpkin, radish
Potato flea beetle	*Epitrix cucumeris*	Dull black, $^1/_{16}$ inch long	Potatoes, tomato, eggplant, pepper
Spinach flea beetle	*Disonycha xanthomeles*	Greenish-black with a yellow thorax, between $^1/_8$ and $^1/_4$ inch	Spinach and beets
Striped flea beetle	*Phyllotreta striolata*	Black with two crooked yellow strips running down its back, $^1/_{12}$ inch	Cabbage

Symptoms and Effects: The most serious damage due to flea beetles is caused by adults feeding on leaves of young plants, typically on the undersides. Feeding appears as many tiny holes that may or may not penetrate the leaf. Often this damage is described as speckled or looking as if the leaves had been peppered by a shotgun. Recently emerged plants are most vulnerable to feeding damage and can even be killed by a heavy flea beetle infestation. Older plants are often able to withstand flea beetle damage. Crops grown for their foliage such as kale and spinach may be unmarketable if damage is extensive. Root feeding by flea beetle larvae typically causes minimal damage. Many flea beetles species can lead to additional damage by transmitting plant disease-causing organisms.

Life Cycle: Flea beetles overwinter as adults in the soil or under 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

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soil at the base of host plants in May. Eggs hatch in seven to 14 days and larvae feed on various plant parts until fully grown. Larvae pupate in earthen cells for 11 to 13 days before emerging as adults. Depending upon the species, there may be one to three generations per year.

Flea beetle damage on Swiss chard.

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

Scouting: Monitor flea beetle populations using yellow sticky traps. The number of beetles found in traps corresponds to the amount of feeding damage occurring nearby. Sweep nets can be used to monitor for flea beetles in some crops (e.g., potatoes). Scouting for damage should occur every one to two days in newly planted fields, because flea beetles can quickly become a problem for young plants.

Control:

Cultural: Because flea beetles overwinter near fields where vegetables are grown, planting after adults emerge or rotating to non-susceptible vegetables (or other crops) can help minimize flea beetle damage. When growing susceptible crops, floating row covers can prevent adults from feeding on leaves and laying eggs around plants. If you decide to use row covers, be sure to set them up just before the crop emerges or immediately after transplanting. Water deters adult flea beetles, and watering at mid-day can reduce their feeding.

Biological: Products containing nematodes that feed on flea beetle eggs, larvae, and pupae are available.

Chemical: Chemical treatments are recommended when flea beetle populations exceed threshold levels (see the table above), particularly early in the season. Soil-applied insecticides will provide season-long control. Foliar insecticides can provide quick control, but may also disrupt natural enemies of other pests of cole crops. Reduced-risk products should always be considered. Consult UW-Extension publication A33422 (*Commercial Vegetable Production in Wisconsin*) for an updated list of registered insecticides for flea beetle control.

For more information on flea beetles: See UW-Extension Bulletin A3422 (*Commercial Vegetable Production in Wisconsin*), or contact your county Extension agent.

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A complete inventory of University of Wisconsin Garden Facts is available at the University of Wisconsin-Madison Division of Extension Plant Disease Diagnostics Clinic website: https://pddc.wisc.edu.