

Flea beetles

GWF334

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These tiny beetles are a particular pest of cabbage-family crops. They disfigure plants and can kill seedlings by nibbling leaves. They also spread virus diseases.

Q What are they?

A Flea beetles are tiny beetles 2-3mm long, which jump like fleas when disturbed. Although they used to be called turnip flies, they are actually true beetles. It is hard to see them in the soil and among vegetation. The larvae feed on the roots of plants, but the real damage is done by adults attacking the leaves. They are a pest of cabbage-family vegetables, including Brussels sprouts, cabbages, calabrese, cauliflowers, Chinese cabbage and other oriental greens like pak choi, kale, sprouting broccoli, kohlrabi, swedes and turnips. Closely related crops like radishes and rocket or ornamentals such as alyssum, stocks and wallflowers are also vulnerable. Occasionally, certain species will attack other plants, such as irises and anemones. Cabbage-family weeds such as shepherd's purse and hairy bittercress also support flea beetles.

Q Is there more than one kind of flea beetle?

A There are at least six kinds that feed on cabbage-family plants. All do similar damage and are controlled in the same way. The cabbage-stem flea beetle, which tunnels into the stem of

cabbages during the winter, is dealt with in the cabbage root fly factsheet (see *Gardening Which?* factsheet GWF329), as the two are easily confused. The four other common flea beetles are:

Black flea beetle (*Phyllotreta atra*). Its colour makes it difficult to spot against dark soil.

Large striped flea beetle (*Phyllotreta nemorum*). This is black with two slightly irregular yellow stripes down its back. At 3mm it is slightly larger than the small striped flea beetle.

Small striped flea beetle or turnip flea beetle (*Phyllotreta undulata*). Similar to but smaller than the large flea beetle, it has a pair of wide yellow stripes down its back.

Mangold flea beetle (*Chaetocnema concinna*) is a glossy, bronzed black with indented wing cases. It attacks beetroot, spinach and spinach beet.

Q How do I recognise their damage?

A The adult beetles eat small circular holes in the leaves and stems of seedlings. The affected parts become covered in tiny round scars. The attacks start when the shoot appears above the ground, and continue even when

the plants mature. Larger plants usually shrug off attacks as long as they are growing well. Seedlings, however, can be severely checked or even killed.

You have to have sharp eyes to see the adults. Often you will only notice them when they spring away as you pass by. In severe attacks, you may hear rustling as large numbers move.

The larvae also cause damage as these feed on the roots of plants. Fortunately, this is usually much less serious than the damage done by the adults to the plant above ground.

Q What diseases do flea beetles spread?

A When they feed, flea beetles can carry turnip rosette virus, turnip yellow mosaic virus and turnip crinkle virus from plant to plant. But the virus transmission is usually much less important than the physical damage to seedlings.

Q When should I expect to see them?

A Typically, attacks start in April and May. Fine, sunny weather, when the soil warms up, is the most likely time. Look out for the adults' feeding marks on emerging seedlings. The adults will have overwintered in hedges,

rubbish heaps, in mulch and under tree bark. Gardens are ideal winter habitats.

In May and June, eggs are laid around host plants. Large striped flea-beetle larvae crawl up into the stems and tunnel into the leaves, creating 'mines'. Some flea-beetle larvae attack roots.

It takes about a month for the larvae to reach full size and pupate. About three weeks later a new generation of adults emerges; these survive to lay eggs next spring and summer. This new generation causes damage to young wallflowers and late-sown cabbage-family vegetables, such as Chinese cabbage, in late summer.

Q Are they worse in some years than others?

A Flea beetles were once extremely common and serious pests. They are much less severe now, though the reason for this is unknown. Severe attacks were seen on brassicas sown late in the season and especially on wallflowers.

Large numbers build up in oilseed-rape crops. When these are cut, the beetles migrate downwind, and if they end up in gardens, they can do much damage in late summer. They thrive in sheltered sites with plenty of cover.

Q Could I mistake them for anything else?

A Larvae around roots are more likely to be cabbage root fly. Birds and caterpillars damage leaves but don't make the characteristic puncture marks. Mottled foliage may be the result of thrips (thunder flies).

Q Can affected plants recover?

A If you act quickly, you can rescue the plants. Watering, adding 70g a sq m of nitrogen-rich fertiliser, firming the soil around the plants and covering plants with fleece to boost their growth in spring, will all help them recover from the damage.

Q Can they be sprayed?

A Sprays and powders containing rotenone or pyrethrins can help. Spray, or better still, dust the emerging seedlings. Repeat the treatment every week if the problem persists.

For a totally pesticide-free option, you can use flea-beetle traps. These are rectangles of cardboard, coated with grease. Attach these to a broom handle and move it quickly along the rows of plants. As the flea beetles jump, they stick to the grease.

Q Can they be avoided?

A You can discourage attacks by clearing away as much shelter as possible and keeping down cabbage-family weeds, like shepherd's purse.

Plants raised indoors will not usually be affected. When they are planted out in June and July, they will be too big to be damaged badly and the worst of the flea-beetle attacks will be over by then anyway.

Plants raised in moist, well-manured, fertile soils with a fine tilth or texture, will not be as badly damaged as plants raised in poorer soils.

Raising cabbage family plants in seed beds protected by fleece or insect-proof mesh will exclude flea beetles, if put on soon after sowing. They will also keep the seedlings free of cabbage root fly,

cabbage aphid and other pests. Fleece captures too much warmth for summer sowings. To avoid cooking your plants, use the better-ventilated insect-proof mesh in summer.

Late sowing in June can avoid attacks, but this will often lead to the plants failing to crop well. Sowing swedes, turnips, Chinese cabbage and other oriental vegetables at this time will result in good crops and little flea-beetle damage.

The final sowings in July and August of turnips and Chinese cabbage, for example, can be protected by watering the seed bed thoroughly before sowing. When the excess water has drained away, sow, and the seedlings should grow fast enough to resist the flea-beetle damage. Alternatively, raise the plants in pots or cell trays indoors.

Q Is it safe to replant in a spot where beetles have recently attacked?

A There should be no problem, as long as you protect the emerging seedlings with an insecticide dust or spray. Alternatively, planting out seedlings raised in pots or cell trays should be safe.

Chemical information

Brand names of garden products change frequently, whereas the active chemical ingredient in them usually doesn't. Because of this, we list the active chemical ingredient recommended for a given problem, rather than the brand name of the product. The only exception is when we have tested a brand and chosen it as a **Best Buy**. If you need any more information on chemicals, please ask for our factsheet GWF281.