

Bean-seed flies

GWF235

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The maggots of this pest attack seedlings, especially those with large seeds. Introduced by accident from America, it is now established in this country.

Q What are bean-seed flies?

A They are two species of fly which are common, but usually occur in local hot spots, so many areas will escape them. Bean-seed flies (*Delia platura* and *Delia floriga*) are mainly scavengers but often attack vegetables and a few ornamental plants. Unfortunately, they are common where there is lots of organic matter in the soil, which is what all gardeners aim for.

Q How do I recognise them?

A The adult is a small (5mm) grey fly which is very hard to spot and identify. The maggot is the cause of garden problems. It is white and about 7mm long, very like the fisherman's maggot, but smaller. Look for them in affected plants inside the seeds, stems or seed leaves.

Q What plants do they attack?

A As well as runner and French beans, courgettes, marrows, squashes and pumpkins are commonly attacked.

The bean-seed fly gets inside the young plants or seeds and the germinating seeds may not reach the surface. Where seedlings do emerge, the fleshy seed leaves (cotyledons) and tips are damaged by holes and surface marks as well by tunnels into the seeds and stems. Loss of the

growing tip leads to distorted growth called snake head, which describes the look of the emerging plants. In severe cases, the plants die. However, even minor attacks cause a slowing or halt of growth, reducing yields and delaying harvest. Attacks can open the way to rots and, if the weather is dry, the plants can wilt.

Occasionally this pest will attack beetroot, broad beans, bulbs (eg freesia and gladioli), cabbage family crops (especially cauliflowers and radish), lettuce, potatoes (if cut-up seed is used), sweetcorn and spinach.

Onion damage is at its worst in late summer when overwintered onions are sown. This is normally around the third week in August. The seedlings can often fail to emerge, and those that do germinate often fall victim while they are still in the 'bent' or 'crook' stages, soon after emergence. Often, after feeding on one seedling or young plant, the maggot will travel to the next, so a series of plants in the row will be killed. Older plants wilt and collapse very quickly when attacked by bean-seed fly.

Q Could I confuse them with anything else?

A The damage caused by the onion fly is identical to that caused by bean seed flies. Fortunately, it is dealt with in the

same way as the bean-seed fly. Bean-seed fly typically attacks a week or two before onion fly.

Millepedes often take up residence where bean-seed flies have been and continue the damage - so control the bean-seed fly and the millepedes are unlikely to be a problem.

Q When should I expect them?

A Bean-seed flies spend the winter in the soil as pupae. In late spring the adults hatch and the female goes on a six-week egg-laying spree. She will lay eggs in the soil, especially where it has been freshly disturbed, by hoeing for example. Freshly planted courgettes, marrows, squashes and pumpkins are particularly at risk, as the bean-seed fly maggots can get into the rootball, especially if the compost is a soil-free kind, and do severe damage to the roots.

The eggs hatch in a few days and the maggots enter the seed, stem or leaves of vulnerable plants. After 1-3 weeks they are fully grown and pupate in the soil. After 2-3 weeks as pupae, the adults are on the wing again and the cycle begins anew.

As many as four generations may occur during the summer if the conditions are suitable. These generations overlap so you can expect attacks at any time. However, the flies seem to prefer

to feed on dead plant material, and usually only the first generation is troublesome to growing plants. Late-sown onions are the exception to this.

Q Can the damage be avoided?

A Getting plants through the vulnerable germination stage as quickly as possible will limit losses. Ideally, you should prepare a firm, moist seedbed in advance, because bean-seed fly favours recently cultivated soil. Make the seed bed at least a month before sowing, and remove weeds with a contact weedkiller, hand-weeding carefully, or keeping the seed bed covered with black polythene or old carpet to avoid weeds altogether. Not only will bean-seed fly be discouraged, but the need for weeding will be reduced. Nevertheless, if attacks in the past have been heavy, preparing a seed bed in this way is unlikely to be enough on its own to protect the plants fully.

Also gardeners in wet districts or those with clay soils may find this early preparation impossible. If this is the case, go for transplants raised in pots or cell trays indoors or in a coldframe.

Avoid incorporating organic matter shortly before sowing or planting. Put old plant material on the compost heap and dig in manure and compost during the winter.

Q Are there any effective sprays?

A There are no insecticides available to gardeners.

Q What can organic gardeners use?

A Go for coverings of fleece and mesh. Not only will bean-seed fly be controlled, but greenfly, blackfly and onion fly will also be excluded. Both seeds and transplants will benefit from a fleece covering. This will boost growth by warming and sheltering the seedlings. Make sure it is free of holes and well-secured around the edges by burying them at least 5cm deep to exclude the bean-seed fly females and they will have to lay their eggs elsewhere.

The downside is that you will have to remove the fleece to weed, and replace it quickly before any flies can get in.

As fleece is very efficient at trapping warmth, it might cook seedlings after late May. The better-ventilated insect-proof mesh is a cooler choice to protect late sowings.

Q Will crop rotation help?

A You should always practice rotation where onions and beans are grown as there are several soil-borne diseases and nematodes that can attack these vegetables.

However, since these flies are so mobile it is unlikely that rotation alone will control them; they can fly to other crops within a wide radius.

Q Is companion planting effective?

A We know of no cases where companion planting has been effective.

Q What should I do with affected plants?

A They should be lifted and burnt or binned to prevent the larvae adding to the next season's problems.

Q Can I reduce the risk to next year's crop?

A There is some evidence that digging in the autumn, rather than the spring, will expose the pupae to the pest's natural enemies and the effects of the weather.

Q Are there any resistant varieties?

A We know of no resistant kinds.

Q Are there any biological controls?

A There are some trials which involve putting the seeds in a freezer to kill the larvae. This has had some good results, but is still in the trial stages.

Suppliers of insect-proof mesh

Agralan
01285 860015
www.agralan.co.uk

DT Brown
0845 1662275
www.dtbrownseeds.co.uk

Ferndale Lodge
0870 444 1342
www.ferndale-lodge.co.uk

The Organic Gardening Catalogue
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