

Onion fly

The onion fly attacks shallots, leeks, garlic and all types of onion. Onions sown in August for overwintering are particularly susceptible to this fly.

Q What is onion fly?

A The onion fly (*Delia antiqua*) is a widespread pest of onions and related crops. It attacks bulb onions, salad onions, shallots, leeks and garlic, as well as the closely related ornamental alliums. This pest is more common in some seasons than in others, but when severe attacks occur it can make growing these crops impossible.

Q What do affected plants look like?

A The onion fly lays its eggs near the base of the plant. The larvae feed inside the bulb or lower stem just above the bulb of seedlings. When they have finished with one seedling they move on to an adjacent one, so seedlings tend to be killed in patches. In older plants they feed in the bulb, and work upwards. Eventually, the lower part of the bulb is so damaged that the resulting pale, wilting foliage is easily pulled off. The outer leaves tend to fall to the ground, while the inner leaves remain vertical, but are soft and no longer crisp.

When you look closely at the bulb it is rotting, smelly and can have as many as 30 maggots in it. Even lightly affected plants are unfit for harvesting.

Q When do attacks develop?

A The flies overwinter as pupae in the soil. They are on the wing in May, and lay their eggs in the young leaves or in the soil around the host plant. The eggs hatch after three days and larvae enter susceptible plants by tunnelling into the base. It takes three weeks for the maggot-like larvae to reach full size, when they are 8mm long. Then they burrow about 75mm into the soil and pupate. The chestnut-brown pupae hatch into the second generation of flies about 17 days later. There are up to two more generations in July and, to a much lesser extent, in August and September. The last generation overwinters in the soil as pupae.

Onions sown in August for overwintering are especially vulnerable to later generations.

Q How do I recognise them?

A The flies are very similar to houseflies. In fact, telling them apart is a job for the expert.

Q Can I confuse them with anything else?

A White rot produces similar symptoms. This disease destroys roots, causing the plant's foliage to yellow and die. When you pull a plant affected with white rot,

however, there are usually no maggots. Instead there is a whitish mould at the base where the dead roots are. In the mould, or nearby, are black, pinhead-sized spheres. These are the sclerotia, or resting bodies, of the white rot.

Q What early-warning signs should I look for?

A Typically, the first sign of onion-fly attack is that the leaves of established plants begin to yellow. Affected seedlings tend to die in patches. These patches can spread along the row.

Q Can affected plants be saved?

A No, but where seedlings are affected, removing the attacked ones along with nearby soil may stop the pest spreading.

Q Can I re-sow affected sites?

A If there is no other land available you could re-sow or replant, as long as you are sure you have removed the infested plants before the maggots pupate. It is safest to re-sow or plant elsewhere, protecting the new crop with horticultural fleece or insect-proof mesh.

Q Will crop rotation help?

A You should always practice crop rotation where onions and their relatives are grown, as there are several soil-borne diseases and nematodes that can attack these crops. However, as onion flies are so mobile - they can seek out and fly to crops within a wide radius - it is unlikely that rotations will control them.

Q What preventative measures can I take?

A Where onion flies are a recurring problem, on allotments for example, covering with fleece or insect-proof mesh to protect against the early generation is worthwhile. Similarly, covering August-sown onions with insect-proof mesh will protect them. Using fleece after the end of May can lead to the plants getting too hot. Mesh, which is better ventilated, is less likely to cook the plants.

Q Is companion planting effective?

A We know of no suggestions for companion plants.

Q Are there any resistant varieties?

A We know of no resistant varieties.

Q Are there any biological controls?

A There are at least two significant natural parasites and predators of the onion fly - a parasitic wasp and the rove beetle. These may occur in sufficient numbers to give some control, but they are not available to buy.

Q What should I do with affected plants?

A They should be lifted and consigned to the dustbin or burned, to prevent the larvae overwintering and adding to the following 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.

Suppliers of insect-proof mesh and fleece

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