Narcissus bulb fly

GWF302
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Daffodils that fail to come up or produce only a few leaves may be under attack from narcissus bulb fly. Many other bulbs and some vegetables are also vulnerable.

Q **What is narcissus bulb fly?**

A There are three species of this pest: the large narcissus fly (*Merodon equestris*) and two species of small narcissus fly (*Eumerus strigatus* and *E. tuberculatus*). However, it is the large narcissus fly which causes the most problems as it can attack healthy bulbs, whereas small narcissus flies can only attack bulbs already suffering from physical damage or infection.

Q **What do they look like?**

A The large narcissus fly is about 13mm long, black, buff or orange, often with bands. It looks rather like a small bee, although it is a true fly. Small narcissus flies are half the size of the large ones and shiny black.

Q **Can I mistake narcissus bulb flies for anything else?**

A The large narcissus-fly adults look much like many harmless flies and hoverflies, but you can recognise them by the way they buzz and fly round bulbs. The small narcissus flies are not very conspicuous and are hard to spot.

Maggots in bulbs are most likely to be narcissus flies, but sometimes other fly larvae will feed on rotting bulbs. Stunted and distorted foliage can also be produced by eelworms or mites. In this case no maggots will be seen.

Q **Is narcissus the only plant this pest will attack?**

A The large narcissus fly primarily attacks narcissus, but it can attack other bulbs in the same family (*Amaryllidaceae*) such as hippeastrum, hyacinth, nerine, snowdrop and vallota and also some species in other families, such as iris and scilla. Small narcissus flies go for narcissus, hyacinth, iris, lily, carrots, onions, potatoes and parsnips.

Q **When is damage most likely to occur?**

A The large narcissus fly lays a single egg at the neck of each bulb and can infect up to 100 bulbs. Bright, still days outdoors, with temperatures above 18°C, and sunny days in greenhouses favour the fly, and most egg-laying occurs under these conditions. The egg-laying period stretches from early May until June. The egg hatches and the larva crawls to the base of the bulb where it tunnels inside. Once inside, it feeds on the fleshy leaves near the growing point. Eventually, a large cavity is produced. In spring, the larva moves into the soil where it pupates. Five or six weeks later, the adult emerges and the cycle begins again.

The small narcissus fly is also active in spring. It lays groups of about ten eggs near damaged or infected bulbs. The newly hatched larvae get into the bulb through damaged areas or through the tip. They eventually consume the bulb completely. Some pupate in July, producing a second generation which infests more bulbs, while others stay nearby and pupate in the spring.

Q **What symptoms should I look out for?**

A Bulbs that do not produce any leaves or produce only a few wispy leaves may be infected with large narcissus fly. Sometimes yellow, distorted leaves are produced. If no other obvious condition can be attributed to the poor growth, it will be necessary to dig up the bulb and examine the base. If the bulb has been infected by the large narcissus bulb fly, there will be a small, rusty-coloured hole in the basal plate. Further examination should reveal a hollow bulb, filled with pulpy tissue. If the bulb is inspected before March when the larva leaves the bulb to pupate, then a single maggot will also be visible.

Bulbs infested by large narcissus fly can be recognised, when you lift them in late summer, by the entry hole in the base. This can be hard to find, however. The maggot continues to feed in the bulb in storage. It will become softer than sound bulbs, especially at the top.

Small narcissus flies only feed on bulbs already damaged by other causes. When you lift sickly bulbs, you will often find the rotting tissue filled with several larvae.

Q How can I reduce the likelihood of attack?

A As the foliage of healthy bulbs pushes through the soil surface, the soil becomes disturbed. Narcissus flies lay their eggs between May and June; they are less able to do so on the neck of the bulb if this soil is firmed down as the leaves begin to die off. When dead leaves are removed, rake over the ground to fill any holes left in the soil. Outdoors, susceptible or valuable bulbs can be covered with horticultural fleece or insect-proof mesh during May to prevent female flies from laying their eggs on the bulbs. Make sure they are not already infested or you will be trapping the flies with the bulbs.

Always lift and inspect suspect bulbs, discarding any diseased or damaged ones. When you lift bulbs, don't leave them outdoors, as they are vulnerable to attack by small narcissus flies at this stage. Instead, move them into a shed, or cover with a cloth until it is time to replant them.

Q What should I do if I find infected bulbs?

A All infected bulbs should be dug up as soon as possible and burnt or binned. If in doubt, carefully lift suspect bulbs and examine them thoroughly. Healthy bulbs can be replanted, and you can encourage better growth by feeding with a general-purpose fertiliser as the leaves appear. Regular watering during dry spells will also help.

Q If I buy new bulbs, how do I know they are not infected?

A Always buy bulbs from a reputable supplier. To examine bulbs for signs of attack, press the neck of the bulb. Infected bulbs will be soft, especially around
the neck.

Q Are there any chemicals that would prevent attack?

A There are no chemicals available to stop this pest.