

Onion downy mildew

GWF342

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This disease affects onion-family plants, including some ornamental species. It thrives in mild, humid conditions and can remain in the soil for several years.

Q What is downy mildew?

A A leaf disease of the onion family that can get inside the bulbs later. Onion downy mildew (*Peronospora destructor*) infects bulb onions, salad onions, shallots, perennial onions and some ornamental onions.

Q How do I recognise it?

A At first, leaf tips go yellow, often as spots and patches. Next, a fine whitish down develops on the infected patches. They soon become a dull brown/purple, when the weather is humid enough. When this happens it is producing spores that will spread to other plants. All the foliage is attacked and eventually destroyed. When conditions are dry the spots don't develop into the purple stage.

Bulbs from infected crops will develop problems if they are stored. Watch out for soft, shrivelled ones and ones that sprout early. Check your bulbs every week or two for these signs. It seems to be especially common when there are mild winters and where many overwintered onion crops are grown.

Q What could I mistake it for?

A Other leaf diseases look similar to the early stages of downy

mildew. Leaf rot speckles the leaves with pale spots, but does not turn into the devastating downy stage. Leaf blotch produces patches of concentric rings of dead leaf spots, rather than spreading downy areas.

Neck rot of stored bulbs differs from downy mildew; bulbs affected by the former will have softness around the necks, black sclerotia and dry mould associated with the rotting areas.

Q When should I expect downy mildew?

A It needs wet weather to moisten foliage for 2-4 hours and it also needs temperatures of 10-12°C in order for the spores to 'germinate' and infect plants. Overwintered plants are most at risk from early attacks.

Q What can I do about it?

A Onion downy mildew persists in the soil for several years. If possible, have a rotation that avoids growing onions in the same place for at least four years. Always clean up infected material remaining after a crop. Ideally, get rid of it before any overwintered onions come up. Keep an eye on tree onions and other perennial alliums - if they appear to be carrying the disease, consider replacing them with clean stock. Bear in mind, though,

that the disease can spread on the breeze from outside your plot, so there is a limit to how easy it is to avoid in gardens.

It thrives where the air is humid, so it helps to space plants widely apart. About 30cm between rows should aid airflow. Also, keep weeds under control.

Avoid growing plants in low-lying sheltered places or badly drained sites. Improve drainage if possible. Raised beds are often a good solution for heavy soils.

Watch out for infected plants and remove them as soon as they are seen. This can be especially useful in preventing overwintered onions spreading the disease to the new crop.

Q Can downy mildew be sprayed?

A Only Dithane is likely to be useful to gardeners. It is a preventative fungicide which has to be applied thoroughly to all the foliage, and repeated every 14 days to protect new growth and where it has been washed off. The shiny onion leaves can be difficult to wet. Adding a little wetting agent, such as washing-up detergent, may help the fungicide cover the foliage more evenly. Apply a fine spray, just up to the point where it begins to run off. If it actually runs off, the foliage is likely to be poorly

protected. Plants already attacked cannot be cured.

Q What can organic growers do?

A Copper fungicides may give some protection, but no products currently have approval for use against downy mildew.

Q Can onion downy mildew be avoided?

A Don't plant soft onion sets or shallots - they could be carrying the disease. Avoid growing overwintered onions if your crops suffer regularly. Instead, use a

quick-maturing onion set, like 'Jet Set', or raise plants indoors in January or February to put out in May for your early crops.

Going easy on nitrogen fertilisers will discourage the disease. Aim to supply about 100g a sq m of growmore on poor soils, or about half this on rich or recently manured soil.

Q What do I do with infected plants?

A Use up bulbs from infected crops as soon as possible. Bin or burn the rest.

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