

Powdery mildew

GWF473

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One of the most common plant problems, powdery mildew is best controlled by combining preventative measures with fungicide treatment.

Q What is powdery mildew?

A A group of related species of fungus causes powdery mildew on different plants. All plants can be affected, and it is particularly prevalent in late summer. A white, powdery covering to leaves, stems, flowers or fruit gives the disease its common name. Sometimes, though, the first symptoms you notice may be yellow or purple discolouration, falling leaves or general poor growth and distortion. Powdery mildew on one type of plant won't generally spread to other unrelated plants.

Q How do I spot it?

A The first, barely visible, signs are yellow spots or tiny blisters on the leaves or flowers. Beneath these, the infection develops and white patches start appearing on leaves, stems, flowers and fruit. This fine, powdery covering is actually the fungal mycelium or strands throwing out countless spores. Later, whole leaves are engulfed and much foliage is lost. Leaves can be distorted or discoloured, and fruit may crack and split.

Q Which types of powdery mildew am I likely to see in my garden?

A Here are some of the

commonest and most damaging species, with tips on identification and individual treatment.

Apple powdery mildew

(*Podosphaera leucotricha*) Young shoots turn powdery white, older leaves show distortion and white patches. See *Gardening Which?* factsheet GWF205

Aster powdery mildew (*Erysiphe cichoracearum*) Upper leaf surfaces turn powdery white, followed by yellowing and foliage loss. It is difficult to treat; keep plants well-watered and choose resistant species such as *Aster x frikartii*.

Begonia powdery mildew

(*Microsphaera begoniae*) Ruins indoor plants, with spots appearing on infected leaves that turn brown and dry or yellow and soggy. Control can be difficult. Remove affected leaves, keep roots moist and improve air circulation.

Brassica powdery mildew

(*Erysiphe cruciferarum*) Causes a white covering on leaves and stems, especially of swedes, turnips and Brussels sprouts where the buttons are spoilt. Water in dry spells and clear up crop debris.

Cucumber powdery mildew

(*Erysiphe cichoracearum* and *Sphaerotheca fuliginea*) Starts off as round white spots on the upper

surface of the foliage, enlarging to cover the whole leaf, which withers and dies. It can also attack courgettes, squashes and pumpkins outdoors. Improve ventilation under glass, and clear up crop debris. Plant more resistant varieties.

Gooseberry powdery mildew

(*Sphaerotheca mors-uvae*) Turns shoots white and fruit brown and felty. See *Gardening Which?* factsheet GWF211

Grape powdery mildew

(*Uncinula necator* previously know as *Oidium*) Starts on the underside of leaves, then covers foliage and attacks bunches of grapes both indoors and outside. For prevention, thin out growth in winter and ventilate grapes grown under glass.

Pea powdery mildew

(*Erysiphe pisi*) Affects late-sown peas, covering foliage and pods with moulds. Usually only occurs at the end of the season so has little effect on cropping. Keep plants well-watered.

Rhododendron powdery mildew

(*Erysiphe* species) Yellow blotches on upper surfaces with matching light-brown, felty ones below. Keep plants well-watered and mulched. Pick off severely affected leaves and avoid the most susceptible varieties.

Rose powdery mildew

(*Sphaerotheca pannosa*) White, powdery deposits on young stems, buds and leaves, followed by stunting and dieback with foliage loss. See *Gardening Which?* factsheet GWF475.

Strawberry powdery mildew

(*Sphaerotheca macularis*) Purple areas form on upper leaf surfaces with the tell-tale white covering beneath the leaves. Flowers and fruit can also be affected. Choose resistant varieties such as 'Cambridge Late Pine' and 'Red Gauntlet'. Avoid 'Aromel' and 'Elsanta' which are very susceptible. Cut off and burn diseased foliage at the end of the season. It can also affect raspberries, blackberries and loganberries.

Tomato powdery mildew

(*Leveillula taurica*) Occurs mainly on greenhouse crops. It starts as pale, light-grey patches on the upper leaf surface. These are followed by the powdery stage with a yellow surrounding area. See *Gardening Which?* factsheet GWF345.

Q How do they spread?

A Mildew can be introduced with new plants; low levels of infection may show no symptoms but develop when conditions are favourable. However, the spores are also spread far and wide by the wind.

Q How can I prevent the disease?

A Lush growth, dry roots, cool temperatures, damp air, poor air circulation and too much shade all encourage powdery mildew. Avoid giving susceptible plants too much nitrogen-rich fertiliser (either organic or inorganic) which encourages lush growth.

Ensure plants, especially those in containers or growing close to walls, fences or trees, have adequate water. Shade the roots of climbers such as honeysuckle and clematis so their roots stay moist. Incorporating organic matter in autumn and using mulches in spring will help. Avoid overcrowding and reduce competition by keeping plants further apart, or thinning out crowded growth. Under glass, make sure there is a good flow of air at all times.

If your plants regularly suffer from mildew, you can spray even before the disease takes hold. But trying to control an outbreak with fungicides alone is unlikely to be effective. Our Best Buy treatment for ornamental plants is Scotts Rose Clear Gun. For edible plants, however, sulphur-based products remain the only option but aren't very effective. Also gooseberries and grapes, for example, can be damaged by sulphur.

There is also some research from South America, Australia and Britain that shows that milk solution (of 1 part milk to 9 parts water) sprayed on some crops, especially cucumbers, may also help prevent mildew.

Q How do I treat affected plants?

A First remove the worst-affected parts. If herbaceous plants such as pulmonaria develop mildew after flowering, shear off all the leaves and water well. A new flush of healthy leaves should develop. With woody plants, remove the worst affected leaves and shoots. Do this slowly and carefully, putting the diseased material straight into a container, to avoid shaking spores on to healthy shoots. With annuals you may have to destroy whole plants to prevent the disease spreading.

Secondly, improve the plant's growing conditions to reduce the factors that encourage mildew (see above). Thirdly, spray with a suitable fungicide.

Q What should I do with infected plant debris?

A The resting spores of some types of powdery mildew overwinter in plant debris, so clear infected plants away. With strawberries, for example, shear or burn off the foliage in late summer. Other spores overwinter in infected buds of perennial plants. Cutting out sick-looking material at the end of the summer and in autumn may help reduce the level of infection the following year. After getting rid of infected material in the greenhouse, clean up thoroughly using a disinfectant.

Q Are there any biological controls?

A In the United States some types of powdery mildew are controlled by antagonistic fungi that do not harm the crop, but these aren't used in Britain. We will keep a watch for new developments like this and will let you know if any become available in the UK.

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.