

Rust disease on ornamentals

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Several popular garden and greenhouse plants are susceptible to rust, a common fungal disease that can damage large areas of leaf. It can sometimes kill plants.

Q What is rust?

A Rust is a common fungal disease, affecting a wide range of garden plants. Fortunately, different types of rust fungus attack different types of plant; rose rust, for example, will not spread to fuchsias.

Q Which plants does rust disease attack?

A Many plants, from birch trees to succulents, are affected by their own specific rust diseases. Most are recognisable by the appearance of leaf spots which are characterised by being small, powdery and much more obvious on the underside of the leaf than the surface. The spots are usually yellow, orange, brown or black. Rusts have a complex life cycle, producing different spore types at different times of the year. Up to four different spore types may be produced by a rust fungus during its development. In spring, aeciospores are produced, in cup-shaped bodies and are the most easily seen and recognisable of rust symptoms. Urediniospores (summer spores) are typically light-coloured and spread the rust disease rapidly in the summer. Rusts usually spend the winter as teliospores which need a period of dormancy before germination.

Some rusts overwinter as mycelium buried within the tissues of a perennial host plant. Basidiospores are produced in

spring from germinating teliospores and start the initial infection. Once the plant is infected, aeciospores develop. Luckily, only a handful of rusts are both common and serious.

Q Which rusts are harmful?

A In the garden you are most likely to come across rose, antirrhinum, hypericum, hollyhock, mahonia, periwinkle and iris rusts. Several greenhouse plants are also susceptible - notably fuchsias, chrysanthemums and pelargoniums.

Q How do I recognise rust?

A Each type of rust has its own specific symptoms:

Rose rust (*Phragmidium tuberculatum*) first appears in spring as bright-orange pustules on leafstalks and branches, the undersides of leaves and any remaining fruits. More familiar is the development of small, raised, orange spots on the underside of leaves in late summer. You may also see small yellow specks on the upper surface. As the leaves die, the spots turn dark-brown. These dark teliospores survive the winter on fallen leaves and germinate the following spring, producing basidiospores. These are spread by wind and rain splash to reinfest bushes.

Antirrhinum rust (*Puccinia antirrhini*) forms dark-brown pustules, sometimes surrounded by a yellow halo, and can cover the whole plant. Infection results in distortion and discoloration of the

plant. It is thought to overwinter as mycelium on plants in greenhouses or other protected situations. It may also be carried in infected seed. Some species are claimed to be rust-resistant, but these claims do not seem to be justified.

Hypericum rust (*Melampsora hypericorum*) appears as masses of bright-orange spots, and can result in most of the leaves dropping and the plant dying back. This is most common in the south west of the UK.

Hollyhock rust (*Puccinia malvacearum*) is usually bright-orange, though it can be buff or dark-brown as it ages. The leaves may also be discoloured and distorted. The disease overwinters as pustules produced on the lower leaves and stem of the infected plant. It can also affect mallows and lavatera, but they are less likely to succumb.

Mahonia rust (*Cumminsia mirabilissima*) causes angular, deep-red/purple spots throughout the year on the upper leaf of *Mahonia aquifolium* and *M. bealei*. On the undersides are powdery brown pustules.

Periwinkle rust (*Puccinia vincae*) Infected plants often fail to produce flowers, develop an erect habit and may become distorted. The rust shows itself as brownish pustules on the undersides of leaves. Overwintering mycelium can develop in the rootstock of diseased plants and infect fresh plants next spring.

Iris rust (*Puccinia iridis*) causes pale-coloured leaf spots with darker concentric rings around them. In severe attacks the leaves may wither back from the tips. Although most English varieties are susceptible, many bearded and continental irises seem resistant to most common strains of this disease.

Q How do I treat rose rust?

A First, remove badly affected leaves and gather up any that have already dropped. Put them in the bin or burn them - don't put them on the compost heap as this will just help spread the disease. Spray the remaining foliage with a fungicide approved for rust on roses (Our Best Buy is Scotts Fungus Clear Dilute & Spray). Alternate between the two, to help limit the build-up of chemical resistant strains.

Some rose varieties appear to be more susceptible to rust than others and it's worse in some years than others. You can help prevent it by clearing up fallen rose leaves in autumn and again in spring before the new leaves open. Healthy rose bushes which are regularly watered, pruned and fed are less badly affected.

If you have susceptible varieties (such as 'Dearest', 'Mischief', 'Pink Perpétué', 'Whisky Mac' or 'Woburn Abbey') and want to avoid rust entirely, spray them every 10 to 14 days with fungicide, starting as soon as leaf buds open in spring, until October. Or, just treat the symptoms as they appear.

If you want to grow roses in areas prone to rust, try one of the now widely available varieties with some resistance (they'll still need spraying, however). There are many to choose from but there are some very nice ones like 'Alex's Red', 'Blessings', 'Fragrant Cloud', 'Korresia' and many of the ground cover types.

Q How do I treat rust on other ornamentals?

A Treatment is the same for all ornamental plants. If only a few leaves are affected, remove them and put them in the bin rather than on the compost heap. Do the same with any fallen leaves, then spray with our Best Buy is Scotts Fungus Clear Dilute & Spray. However, if the plant is badly affected, it's often better to cut it all down or remove it.

Q What about in the greenhouse?

A Rusts thrive in the warm, still, moist atmosphere of a greenhouse and are most likely to be found on chrysanthemums, fuchsias and pelargoniums.

Chrysanthemum rust (*Puccinia chrysanthemi*) is most common in late summer on indoor chrysanthemums and forms dirty-brown pustules on the undersides of leaves. Yellowish-green spots appear correspondingly on the upper surfaces and severe attacks may cover and damage large areas of leaf. Defoliation and reduced flowering can also result. White rust also affects chrysanthemums. See *Gardening Which?* factsheet GWF314.

Fuchsia rust (*Pucciniastrum epilobii*) results in discoloured leaves with bright-orange spots on the underside and corresponding pale areas on the upper surface. The lower leaves are usually worst affected and may wither and die.

Pelargonium rust (*Puccinia pelargonii-zonalis*) causes dark-brown powdery spots; these are often large spots with rings of small ones around them. Yellow blotches may appear on the upper surfaces and, in time, the whole leaf withers and dies. In severe cases the plant may die.

Q How do I treat rust in the greenhouse?

A The treatment is the same for all plant types. As soon as the problem is noticed, isolate infected plants to prevent spreading. Destroy badly affected plants like chrysanthemums, which rarely recover. For minor attacks, pick off and dispose of affected leaves and stems and spray with a suitable fungicide, repeating every 10 to 14 days until the problem is controlled. For most plants, our Best Buy, Scotts Fungus Clear Dilute & Spray, is likely to be the most effective. However, with fuchsias, this fungicide can cause spotting and scorching of the leaves, so try applying it to the compost rather than spraying the foliage or use one containing myclobutanil. Reduce the risks in future, improve air circulation by spacing pots out and ventilating the greenhouse; do not wet the foliage when watering. With new plants, keep them in quarantine for a couple of weeks to check they are not infected, before putting them with your main stock.

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.