



FACT- FILE [Brassica Pests 01]

Brassica Diseases

Brassicas are susceptible to a number of leaf diseases. However, you can help prevent attack by following a three-year crop rotation, and by avoiding overfeeding.

Q What are brassicas?

A They are cabbage-family plants such as Brussels sprouts, calabrese, cauliflowers, oriental greens like pak choi, kale, broccoli, kohlrabi, swedes and turnips. Closely related crops like radishes, or ornamentals such as alyssum and wallflowers, are also vulnerable to diseases that affect the cabbage family.

White spots

Q What causes white spots?

A If small, white, smooth, shiny patches like scales appear beneath the leaves, white blister (*Albugo candida*) is probably to blame. It starts off as green blisters, which then form white warts, eventually turning powdery. It occasionally distorts the heads of cauliflowers, cabbages and broccoli, and disfigures Brussels sprouts. It may attack stems and flowers as well. Seedlings can be affected. White blister looks serious but seldom reduces either growth or yield.

Q What can I do about it?

A It is worst where air flow is poor and the atmosphere humid. It spreads by rain splash, wind and insects carrying its spores from plant to plant. Sheltered gardens are likely to be more affected than open allotments. Warm, wet autumn weather is the most likely period for attacks. Remove the worst-affected plants by burning, burying or binning. Keep plants spaced out, especially in seedbeds. Resistant spores can remain in the soil, so grow cabbage-family plants in a different spot each year.

Q Can I spray against it?

A There is no completely effective spray available to gardeners, though sprays containing mancozeb may give some control. Some Brussels sprout varieties are thought to be partly resistant.

Mouldy leaves

Q What causes brassica leaves to go mouldy?

A Yellow spots on leaves and corresponding white, fluffy patches on the leaf undersides, are signs of **downy mildew** (*Peronospora parasitica*). You don't usually see downy mildew

outdoors, except in warm, humid areas near the sea, or in very sheltered, low-lying gardens. Mild, wet autumn weather is the most likely period for attacks. Look out for yellow-brown patches between the veins on the upper leaf surfaces, with white, downy patches beneath the leaves showing up only in wet weather. By then, the plants are big enough not to be seriously affected, although leaves may be lost and sometimes edible parts like cauliflower curds are damaged. Yield loss can also be caused by black spots and streaks inside produce, although other diseases may also cause this. Downy mildew damage can open the way for other diseases. Plants in cloches, frames and greenhouses are much more likely to be infected. In spring and autumn, seedlings are the usual victims, when the weather is mild and humid and the plants are close together. Wallflower plants that are raised indoors are especially at risk in early autumn; they can be stunted or even killed by these attacks.

Q What can I do about downy mildew on brassicas?

A Mature plants in prone sites can be protected by spraying with sprays containing mancozeb every 14 days. Keeping down weeds and avoiding overcrowding will also help prevent attacks. In cloches, frames and greenhouses, thin out the plants, spray every two weeks and, ventilate as much as you can.

Q Are there any ways to avoid downy mildew?

A Downy mildew is soil-borne, so growing brassicas in a different spot each year will help prevent the disease. It gets into the plant through the roots and spreads to the leaves, where the downy patches form. Then it spreads from plant to plant on the breeze. Prevent spread, including to the soil, by pulling up and binning or burning affected plants. Ensuring the soil has sufficient potassium and magnesium is said to help plants resist these attacks. Some varieties, such as the calabrese 'Marathon' are said to be tolerant of downy mildew.

White dusty leaves

Q What is responsible for the white dusty covering on leaves?

A Dusty, whitish coverings of leaves and stems is a sign of crucifer powdery mildew (*Erysiphe cruciferarum*). This spreads by airborne spores. Swedes and Brussel sprouts are the usual victims in gardens, but other plants can be attacked. Sprouts develop black spots that ruin their appearance and they need extra trimming before eating. In severe attacks the leaves turn yellow and fall. This disease is worst in the south-east.

Q What can be done about powdery mildew?

A Hot, dry seasons are favoured by powdery mildew. It especially affects plants on light or sandy soil. This can be helped by extra watering. Wider spacing of plants also reduces the disease's severity.

Q Are there any ways to avoid powdery mildew?

A Many brassica varieties are said to be resistant. In practice, such varieties still may be affected. Late-sown crops are often less affected. Late sowing of turnips and swedes (in June) may reduce disease. Excess nitrogen makes plants more susceptible. Powdery mildew survives the winter on old plant material. Burn, bury or completely compost old plants to prevent carrying over the disease into the new year.

Ring spots

Q What's the cause of ringed spots on leaves?

A Large spots of concentric rings on brassica leaves, particularly older ones, indicates ring spot, caused by a fungus (*Mycosphaerella brassicicola*). It causes circular brown-purple patches up to 2.5cm wide on leaves and stems. The patch is sprinkled with tiny black dots arranged in concentric rings. These are the source of the spores of the disease. Eventually, the whole leaf yellows, withers and is shed. This disease is favoured by mild, wet conditions, and although widespread, does its worst damage in the south-west. Brussels sprout buttons are severely affected.

Q What do I do about ring spot?

A Burn or bin badly affected plants.

Q Can ring spot be avoided?

A Avoid excessive manuring as lush plants are more susceptible. If plants are too lush or the site is very fertile, add 30g a sq m of sulphate of potash to promote stronger, more disease-resistant growth. Don't grow cabbages in the same spot each year as the disease can persist. 'Roscoff'-type cauliflowers have some resistance, but are tender so can only be grown near the coast or on protected sites. Destroy badly affected plants and rotate your crops. Seedlings should not be raised in infected soil so it may be best to raise your plants in pots or cell trays.

Other leaf spots

Q What causes other leaf spots?

A The following diseases can all affect brassicas.

Dark or alternaria leaf spot (*Alternaria brassicicola*, *brassicarum*) attacks old leaves, producing unsightly, large, black spots. It usually does no serious damage and can be ignored. The exceptions to this are Chinese cabbage and Brussels sprouts, which it can seriously affect.

Light leaf spot (*Pyrenopeziza brassicae*) produces round, pale spots mainly on cabbages, cauliflowers and broccoli. Look out for target-like rings of pink/white spores. The spots become pale, eventually joining up and producing dead patches on older leaves. It is common where conditions are cold and wet, especially in the north. A four-year break between cabbage crops is the best control.

Bacterial spot (*Pseudomonas maculicola*) turns up occasionally, although it is mainly a disease of regions like the USA that have hotter climates. Tiny 3mm brown, black or purple spots develop from wet spots. These enlarge and merge, sometimes distorting and yellowing the whole leaf. It can get into cauliflower curds, for example, when they are overmature or frost-damaged. One typical sign, when the stalks are cut, is darkening rings of tissue.

White spot (*Pseudocercospora capsellae*) affects mainly turnips and swedes, especially in wet, western areas. Tiny, off-white spots with a purple border develop on both leaf surfaces. These merge, then the leaf goes yellow and dies. Although it spreads from plant to plant by spores carried on the wind, it overwinters as tough, resistant spores or sclerotia in soil.

Q What can I do about leafspot?

A You can help prevent all these problems by avoiding lush growth; use balanced fertilisers and reduce nitrogen fertilisers. Good garden hygiene and crop-rotation can help.