

Brassica viruses

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Viruses can seriously affect the cabbage-family and related crops. They weaken plants and may severely stunt growth.

Q Which plants are affected?

A Brassicas, or cabbage-family plants, including Brussels sprouts, cabbages, calabrese, cauliflowers, Chinese cabbage and other oriental greens like pak choi, kale, sprouting broccoli, kohlrabi, swedes and turnips. They are part of a very large plant family called the crucifers (all have characteristic four-petalled flowers), which also includes radishes and many ornamental garden plants such as alyssum, stocks, honesty and wallflowers. Lots of weeds also belong to this family, including shepherd's purse, as well as agricultural crops such as oilseed rape. Many brassica pests and diseases affect other crucifers and these can act as a reservoir of infection.

Q What is a virus?

A Viruses are strands of genes coated in proteins and sugars, and are much too small to be seen. In fact, they are among the smallest disease-causing entities. They are extremely common and what the gardener sees is the effect of a virus infection.

Q What damage can they do?

A Viruses subvert the normal function of plant cells to their

own ends. This reduces plant growth and yield, and sometimes shows up as distorted growth, miscoloured leaves and reduced lifespan. Even if mature plants appear largely unaffected, the viruses are ideally placed to infect vulnerable young plants nearby.

Q What types of viruses attack brassicas?

A Viruses are common and many types can affect brassicas. However, cauliflower mosaic virus and turnip mosaic virus cause the most serious damage to crops.

Q How do I recognise cauliflower mosaic virus?

A Look out for veins becoming clear or transparent near the base of the leaves. This is followed by pale areas developing between the veins, with dark bands next to the veins. Patches of green appear in the pale or chlorotic areas. Leaves are often distorted and covered with pronounced bands along the veins, and plants can be stunted.

In winter, the outer leaves fall off, leaving the plant looking like a mini palm tree. Plants, and especially cauliflower curds, can become very cold-sensitive and be killed by frost. The effects are hard to see in summer, but become more visible in winter.

Cauliflower mosaic virus is mainly a problem of cauliflowers and hybrid Brussels sprouts, but it will affect other cabbage-family crops, although less severely.

Q How do I recognise turnip mosaic virus disease?

A Cabbages get yellow spots, with dark borders and dark and light bands near the veins. Later the spots die and go very dark. This is sometimes known as cabbage black ringspot. The dark, dead areas extend into the heart of the cabbage, making it difficult to trim off damaged areas. Chinese cabbages are badly affected as well. Cauliflowers and Brussels sprouts have damaged leaves and reduced growth.

Ornamental brassicas, such as stocks, are also affected. This virus is the cause of distorted and mottled leaves and of the streaked or 'broken' flower colours often seen in wallflowers, especially in their second year. Greenfly or aphids carry this disease from plant to plant.

Q Are there any other viruses of brassicas?

A Yes: broccoli necrotic virus, radish mosaic virus, turnip rosette virus and turnip yellow mosaic virus may also turn up. If

this sounds a formidable list, don't despair - it is rare for them to be serious garden problems. Look out for stunting, yellowing, mottling, increased cold sensitivity and foliage loss. Some are transmitted by flea beetle. All are controlled in the same way as other virus diseases.

Q What can I do about virus diseases?

A Viruses themselves cannot be treated, so affected plants should be removed. Viruses can only live for a short time outside living

plants, so affected material is safe to compost. The viruses carry over from year to year on old crops and on weeds. Clearing up properly will help reduce the disease, but it spreads easily, carried by greenfly, including cabbage aphids. Control greenfly to reduce the spread of disease. However, the greenfly transmit the virus as soon as they feed, so if you see them, they have probably infected at least some plants.

Get rid of diseased plants as soon as you see them, and certainly before the next year's crops emerge in spring. This

prevents carrying over the disease from one year to the next. It is a good idea to raise transplants under a covering of fleece or insect-proof mesh. This will exclude virus-carrying aphids and will also keep the plants free of cabbage-root fly and caterpillars. Fleece holds on to warmth very effectively, so use the better-ventilated insect-proof mesh after mid-May. Ideally, suspend these materials on hoops above the plants, with the edges buried at least 50mm deep.

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