

French and runner bean problems

GWF343
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Although generally trouble-free and easy to grow, French and runner beans are susceptible to problems that can severely reduce cropping.

Halo blight

Q What is it?

A Halo blight (*Pseudomonas phaseolicola*) is a bacterial disease of runner and, especially, French beans. It gets into the garden on contaminated seeds and thrives during warm, wet weather. Rain or watering carry the bacteria from plant to plant in splash drops. The good news is that the bacteria do not persist in the soil from year to year.

Q What damage does halo blight do?

A Infected seeds produce seedlings with brown, wrinkled seed leaves. These often die or remain stunted and fail to develop. Sometimes they go yellow and appear to be infected with a virus. On surviving plants, leaves and pods develop greasy-looking spots, with a yellow 'halo'. The greasy spot in the centre is a mass of bacteria. In bad attacks, the spots may join together. When this happens, the whole leaf dries up and is destroyed.

Q How do I control halo blight?

A Fortunately, this disease is not a common problem. If your beans are often affected by it, consider growing a resistant variety, such as runner bean 'Red Rum'.

Avoid sowing any seeds with blemishes or distortions. However, the disease can be carried on seeds that look perfectly normal. Soaking seeds before sowing is best avoided - if there are any infected seeds present, the bacteria will be spread to every seed. Usually, you can control the disease by picking off infected leaves as soon as you see them, or by pulling out and binning or burning affected plants. Avoid overhead watering if you suspect halo blight is present.

There is currently no approved chemical treatment.

Non-setting flowers

Q What is it?

A When runner beans are growing well with plenty of flowers, but no pods are forming, this is described as not setting. It is a very common problem, but is not due to any disease or one particular pest.

Q How do I recognise it?

A Sometimes the flowers just fall off, without leaving the tiny embryo bean pod that is usually left when a fertilised flower falls. This can be due to a lack of water or nutrients, or because the plant is putting all of its resources into larger pods lower down the stem. However, you may find flowers that have been bitten at the base. This is done by bumble bees,

which have learnt that the quickest way to the nectar in the flower is to bite straight through. Often, honey bees then use these holes to get at nectar the quick way. This means that the bee does not pass over the stamen and stigma, so no pollination takes place, and no bean forms.

Q What can I do about it?

A Well-grown, vigorous plants can support more pods than weaker plants. Therefore, it is important to start with fertile soil that doesn't dry out easily, especially for runner beans. Prepare the ground by digging in plenty of well-rotted organic matter. The traditional method is to dig a bean trench, about 60cm wide and 30cm deep, the autumn before sowing. Kitchen waste, old bedding plants, garden compost and shredded newspaper can all be used to refill the trench, along with the original topsoil.

Once the beans are planted, watering is the most reliable way to improve pod set. Aim to apply at least four watering cans per square yard every 10 days, if there is no rain. Plants that have been watered well also produce better-quality beans.

Once the first pods have set, the plants tend to concentrate resources on these. Other pods may abort and fall off. Regular and thorough picking of pods as

they become big enough lets the younger ones get their share of the plant's resources. If you don't do this, cropping may stop, leaving you with a few very large and stringy pods, but no young ones to follow.

Even if there are plenty of flowers, there will be no beans if there are no pollinating insects. There's not much you can do about this if the weather has been cold or windy. Under these conditions, insects don't fly far. All you can do is wait. The beans will continue to flower if no pods are set. When the weather warms up, insects will fly again, and pollination and pod formation will resume. Peas and French beans are self-pollinated and need no insect pollinators.

Q Will hosing down flowers help?

A Wetting foliage and flowers doesn't improve the set of beans. If it helps at all, it's because the water eventually reaches the plants' roots.

Q Do multicoloured or white-flowered beans set seed more easily?

A There is no proof that either does. Multicoloured plants look attractive, and white-flowered

ones produce beans with smoother skins. But to get good crops you will still have to grow them well.

Damping off, foot rot and root rot

Q What are they?

A Bean seeds need warmth to germinate well. In spring, cool soils lead to slow germination and root-disease problems. French beans are affected worse than runner beans. When seedlings fail to come up or only a few distorted ones emerge, damping off is probably to blame. When the plants are yellow and stunted with blackened, dead roots and stem bases, suspect foot and root rots.

Q What causes them?

A Damping off is due to fungal diseases, such as pythium. Foot and root rots can be caused by a variety of fungi, but principally *Fusarium solani*.

Q Can these diseases be cured?

A There are no really effective chemicals available to gardeners to cure these diseases. Drenching infected plants with a fungicide containing copper may prevent them from spreading. Fortunately, plants with mild attacks will often

recover. Help them by light watering in dry spells and adding nitrogen-containing fertilisers. You can also try ridging soil around stems to encourage new roots to form. Avoid deep hoeing, which might damage the remaining roots.

Q Can these diseases be avoided?

A Unfortunately, these diseases persist in the soil. If a serious outbreak occurs, clear away and destroy the plants by burning or binning. Composting is unlikely to destroy the disease organisms in the plants. Don't grow beans on plots where foot and root rot have occurred for several years.

Damping off can be avoided by raising young plants in cell trays or pots indoors, where they can be kept warm. Outdoor sowings will stand a better chance of avoiding damping off if you wait until the soil is warmer at the end of May or even early June, rather than trying to sow in April.

If you want to try your hand at an early sowing, it's worth pre-warming the ground with a clear polythene mulch or by covering the soil with cloches. After sowing, a fleece or cloche covering will help seeds to germinate quickly.