



Technical Update 13

Diseases in Broad & Field Beans

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Development of diseases of winter and spring field beans and broad beans is influenced mainly by the weather and growing conditions. Several foliar diseases can be controlled by well-timed fungicide treatments, but rotation and seed health are also important factors to consider in the general health of the crops.

Downy mildew (*Peronospora viciae*)

The fungus can remain in the soil for many years. Downy mildew can be severe in spring beans and broad beans but is seldom worth treating in winter beans. The characteristic symptoms include pale patches on the upper surface of leaves with a greyish-mauve, velvety growth on the underside. The growing points may be chlorotic and distorted and pod set can be reduced. The disease is favoured by cool, humid conditions. Most broad bean varieties and several spring field bean varieties are susceptible to infection but differences in susceptibility to downy mildew exist and are described in the Descriptive Lists. Treatment should be applied when lesions can be found on about 25% of plants and the crop has started flowering. Disease development is monitored annually, and regional risk forecasts are available from Crop Monitor, <https://secure.fera.defra.gov.uk/cropmonitor/>. Straight metalaxyl-M (SL567A) can be used in field beans (EAMU) and broad beans (EAMU).

Chocolate spot (*Botrytis cinerea*, *Botrytis fabae*)

The disease is encouraged by long periods of overcast and humid weather conditions. Winter beans are more susceptible to infection, especially where plant populations are high. Spring beans and broad beans develop chocolate spot during humid conditions. The disease develops as small, circular, chocolate coloured spots on the lower leaves. These become larger and may coalesce to form a greyer coloured lesion extending over the leaf surface. Stems and pods can also develop a covering of spots or flecks. Severe infections can result in defoliation.

Protectant fungicides should be applied at first pod if spotting is seen on the leaves. If severe spotting is seen earlier in the season, the first spray should be moved forward. A second spray should be applied 3-4 weeks later if spotting continues to develop on the upper parts of the plant. A third spray is seldom required as sprayer damage can cause more yield loss than late infection of chocolate spot.

A range of products and mixtures are approved.

Ascochyta leaf and pod spot (*Ascochyta fabae* = *Didymella fabae*)

Leaf and pod spot is primarily seed borne and the use of certified or healthy tested seed is recommended. However, winter beans growing near to the previous year's fields may develop symptoms during the autumn and winter from air borne spores from infected crop debris. Infection is then spread to surrounding plants by rain splashed spores.

Lesions are greyish-brown, circular to oval and often develop a lighter grey centre. Unlike chocolate spot, small pinprick sized, dark coloured fruiting bodies (pycnidia) are formed. Lesions may develop on the leaves and stems and later, on the pod surface. Here, they are sunken and become darker in colour. Seeds inside may also be blemished. Azoxystrobin can be useful in reducing both foliar infection and seed infection in the harvested produce.

Bean rust (*Uromyces viciae-fabae*)

Rust can become severe during hot dry summers when the night time temperatures are low and humidity is high. Rust forms small brown pustules on the leaf surface. These develop a bright yellow halo around the central brown spot. Later the pustules become larger and develop an orange-brown colour. Brown spores are released from the pustules and spread to new foliage. The effect on yield can be very severe, especially if the disease develops during the late flowering period. Where it occurs after pod development, the effect on yield is far less significant. There are several products available that will control rust.

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