Technical Update 13

Diseases in Broad & Field Beans

January 2025

The development of diseases in winter and spring field beans and broad beans is primarily influenced by weather and growing conditions. While well-timed fungicide treatments can control several foliar diseases, crop rotation and seed health are also crucial for maintaining overall crop health.

Downy mildew (*Peronospora viciae*)
The fungus can persist in the soil for many years. Downy mildew is often severe in spring and broad beans, though it is rarely treated in winter beans. Symptoms include pale patches on the upper surface of leaves and a greyish-mauve, velvety growth on the underside. Growing points may become chlorotic and distorted, while pod set can be reduced. The disease thrives in cool, humid conditions. Most broad bean varieties, and several spring field bean varieties are susceptible, but there are variations in susceptibility, as noted in the Descriptive Lists. Treatment should be applied when lesions are present on around 25% of plants, and flowering has begun. Disease progression is monitored annually, with regional risk forecasts provided by Crop Monitor (https://secure.fera.defra.gov.uk/cropmonitor/). Some fungicides may suppress infection with downy mildew.

Chocolate spot (*Botrytis cinerea, Botrytis fabae)*
This disease develops in prolonged periods of wet or humid weather. Winter beans are particularly vulnerable, especially when plant populations are high, while spring beans and broad beans also experience chocolate spot in humid conditions. The disease begins as small, circular chocolate-brown spots on the lower leaves, which enlarge and may merge, forming larger lesions with a greyer appearance. Stems and pods can also develop spots or flecks. Severe infections may lead to defoliation.
Protectant fungicides should be applied when spotting is observed on the leaves at the first pod stage. If significant spotting occurs earlier in the season, the first application should be advanced. A second spray should be applied 3-4 weeks later if spotting continues on the upper parts of the plant. A third spray is rarely needed in spring beans but may be required in winter beans. Sprayer damage can result in greater yield loss than late-stage chocolate spot infections. Several fungicide products and mixtures are approved for use.

Ascochyta leaf and pod spot (*Ascochyta fabae = Didymella fabae*)
The leaf and pod spot caused by Ascochyta is primarily seed-borne, so it is recommended to use certified or healthy tested seed. However, winter beans growing near fields from the previous year may develop symptoms in the autumn and winter due to airborne spores from infected crop debris. Infection spreads to nearby plants through rain-splashed spores.
Lesions appear greyish-brown, circular to oval, often with a lighter grey centre. Unlike chocolate spot, small dark pinprick-sized fruiting bodies (pycnidia) are formed. Lesions can develop on the leaves, stems, and later, on the pod surface, where they become sunken and darker in colour. Seeds within the pods may also become blemished. Azoxystrobin can be effective in reducing both foliar and seed infection in the harvested produce.

Bean rust (*Uromyces viciae-fabae*)
Rust is more likely to be severe during hot, dry summers with cool nights and high humidity. It starts as small brown pustules on the leaf surface, surrounded by a yellow halo. As the pustules grow, they turn orange-brown. Brown spores are released, which spread to new leaves. The disease can significantly impact yield, particularly if it develops during late flowering. However, its effect on yield is less severe once pods have developed. Several treatments are available to control rust.

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