

OILSEED RAPE DISEASES

Light Leaf Spot (*Pyrenopeziza brassicae*)

Control: varietal resistance, protectant triazole fungicides

Wind-borne ascospores spread from stem debris cause initial puckering of the leaves, followed by yellowing before the lesions become encircled by acervuli (reproductive structures that look like grains of salt/cigarette ash). These spores create new infection sites as the older lesions turn papery brown. The pathogen prefers damp, cool conditions and is present on leaves, stems (laddering) and pods between January and mid May. Infections can lead to reduced photosynthesis leading to serious negative effects on yields, with losses of up to 50% in untreated crops.



Phoma stem canker

(*Leptosphaeria maculans*, *L. biglobosa*)

Control: varietal resistance, fungicidal sprays to prevent leaf spot in the autumn

L. maculans is mainly associated with cankers at the stem base. *L. biglobosa* is responsible for lesions higher up the stem and reduces yield less than *L. maculans*. The disease cycle is initiated by airborne ascospores released from stem debris (or infected seed) in the late summer/early autumn. The spores germinate and infect the leaves, causing characteristic 'phoma leaf spot', with round, tan lesions with small black dots (pycnidia). The fungus continues to grow inside the leaf, down the leaf petiole and into the stem. Stem-canker symptoms usually appear in June in modern elite varieties and continue to develop throughout pod-fill, gradually girdling the stem, leading to early-senescence and lodging in severe cases. Stem canker can reduce yields by >25 %, by disrupting the movement of water and nutrients in the plant. Many modern varieties exhibit good levels of resistance to Phoma. However, the pathogen has a history of adapting to overcome host resistance, so growers must remain vigilant.



Verticillium stem-stripping

Control: crop rotation, maintaining crop health

Caused by the vascular pathogen *Verticillium longisporum*, it infects plants through the roots during the autumn/winter period, growing asymptotically to colonise the plant's main stem. Verticillium symptoms usually only appear later in the season, towards the end of pod-filling; firstly with a characteristic bronze stripe down one side of the stem, followed by the formation of thousands of microsclerotia. These reproductive structures have the appearance of iron filings form under the epidermis and can persist in the soil to propagate future disease outbreaks. Verticillium infection is often associated with severe reductions in yield, particularly when crops are stressed. Although some varieties have been observed to show greater tolerance to *Verticillium*, this could potentially increase the amount of inoculum in the soil, contributing to longer term disease management issues.

