

20.1 Background

Sclerotinia stem rot, also known as white mould, is caused by *Sclerotinia* spp., soilborne fungi that collectively have a very broad host range including canola, chickpea, lentil, lupin, sunflower, soybean, a broad range of vegetable crops and many broadleaf pasture species. Weather conditions during flowering play a major role in determining disease severity, particularly in canola.

The fungus requires moisture for infection; dry conditions during petal fall in canola will prevent disease development, even if flower petals are infected. Airborne infection of petals by ascospores is hypothesised to be the most important method of infection in this crop. However, sclerotia present in the soil can germinate and produce mycelium, which directly infect stem bases (basal infection). This requires prolonged moist soil conditions. There are three important species of *Sclerotinia* in Australia *S. sclerotiorum*, *S. minor* and *S. trifoliorum*. *S. trifoliorum* can cause disease in northern NSW in chickpea. The PREDICTA B test detects both *S. sclerotiorum* and *S. minor* without distinguishing between the two species.

Note: PREDICTA B can only detect the soilborne inoculum.

Primary stem rot is the greatest cause of yield losses and results in the death of the entire plant.
(Image: Kurt Lindbeck, NSW DPI)



IMPACT

- Outbreaks of SSR have become more severe in recent years in some regions of Australia, due to an increased frequency of host crops in cropping rotations e.g. canola and chickpea or lentil.
- Yield losses of up to 30% in canola have been recorded in Australia.
- In WA the disease has become widespread in the canola growing regions and can cause significant losses, exceeding 20%, in the worst affected crops.

WHERE DAMAGE IS MORE LIKELY

- High-rainfall cropping regions of NSW, WA and north-eastern Victoria.
- Emerging as a problem in higher rainfall cropping regions of South Australia.
- In WA, the disease has spread to most of the state's high-rainfall cropping areas.
- Cropping systems with intensive rotations of canola and other broadleaf crop species including chickpea, lupin, soybean and sunflower.

- Cropping districts with frequent and reliable spring rainfall.
- Mixed cropping systems where pastures contain host plants (e.g. capeweed, thistles, shepherds purse, lucerne).
- In low lying paddocks, which remain wetter and cooler.

HOW RESULTS CAN BE USED

- To rank paddocks based on inoculum levels and assess the risk of sowing to susceptible crops.
- Monitor changes in inoculum during different phases of the cropping sequence.
- Confirm diagnosis.

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