Sclerotinia in oilseed rape: prediction and control

The disease
Sclerotinia stem rot (Sclerotinia sclerotiorum) is a common and potentially damaging disease in oilseed rape as well as peas, potatoes, sunflower and various horticultural and minor crops.

Recent Defra surveys in England have shown an average incidence of stem rot of 2-4% in winter oilseed rape. This equates to a 1-2% yield loss. A few crops suffer severe attacks every year. More widespread epidemics can occur, given favourable weather.

Sclerotinia infects a wide range of crops, so control must be planned throughout the rotation to safeguard future cropping. As risk to individual crops is difficult to predict, fungicides are widely used.

Disease cycle
The fungus survives in soil as resting bodies or sclerotia. Pale brown fruiting bodies (apothecia) form to produce airborne spores. These infect oilseed rape petals, which may adhere to the leaves or stems (Figure 1).

The petals provide nutrients for the fungus, enabling it to infect the plant. Light rain is best for ‘petal sticking’ as heavy rain usually washes petals off. Germination of sclerotia is often not well synchronised with flowering of winter oilseed rape because temperatures are low and the soil surface too dry. Many crops therefore suffer very little stem rot.

Sclerotinia petal tests
An agar plate test was developed in Canada. This assesses the proportion of Sclerotinia-infected petals to identify high risk crops. In the UK, Botrytis is more prevalent on petals and the test takes longer - about ten days. Disease risk could change.

If you are unsure about any of the suggested actions, or want them interpreted for your local conditions, consult a professional agronomist.

Action:

- Avoid short rotations of susceptible crops.
- Assess risk to current oilseed rape crop, taking account of previous infections, rotations and current weather.
- Consult the Sclerotinia Decision Guide at www.hgca.com for further details.
- If spraying is deemed necessary, consider the threat from other diseases, eg Alternaria and light leaf spot and select a suitable broad-spectrum fungicide.
- Usually spray at early to mid-flowering for best results.
Summary

Sclerotinia stem rot can be a serious disease of oilseed rape. Whilst only occurring intermittently, the disease can be controlled with fungicides. This reduces the risk to other susceptible crops in the rotation.

Some HGCA- and Defra LINK-funded research has evaluated two tests to determine disease risk, but these have not proved satisfactory in the field so far. Spraying decisions are currently best based on an assessment of disease risk, using the Sclerotinia Decision Guide available on the HGCA website.

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Project Reports OS7 and OS56
Sclerotinia Decision Guide on www.hgca.com

Using a Decision Guide

Stem rot infection occurs when air-borne Sclerotinia spores are present and weather is favourable. Risk assessment can be based on previous experience with Sclerotinia in oilseed rape and other crops on the farm. Risk assessments should be reviewed every few days during flowering as weather is the main influence on disease development.

A simple Sclerotinia Decision Guide www.hgca.com provides information on assessing risk, spray timing and fungicides.

**High risk:** a history of Sclerotinia, short rotations of susceptible crops and warm, unsettled weather during flowering.

**Low risk:** no history of Sclerotinia on the farm and dry, settled weather at flowering.

**Fungicides: timing and resistance**

Fungicides have very limited curative activity against Sclerotinia, so protectant applications should always be used. Spray timing is more critical than product choice. The optimum is usually early to mid-flowering. Well-timed treatments are very effective; late sprays provide limited control (Figure 2).

In France, fungicide resistance has impaired Sclerotinia control in oilseed rape, particularly when using MBC fungicides alone, e.g. carbendazim. The status of fungicide resistance in the UK is not known but the likelihood of it developing can be reduced by targeting fungicides to high risk crops and using fungicides with different modes of action or fungicide mixtures.

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<tr>
<th>Figure 2. Effect of timing on Sclerotinia control using a mixture of Compass + carbendazim (2000 data)</th>
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<tr>
<td>% control</td>
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<td>Early flowering</td>
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<td>Mid-flowering</td>
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<td>Late flowering</td>
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<td>Early + Late flowering</td>
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<td>Untreated control had 3.5% plants with Sclerotinia</td>
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