

# Sussing sclerotinia sprays

■ Tackling both phases of the disease

■ Fine-tuning fungicide timing and rates

By Sarah Henly

■ Have you managed to keep sclerotinia disease out of your oilseed rape crops this season, or are the telltale white stem lesions starting to show?

Hopefully, yield loss to the disease is limited. Few growers would have had the confidence to omit a fungicide programme around flowering to control *Sclerotinia sclerotiorum* in this particularly cool and damp season, believes Caroline Young of ADAS.

“It stayed cool and wet for large parts of April, May and June, which not only prolonged flowering, but also the opportunity for sclerotinia infection. If you first sprayed at early flowering, you’d have needed to follow up three weeks later. In both England and Scotland, the risk of infection continued into June.”

Dr Young is co-ordinating an ongoing HGCA-funded LINK project to understand the impact of the disease not just in oilseed rape where it can be devastating to yield, but across the rotation. Susceptible crops include potatoes, vining peas, green beans and carrots.

At this time of year, the spore infection phase of the disease is in the spotlight. Inside infected plants



**Sclerotia spores infect a range of crops including potatoes, vining peas, green beans and carrots.**

you will find black sclerotia – resting bodies that can survive up to five years in soil and sometimes longer. They germinate in soil from spring onwards to produce the fruiting bodies that release spores.

The trials indicate the number of sclerotia produced varies considerably between infected crops; carrots, for example, produce 3,000 sclerotia/sq m, while oilseed rape produces a few hundred or less. Dr Young isn’t assuming growing carrots in the rotation poses more of a risk, but she wants to understand what that could mean.

“If the risk of sclerotinia disease can be quantified for soils following different crops, growers may be able to modify their rotations to maximise profit while minimising disease build up,” she says.

The focus for control remains the airborne phase – when spores are released. They land on crops and cause leaf and stem infections unless fungicides are used. There is a wide range of effective products, such as boscalid (Filan), azoxystrobin (Amistar) and picoxystrobin (Galileo).

HGCA fungicide performance dose response curves for oilseed rape indicate there is a large drop-off in efficacy at low rates. Dr Young recommends using robust rates, however she hopes to be able to pinpoint when omitting a treatment is a risk worth taking.

“If the seasonal risk is low, we can

recommend delaying the first spray until mid-flowering. That may be sufficient if the flowering period isn’t prolonged by cool weather.”

This year, up to three sprays may have been used during flowering. For crops prone to lodging, a late flower spray may have helped prevent the plant-to-plant spread of sclerotinia and also control alternaria pod spot, she explains.

To assess the seasonal risk, petals are sampled during flowering and incubated on agar plates. After eight to 10 days, infection levels are measured and linked to disease in the field.

The industry partners are helping by monitoring spore traps. Dr Young believes there may be potential for localised spore trapping if the testing process can be shortened. She is confident they will be able, at the very least, to adapt a German-based model to use alongside weather forecasts.

SkleroPro works on the principle that sclerotinia infection occurs when the temperature reaches 7C for 23 hours continuously or more, and relative humidity exceeds 80%. In theory, a prediction can be made two days ahead of the need to spray, using forecast weather data.

Spray timing for control in oilseed

## CROPS perspective

■ The project data will be used to develop a more accurate online sclerotinia risk-management tool and possibly to develop an in-field forecasting system. Most importantly, it promises to help growers understand how to adjust their spraying regimes to control the problem and maintain profitability.

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rape according to crop growth and SkleroPro forecast alerts was successful in 2010, but not in 2011 where early infections in dry conditions were missed. Nevertheless, Dr Young believes the HGCA’s investment of £150,000 in the £726,000 project is great value.

“We should be able to reduce the economic loss incurred by growers due to sclerotinia, by quantifying the effects of soil management and rotation on the disease, and by fine-tuning fungicide use. That way we can help safeguard the long-term future of UK oilseeds and vegetable production.”

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## Summary

■ Project no. 3579: Reducing the impact of sclerotinia disease on arable rotations, vegetable crops and land use; ADAS, AHDB, BASF, Belchim, Burkard, Microzone, NPARU, PGRO, Rothamsted Research, SAC, Velcourt, Warwick Crop Centre, the Scottish government and DEFRA through the Sustainable Arable LINK programme; from October 2009 to April 2013.

## HGCA perspective

- Working with AHDB sister divisions to control a key arable disease
  - Important to reduce rotational diseases that affect oilseed rape, with pressure to shorten rotations
  - Improving effectiveness of fungicide applications through precision timing
- Interim report available on HGCA website at [www.hgca.com/research](http://www.hgca.com/research)

