Fungicides for sclerotinia control in winter oilseed rape

Summary of HGCA fungicide project 2010–2013 (RD-2008-3457)

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HGCA is the cereals and oilseeds division of the Agriculture and Horticulture Development Board.
Background

Fungicides for control of sclerotinia stem rot have been evaluated over the last four years in commercial crops at sites with a history of sclerotinia disease in the West Midlands (near ADAS Rosemaund, Herefordshire) and South East (Romney Marsh, Kent) or East (Essex) by ADAS. Most fungicides have been tested at half and full label dose applied as a single spray at early to mid-flowering. Disease assessments were done at the end of flowering and pre-harvest. Combine harvested yield data are adjusted to 91% dry matter.

Potential new fungicides are tested under HGCA code within the project and data are made available at product launch. Within this phase of the project, the new products are Tectura and Propulse/Recital.

Results

In 2010, fungicides were applied at mid-flowering on 13 May to the experiment near Rosemaund, Hereford (cv. DK Cabernet). The main sclerotinia epidemic occurred in late May and early June.

The early June infection stretched some of the treatments, particularly when applied at half dose. The affected plants had severe lesions pre-harvest so incidence (44% of plants affected) and severity data (Figure 1) were very similar. While all treatments gave control, there were significant differences between products and most showed better control at the full dose compared with half dose. All treatments gave significant yield increases of 0.92–1.47 t/ha (untreated 4.33 t/ha).

![Sclerotinia main stem severity (index) - Rosemaund 2010](image)

**Figure 1.** Sclerotinia control and yield in relation to fungicide product and dose, Rosemaund, 2010.
In 2011, disease levels were very low at both test sites. In 2012, fungicides were applied on the 12th May at the site near Rosemaund in Herefordshire (cv. DK Sequoia).

About 20% of plants were infected in early May prior to fungicide application and control relates to a further 40% infection that occurred in late May/early June. There were no significant differences between products for stem rot control and all treatments gave significant yield increases (range 0.43–1.04 t/ha) (Figure 2).

![Sclerotinia severity (index) - Rosemaund 2012 10th July](image)

**Figure 2.** Sclerotinia control and yield in relation to fungicide product and dose, Rosemaund, 2012.

**2013**

In 2013, the crop (cv. Avatar) was late-flowering and fungicides were applied at mid-flowering on 25 May (Figure 3). No sclerotinia was observed prior to fungicide application and favourable weather for infection occurred late May and early to mid-June. All products significantly reduced sclerotinia development; however, disease levels were low and there were no significant yield significant responses to treatments.
**New products**

Propulse/Recital (label rate 1.0 l/ha) contains prothioconazole (125 g/l) + fluopyram (125 g/l) and is a strong sclerotinia product that will be available through distribution. The rate of prothioconazole is about 70% of that used with full rate Proline 275. Fluopyram is an SDHI fungicide.

Tectura (label rate 1.0 l/ha) contains boscalid (133g/l) + metconazole (60g/l) and is strong sclerotinia product. It can provide additional growth regulatory benefits particularly at sites with high yield potential.

Skyway (label rate 1.0 L/ha) contains bixafen (75g/l) + prothioconazole (110g/l) + tebuconazole (100g/l) through distribution. The rate of prothioconazole is about 65% that used with full rate Proline 275. Bixafen is an SDHI fungicide. Data from 2013 only.

Sclerotinia incidence has been low (<5% of plants affected) in several experiments, notably in the dry year of 2011. Under these conditions, the physiological effects of fungicides may still produce yield benefits. Filan (boacalid) and Tectura (which is a mixture of metconazole and boscalid) gave small but significant yield increases at full label rate when averaged over four experiments (Figure 4). Note that these responses were obtained at high-yielding sites.

![Sclerotinia severity - Rosemaund 2013](image)

**Figure 3.** Sclerotinia control in relation to fungicide product and dose, Rosemaund, 2013.
**Figure 4.** Yield responses to sclerotinia fungicide treatments in crops with low levels of sclerotinia at harvest (mean of 4 experiments).

**Key points**

- Fungicide timing is vitally important for good control, as products are protectants and have little or no curative activity.
- Product and dose effects can be significant on disease development when sclerotinia levels are low and high. Yield responses will depend on the timing of onset and disease development in the crop.
- The optimum timing for a single spray is usually just before mid-flowering on the main raceme.
- Treatments provide good control for about three weeks. Two sprays may, therefore, be required to protect crops at high-risk sites throughout the flowering period.
- Fungicides differ in their physiological effects on the crop and this should be considered when selecting products (e.g. is growth regulation required?).
- Strategies are required to minimise the risks of selecting fungicide-resistant strains of sclerotinia and other pathogens. **DO NOT USE** sclerotinia products containing single active ingredients more than once on their own. Use mixtures, co-formulations or products with a different mode of action.