Fungicide performance in oilseed rape

Sclerotina

Untreated *Treated*

Key messages

Sclerotinia
- Fungicide timing is always important
- Under high disease pressure product choice and dose matter
- Use robust (at least 0.75) rates
- Consider two sprays, 3 weeks apart, at high risk sites

Light leaf spot
- Select varieties with good resistance in disease-prone areas
- Prothioconazole (in Proline and Prosaro) is the most effective fungicide
- Autumn and spring sprays are usually required

Phoma
- Use two sprays at half dose for robust control
- When plants are large, use fungicides with plant growth regulator (PGR) activity
- For small heavily infected plants use high doses of fungicides without PGR activity

Consider mixtures or sequences to avoid resistance developing

Always consider local conditions and consult aprofessional agronomist if necessary.

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Fungal disease in oilseed rape

Yield of oilseed rape can be halved by disease and typically losses of 10 – 20% occur. Choosing the correct fungicides can prevent such losses. Over 95% of UK crops receive at least one treatment during the growing season. However, after record levels of sclerotinia stem rot in 2007 and 2008 fungicide use is increasing and more crops are sprayed three times. This Project Progress summarises the first detailed independent dose response data for disease control and yield. A limited number of products were tested in the trials and the graphs are solely based on these data. Broader conclusions are based on more extensive experience.

Sclerotinia

Fungicide performance only differed at high disease levels. When disease control and yield were averaged over all doses, Filan, Proline and Compass ranked above Amistar, Folicur and Priori Xtra (Figure 1).

All fungicides for Sclerotinia are only protectant. A single spray at early to mid-flowering gave good protection for about three weeks. Sclerotinia infection at the late flowering stage was not controlled. This late infection is less damaging to yield, but at high risk sites a second spray during flowering may be justified.

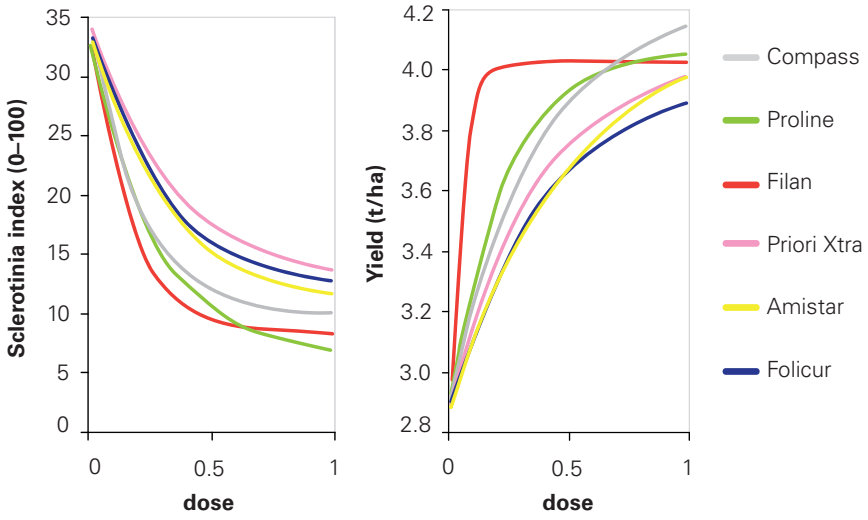

Figure 1. Fungicide dose response for sclerotinia control and yield

Light leaf spot

When averaged over all doses, Proline provided the best light leaf spot control. Prosaro was the next most effective product followed by Folicur. Disease control for all fungicides improved with dose (Figure 2).

In recent years very good light leaf spot control has been hard to achieve. In Scotland, reduced sensitivity to azole fungicides is thought to be a contributory factor. Therefore, varieties with good resistance to light leaf spot are essential in high risk areas. In England, recent results suggest that established products, such as Folicur and Punch C, remain effective. However, only one trial addressed fungicide performance against light leaf

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spot and further work is needed. There were no effects overall of increasing dose on yield. However, the dose response curve for Proline does show yield response increasing above half dose. No consistent yield response was observed for Caramba (data not shown). Fungicides with plant growth regulatory activity (ie Folicur, Caramba and Prosaro) gave very flat yield responses to dose suggesting adverse crop effects at higher doses.

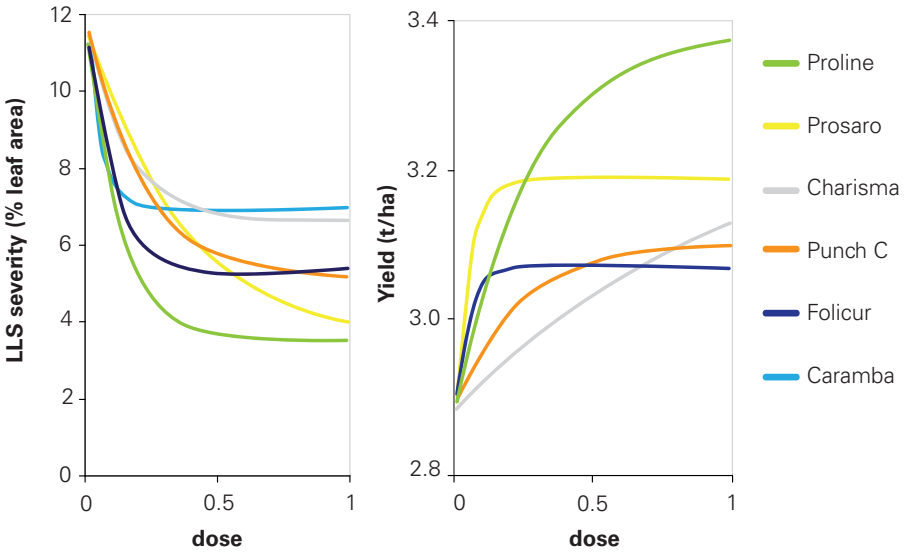

Figure 2. Fungicide dose response for light leaf spot control and yield
(data from Aberdeen only)

Phoma

All fungicides gave good levels of disease control that improved as dose increased (Figure 3). There were significant differences between products with Proline and Prosaro giving better disease control than Punch C and Charisma. Caramba was the least effective against the stem canker stage, but control was still acceptable (Figure 3).

All fungicides increased yield up to half dose with no further benefit. Prosaro was most effective at stimulating yield. Yield benefits were attributed to PGR effects as well as disease control.

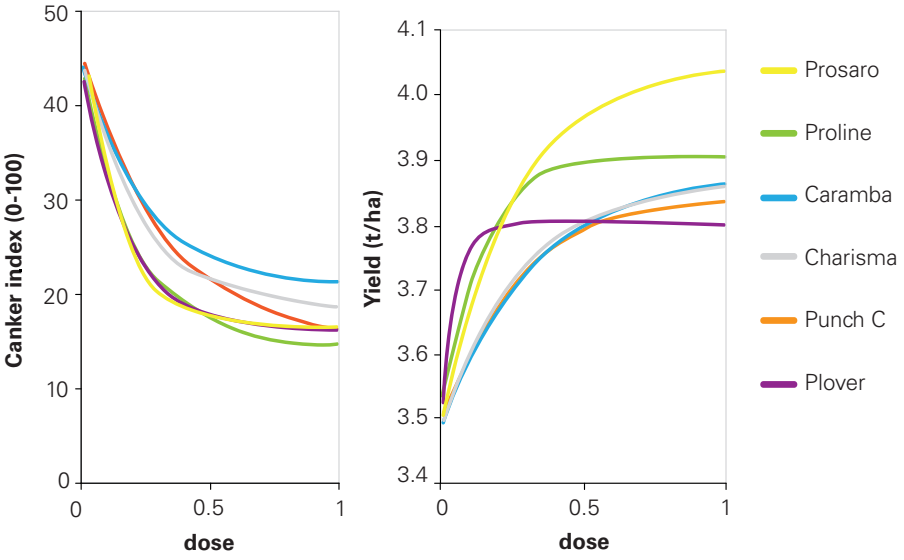

Figure 3. Fungicide dose response for phoma control and yield

Study details

Fungicides were evaluated in replicated field experiments using a two-spray programme for light leaf spot (November + March) and phoma (October + December). A single application to control sclerotinia was applied at early to mid-flowering. Products were tested at 0.25, 0.50, 0.75 and full dose rates. Various locations were used for the trials: sclerotinia (2006-08) in Hereford and Romney Marsh, Kent; light leaf spot (2006-08) in Aberdeen; and phoma (2006-08) at ADAS Boxworth, Cambridge and ADAS Terrington, Norfolk.

The wet 2008 harvest badly affected light leaf spot trials thus yields are only from 2006 and 2007.

Data for some new fungicides, still under development, have been collected and will be made available as products are marketed.

Further information

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Project Reports 449
This Project progress is based on the results from a 3 year project 'New fungicides for oilseed rape: defining dose-response activity'. The project was led by Dr Peter Gladders, ADAS together with Dr Simon Oxley, SAC. Agrochemical manufacturers supported the project by providing new products.

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