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Annual Report

Fungicides for phoma stem canker control in winter oilseed rape

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1. Background

Fungicides for the control of phoma leaf spot and stem canker have been evaluated for over ten years at ADAS Boxworth (Cambridgeshire), ADAS Rosemaund (Herefordshire) and ADAS Terrington (Norfolk). In 2017 to 2025, the ADAS Boxworth trial was moved to ADAS Rosemaund.

All trials are conducted on phoma stem canker susceptible varieties with good resistance to light leaf spot, based on disease resistance ratings in the AHDB Recommended Lists for cereals and oilseeds (RL).

Products are tested at four doses ($\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and full label rate) as two-spray programmes, plus a completely untreated control. Restrictions may apply where products are used as part of two-spray programmes and labels should be checked for guidance on maximum individual dose, total dose and application timings.

The first fungicide application is in early autumn (ideally, when 10 to 20% plants are showing phoma leaf spots, which is usually in October) with a second application 4 to 10 weeks later (November/December) when re-infection is apparent.

Priority for inclusion for testing in this project is given to products not currently approved to allow independent data to be available when they come to market. Data in this report starts from 2015 and focuses on the efficacy of products that have recently been approved for use in oilseed rape.

Products tested included azole solos (Proline 275, Plover and Toledo), SDHI solo (Filan), QoI (Architect), QoI + azole co-formulation (Priori Gold), QoI + SDHI co-formulation (Shepherd) and SDHI + azole co-formulations (Aviator Xpro and Propulse).

Leaf disease assessments are done after each application and stem canker is assessed in late June (presented as a canker index 0 to 100; where 0 is no infection and 100 is whole plant dead). Combine harvested yield data are adjusted to 91% dry matter.

More historic data is available via ahdb.org.uk/fungicide-performance

2. Results

2.1. Harvest year 2025

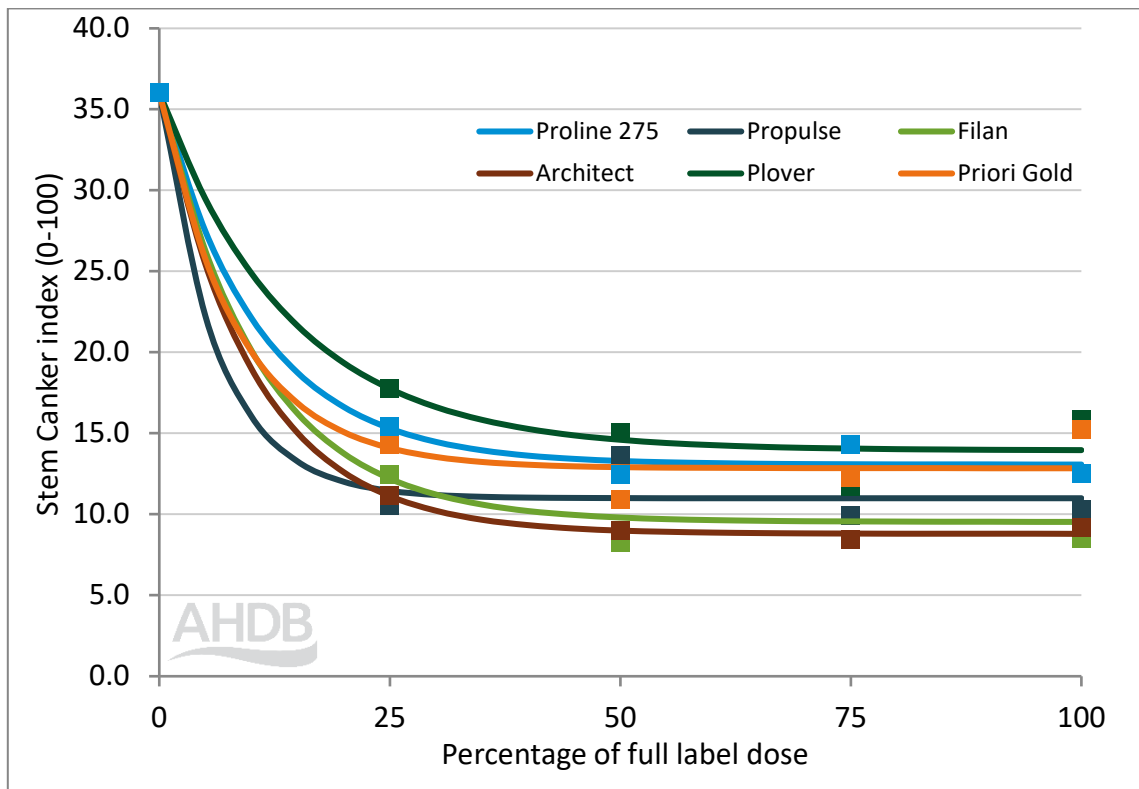
Stem canker severity was moderate at Terrington (index 44 in untreated) and low to moderate at Rosemaund (index 31 in untreated) prior to harvest in 2025. The first signs of phoma leaf spot were seen early at both Terrington and Rosemaund from the first week in October 2024. At Terrington, the first treatments were applied on 30 October 2024 at the 7-leaf stage (50% phoma leaf spot incidence, 0.8% leaf area affected). At Rosemaund, first sprays were applied on 8 November 2024 at the 6-leaf stage (16% phoma leaf spot incidence; 0.5% leaf area affected). The second spray at Terrington was applied on 13 December 2024 at the 9-leaf stage (100% phoma leaf spot incidence; 4.1% leaf area affected) and at Rosemaund on 14 January 2025 at the 7-leaf stage (90% phoma leaf spot incidence; 0.2% leaf area affected). When assessing for phoma stem canker prior to harvest, generally stem canker indices of less than 30 have a minimal impact on yield as the cankers are relatively small. Therefore, the aim for product performance is to achieve a reduction in stem canker to an index of 30 or below as this is when a yield benefit from their application is usually seen.

A cross-site analysis for both sites showed a mean untreated stem canker index of 36 with a reduction for Plover to 15, Proline and Priori Gold to 13, Propulse and Filan to between 11 and 10, and Architect to 9, when applied at 50% dose (Figure 1a). Yield responses at 50% dose were 0.10 t/ha for Plover, 0.20 t/ha for Filan, 0.25 t/ha for Proline, 0.35 t/ha for Priori Gold, 0.45 t/ha Propulse and 0.47 t/ha for Architect (untreated = 4.30 t/ha) (Figure 2b). There was only a small additional increase in yield seen at 100% dose ranging from 0.05 to 0.10 t/ha across the treatments.

2.2. Cross-site analysis (2015 to 2025)

A cross-site, over-year analysis was conducted using data from eighteen trials harvested from 2015 to 2025 (Figure 2a). Stem canker indices were decreased following application of Plover, Proline and Priori Gold to between 14 and 26 (depending on product and dose), for Propulse and Filan to between 11 and 16, and for Aviator Xpro, Architect and Shepherd indices were decreased to between 5 and 13. The analysis showed that yield responses to fungicides at the 50% dose for Plover and Filan were 0.25 to 0.30 t/ha, Priori Gold and Proline 0.35 t/ha, Propulse and Architect 0.40 t/ha, and Aviator Xpro and Shepherd 0.45 t/ha (untreated = 3.65 t/ha) (Figure 2b). For all products, little or no further increases in yields or stem canker reduction were observed at the 100% dose.

a.



b.

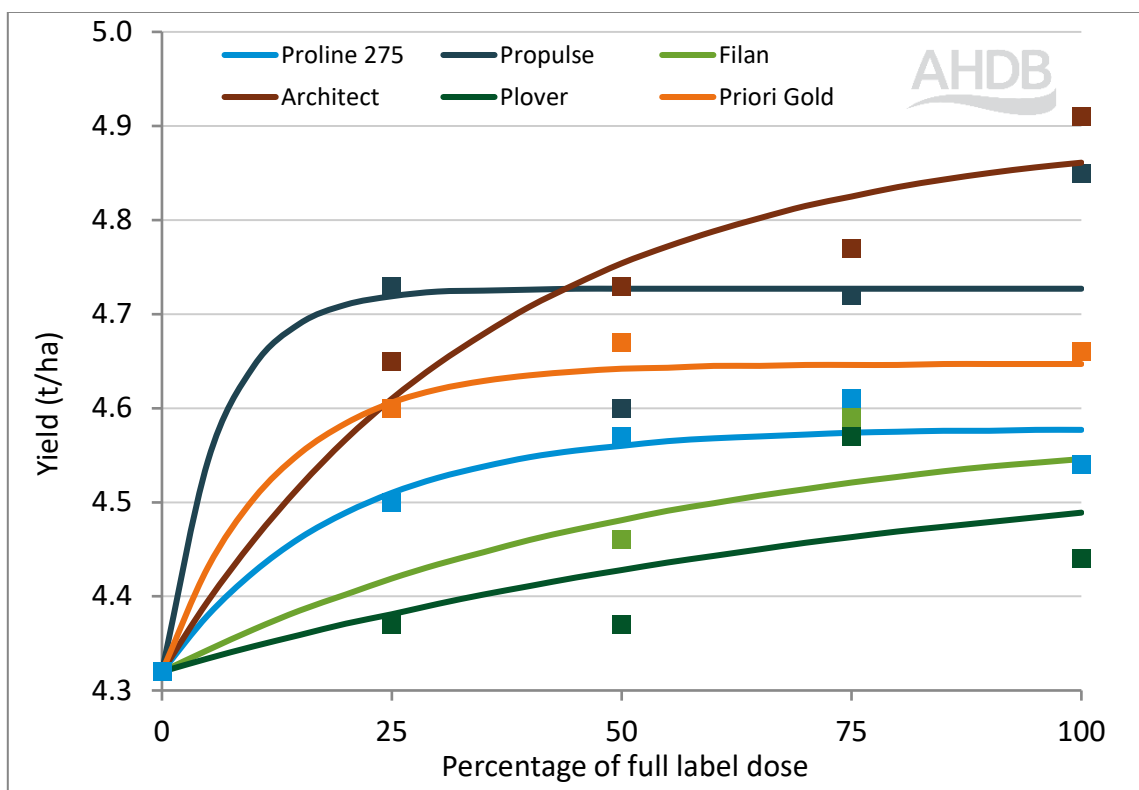
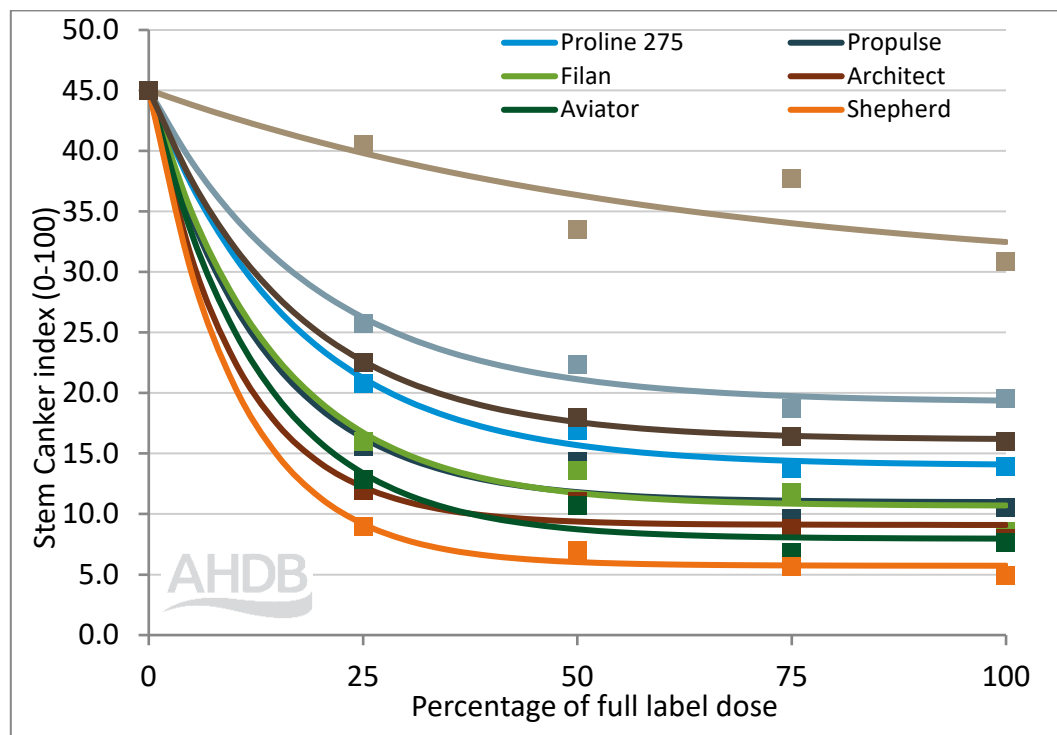


Figure 1. Phoma stem canker control (a.) and yield (b.) response, at 91% dry matter in relation to fungicide dose in Norfolk and Herefordshire in two trials conducted 2024/25.

a.



b.

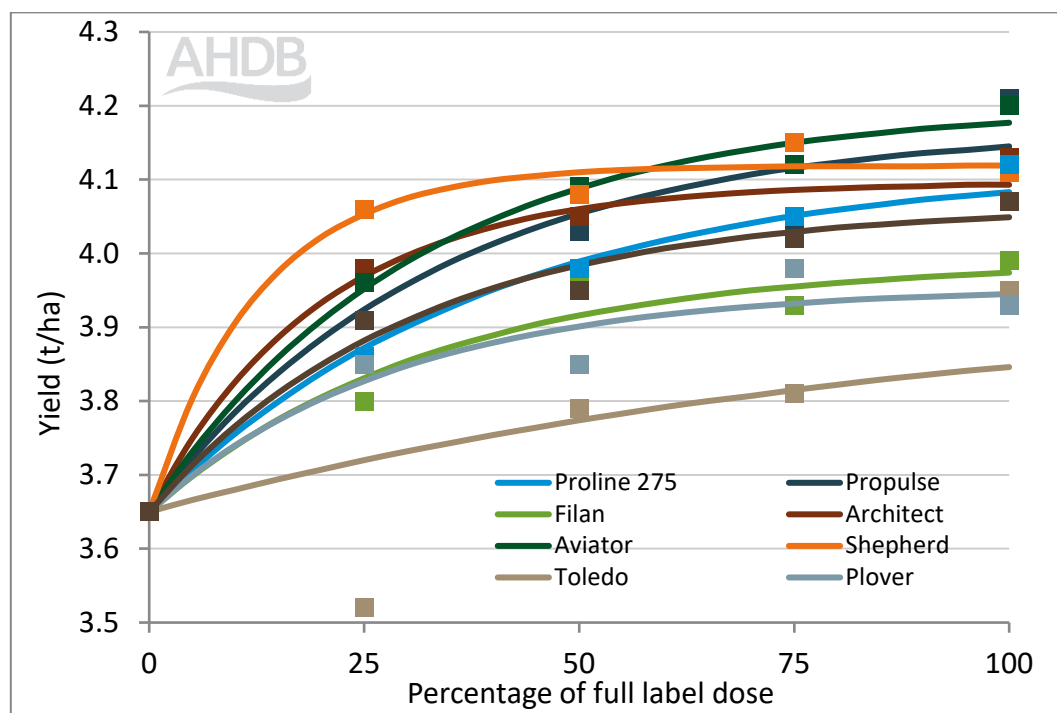


Figure 2. Phoma stem canker control (a.) and yield (b.) response, at 91% dry matter in relation to fungicide dose in Cambridgeshire (2015-2016), Norfolk (2015-2025) and Herefordshire (2017-2025) in eighteen trials conducted in 2015 to 2025. *Note fungicide products included for testing in the following years: Proline 2015-2025, Architect 2015-2018 and 2025, Filan 2016-2018 and 2025, Priori Gold 2016-2021, 2023 and 2025, Aviator 2017-2018 and 2021-24, Shepherd 2017-2022, Plover 2018-2020, 2023-2025, Propulse 2023-2025, Toledo 2023.*

3. Managing phoma leaf spot/stem canker risk (harvest year 2026)

Use the AHDB online phoma forecast (ahdb.org.uk/phoma-leaf-spot-forecast) to guide crop monitoring and plan fungicide applications.

Early phoma epidemics are the most damaging to yield. This typically puts 0.5 t/ha of yield at risk, although rapid re-infection in the autumn can also reduce yields.

In most areas, the first leaf spotting was observed in mid to late October 2025. This is similar to 2024, when leaf spotting was first observed in mid-October.

Many crops were at threshold when the first fungicides were applied. On susceptible varieties, second applications were applied when re-infection was seen from the end of November.

Where phoma epidemics have occurred later and on very small plants, field monitoring for re-infection will be important. Later-drilled crops often result in smaller plants over the winter, which are at a higher risk when infections occur. Late epidemics occurring in February/March can be very damaging if plants are small in late autumn or winter.

Fungicide application timing is important. The first application should be made (prioritising varieties with RL stem canker disease resistance ratings of 7 and below) when 10 to 20% of plants have phoma leaf spots. Plan a second application when re-infection is evident (4 to 10 weeks later). Some varieties with high resistance to stem canker (RL ratings 8 or 9) may also show good resistance to phoma leaf spot. Such varieties may not require a fungicide, unless the 20% threshold is exceeded.

Additionally, some varieties are likely to require an autumn fungicide (November) for light leaf spot control (if there is a risk). This should be considered when planning autumn programmes.

Although phoma leaf spot is detected in some Scottish crops, local conditions mean it seldom develops to the damaging canker-forming stages. As a result, light leaf spot remains the main target of sprays in Scotland. In areas where phoma leaf spot is at threshold levels, both diseases may need to be considered when deciding on autumn application timings.

Good control of phoma leaf spot and stem canker can be achieved with two sprays at half the label recommended rate.

It should be noted that all modes of action offer protection when applied prior to infection.

There is now a range of modes of action available, including azole and non-azole options, for the control of phoma leaf spot/stem canker.

Using a range of modes of action, in alternation or as mixtures/co-formulations, throughout the fungicide programme is necessary as part of a robust fungicide resistance management strategy to prevent the selection for fungicide insensitive strains.

The latest oilseed rape fungicide resistance management guidelines are available via ahdb.org.uk/frag