Fungicide performance in wheat, barley and oilseed rape

December 2025

CEREALS & OILSEEDS

Fungicide performance 2025: Introduction

The graphs in this document show dose-response curves up to 100% label dose.

The AHDB Agronomy Conference presentation (9 December 2025) showed dose-response curves up to 200% label dose.

In these trials, most fungicides are tested at double rate to improve the ‘fit’ of the dose-response curves.

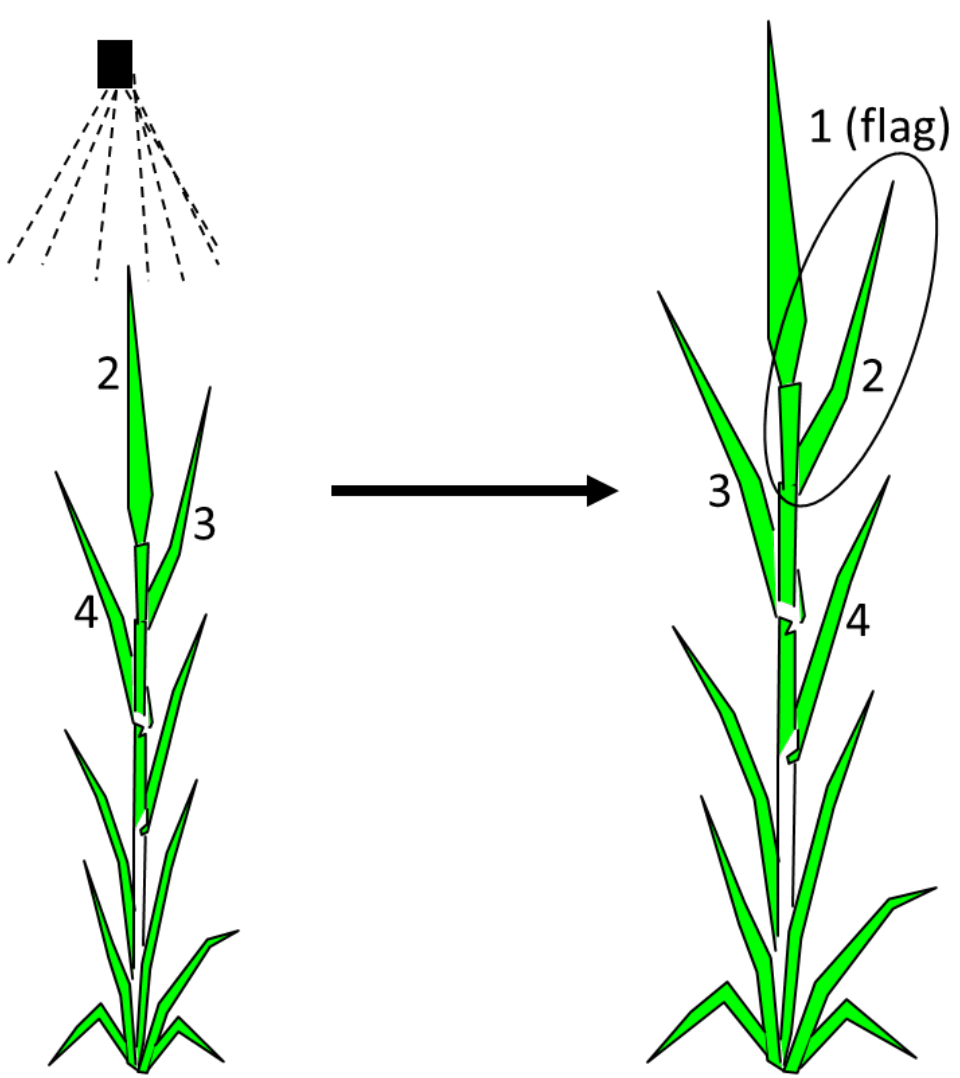
In commercial situations, do not exceed the recommended label dose (i.e. 100%).

For further information on fungicide performance, including trial design, visit: **ahdb.org.uk/fungicide-performance**

Trial methods

- To maximise differences between treatments for each disease, the fungicide performance trials use:
  - High-disease-risk locations
  - Highly susceptible varieties
  - One spray timing (for wheat and barley)
- Dose-response graphs show average treatment performance, measured across a range of sites, seasons and leaf layers
- Cover-sprays that are not active against the target disease are sometimes used to reduce the effect of other diseases on the trial

Protectant and eradicant activity



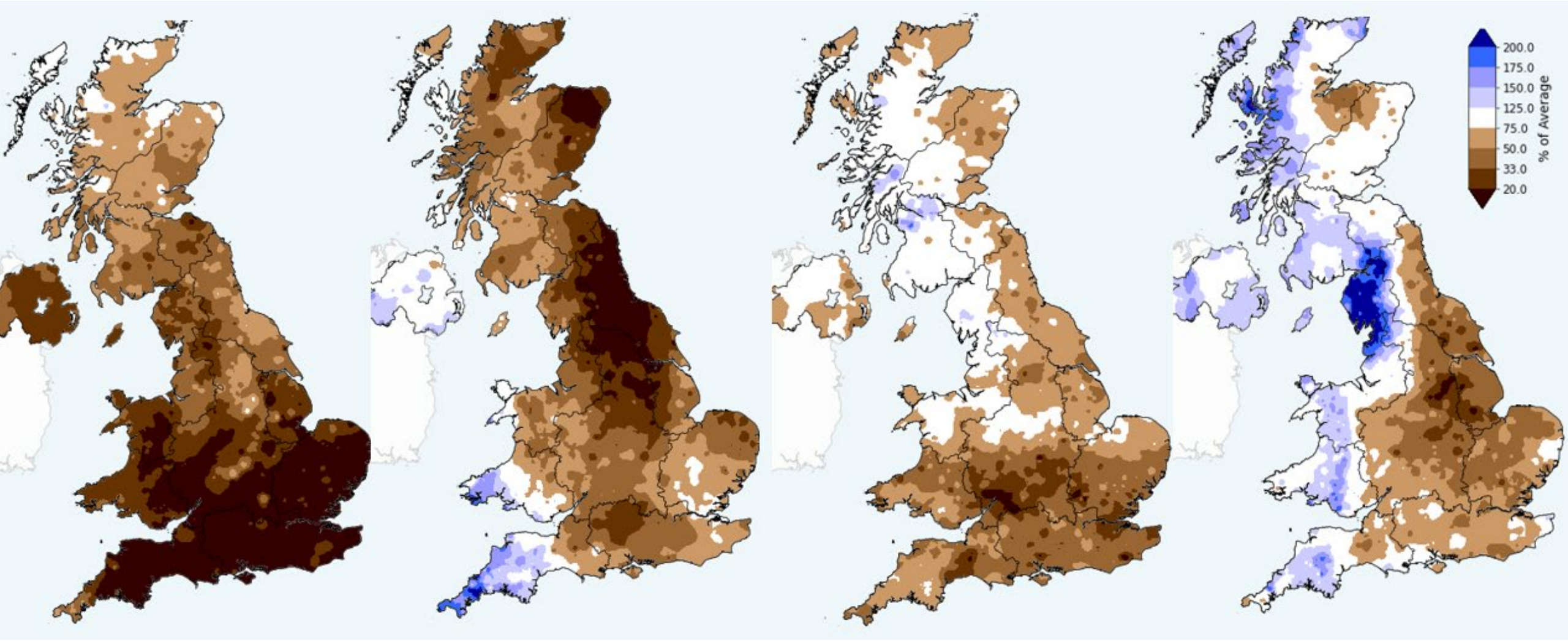
Target leaf and those emerged afterwards: **protectant activity**

Leaves emerged prior to spray application: **eradicant activity**

Rainfall anomaly maps for spring 2025

Based on average 1991–2020 MET office data

March April May June



Fungicide performance 2025: Wheat

Wheat: trial-site data 2025

Site		Spray timing	Target disease	Variety
1	Rosemaund	T2	Septoria tritici	RGT Saki
2	Sutton Scotney	T1	Septoria tritici	LG Astronomer
3	East Lothian	T2	Septoria tritici	LG Skyscraper
4	Terrington	T1	Yellow rust	KWS Zyatt
5	Cambridge	T2	Brown rust	Crusoe
6	Gleadthorpe	T3	Fusarium	RGT Illustrious
7	Carlow	T2	Septoria tritici	KWS Dawsum
8	Cardigan	T2	Septoria tritici	LG Skyscraper
9	Cirencester	T2	Septoria tritici	LG Astronomer
10	Dundee	T1	Septoria tritici	LG Skyscraper

Wheat: registered products

Product	Active ingredients	Mode of action
Arizona*	folpet	Multi-site
Proline 275*	prothioconazole	DMI (azole)
Myresa	mefentrifluconazole (revysol)	DMI (azole)
Toledo	tebuconazole	DMI (azole)
Peqtiga	fenpicoxamid (inatreq)	QiI
Elatus Plus	benzovindiflupyr (solatenol)	SDHI
Imtrex	fluxapyroxad (xemium)	SDHI
Vimoy	isoflucypram (iblon)	SDHI
Miravis Plus	pydiflumetofen (adepidyn)	SDHI
Ipresso	isoflucypram + prothioconazole	SDHI + DMI (azole)
Revystar XE	fluxapyroxad + mefentrifluconazole	SDHI + DMI (azole)
Ascra Xpro	bixafen + fluopyram + prothioconazole	SDHI + SDHI + DMI (azole)
Plaxium	fluopyram + isoflucypram + prothioconazole	SDHI + SDHI + DMI (azole)
Univoq	fenpicoxamid + prothioconazole	QiI + DMI (azole)
Jessico Fusion **[NEW]**	isoflucypram + fenpicoxamid	SDHI + QiI
Amistar	azoxystrobin	QoI
Comet	pyraclostrobin	QoI

*Arizona and Proline 275 only tested at full dose on septoria tritici.

A further five unregistered products were tested in 2025. Data will be released upon registration.

Check labels prior to use
Most single active products are only recommended for use in mixtures with fungicide(s) with an alternative mode of action with efficacy against the target disease.

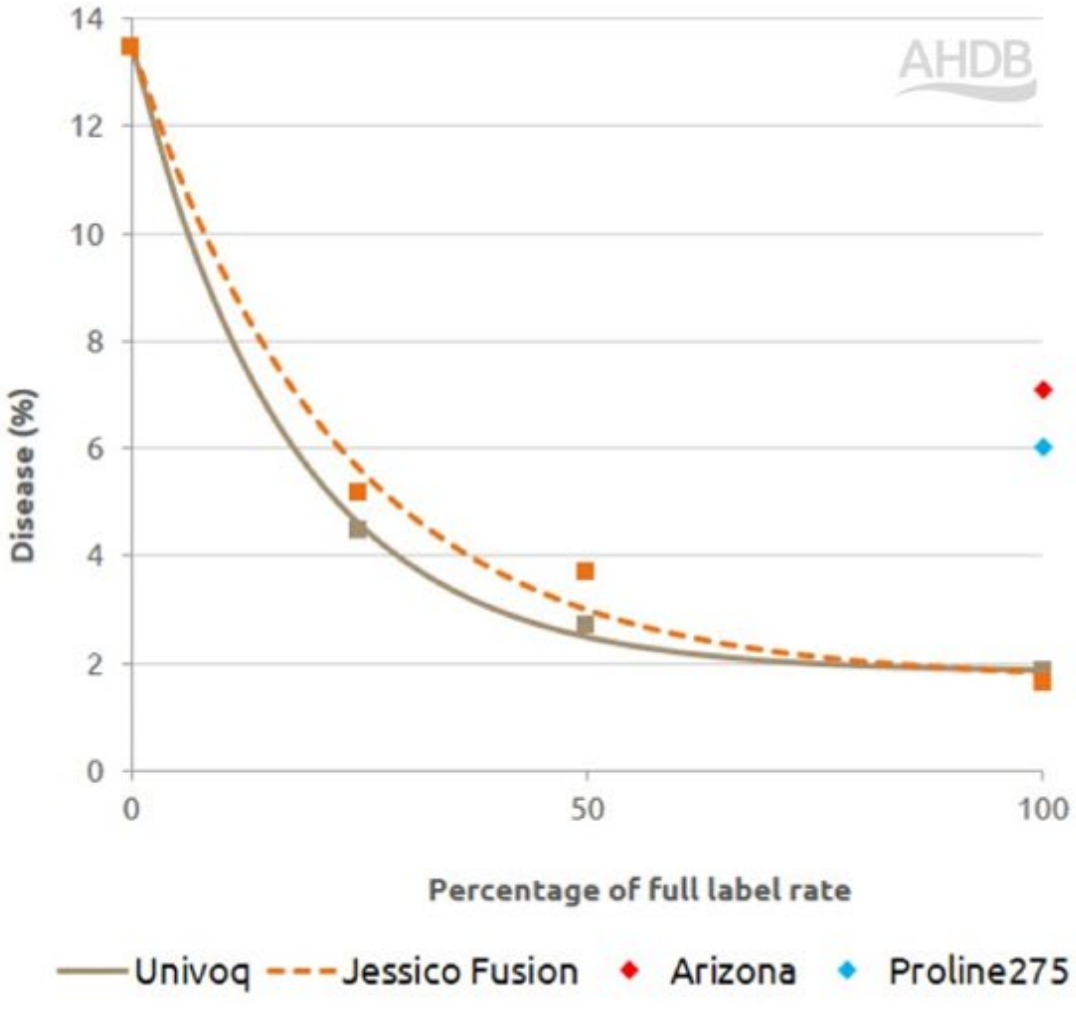
New fungicide: Jessico Fusion

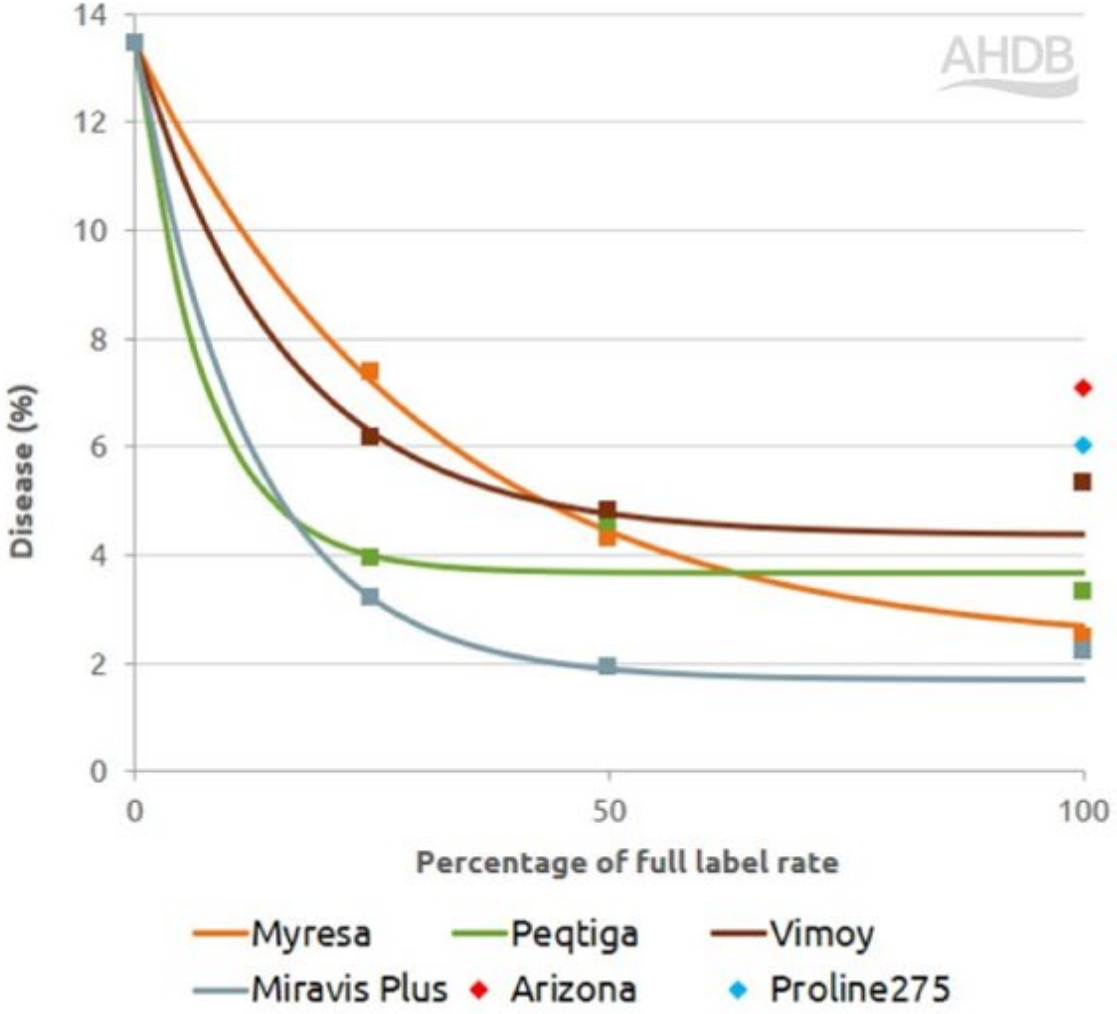
- Crops: wheat, triticale, rye and spelt
- To control: septoria tritici, yellow rust and brown rust
- Active ingredients: 50g/l fenpicoxamid + 35.5g/l isoflucypram
- Full label rate: 1.5l/ha
- Maximum number of applications: 1 per season

Wheat septoria tritici efficacy data 2025

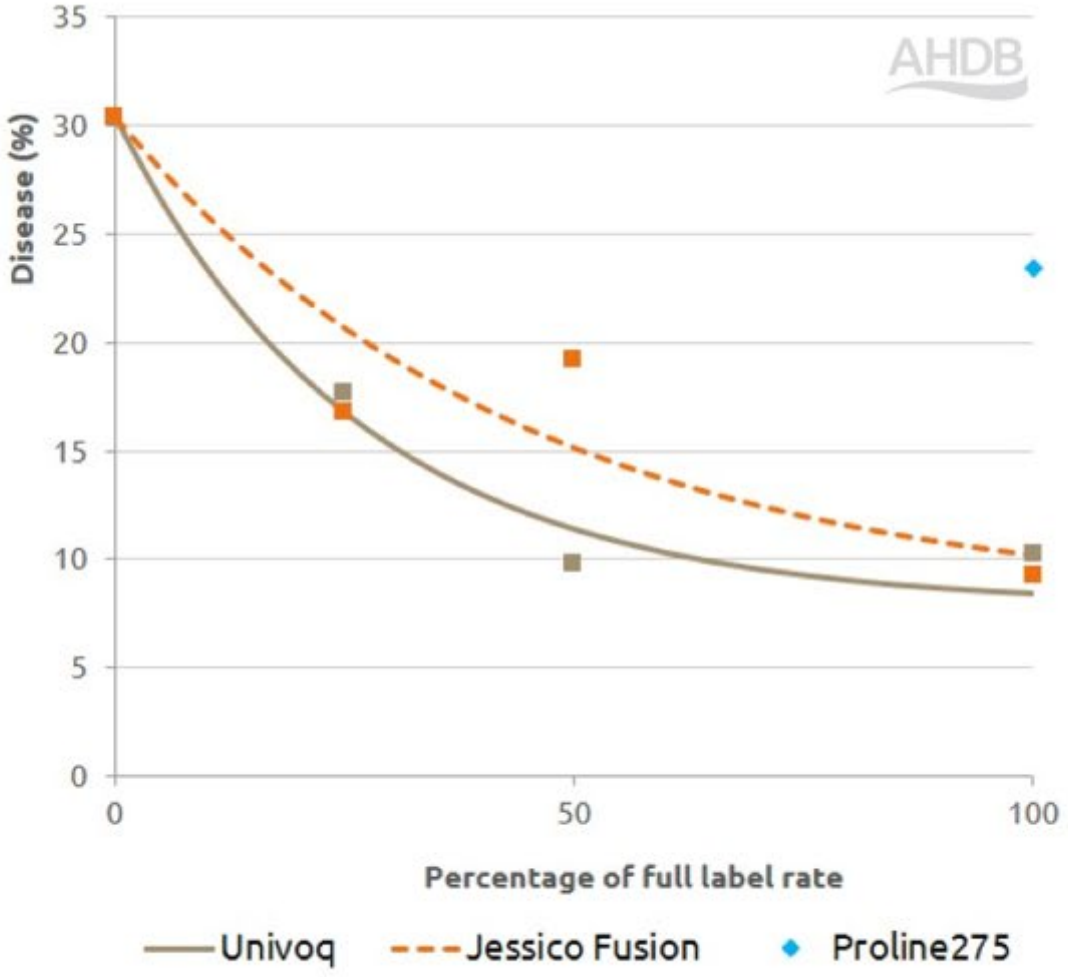
Trial site		Protectant	Eradicant	Mixed
1	Rosemaund T2	✓	✓	✓
2	Sutton Scotney T1	✓		
3	East Lothian T2		✓	
7	Carlow T2	✓		
8	Cardigan T2	✓	✓	

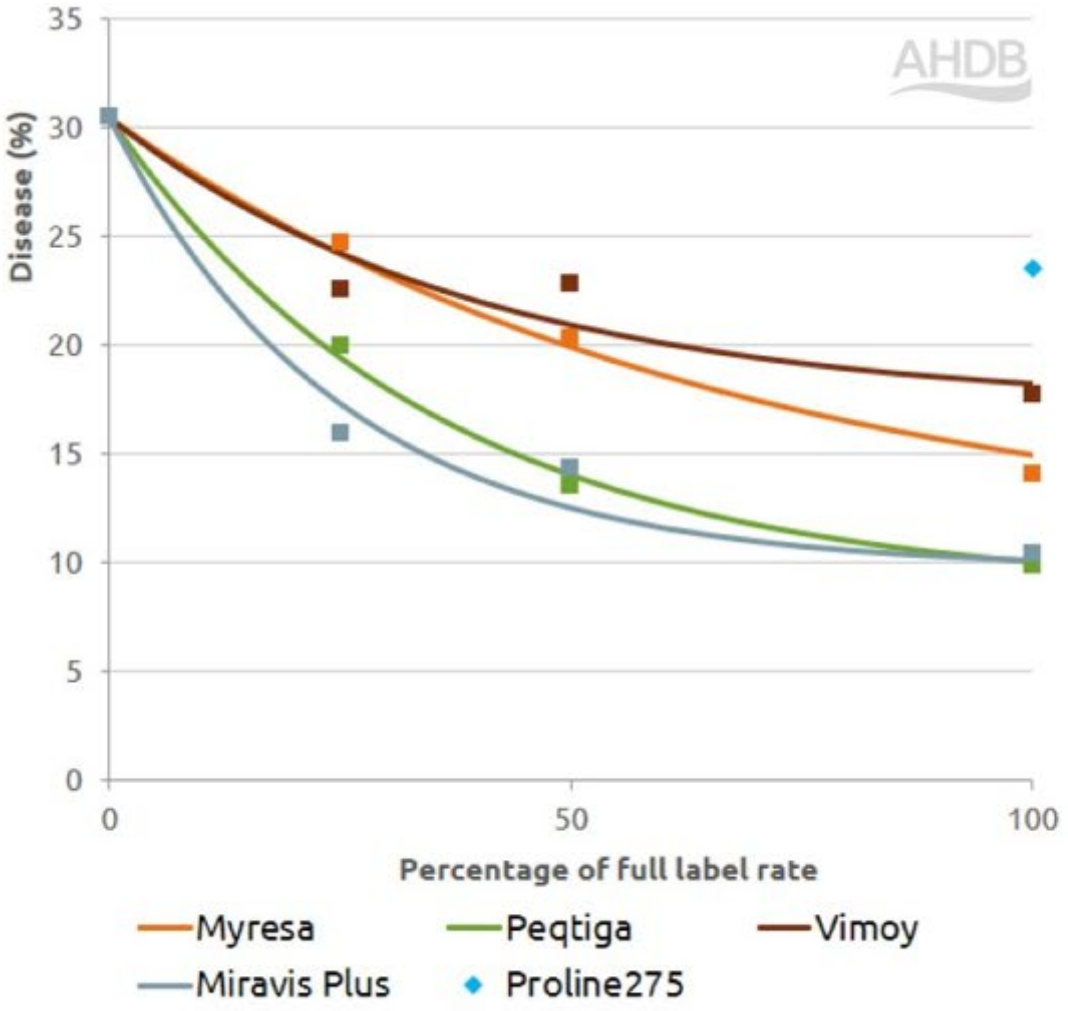
Septoria protectant 2025 (4 trials)



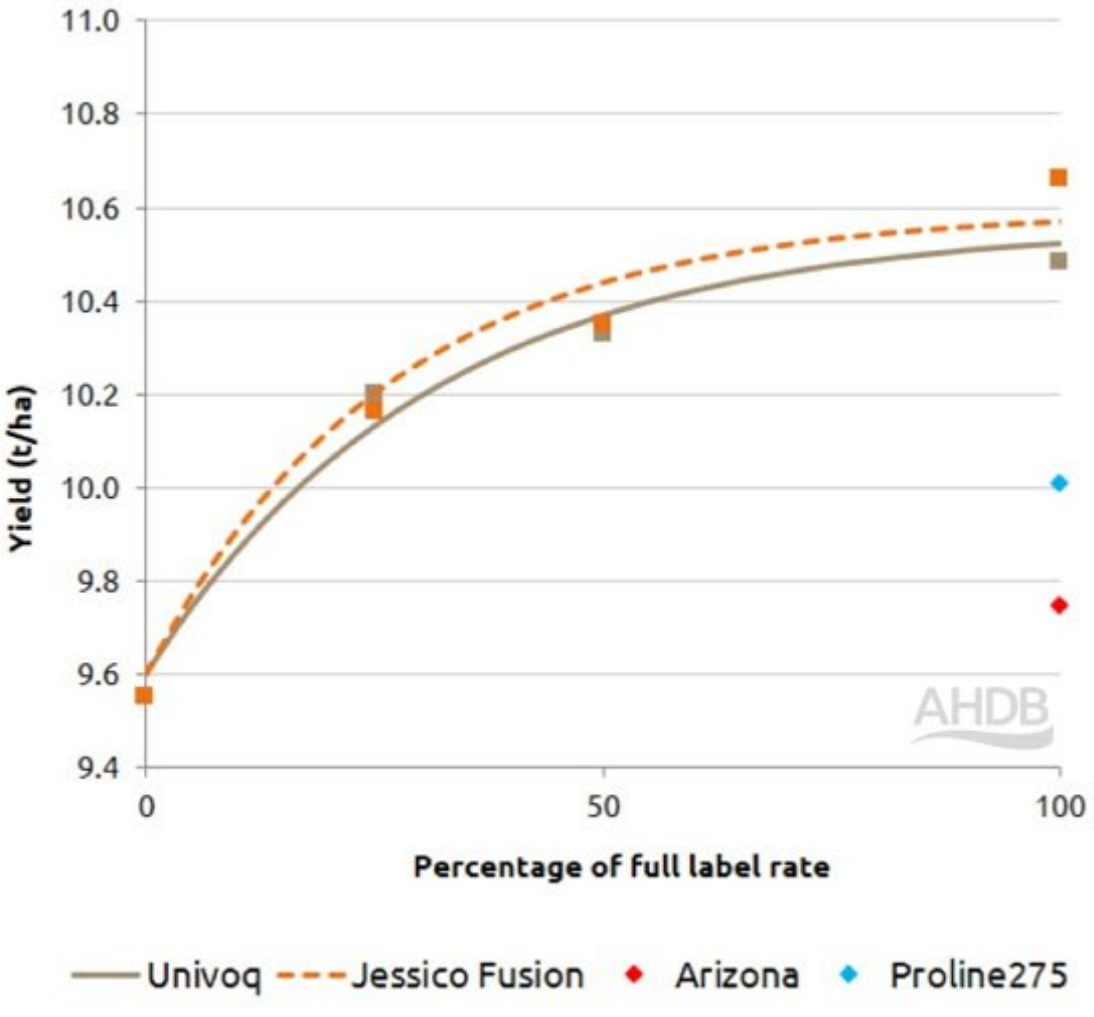


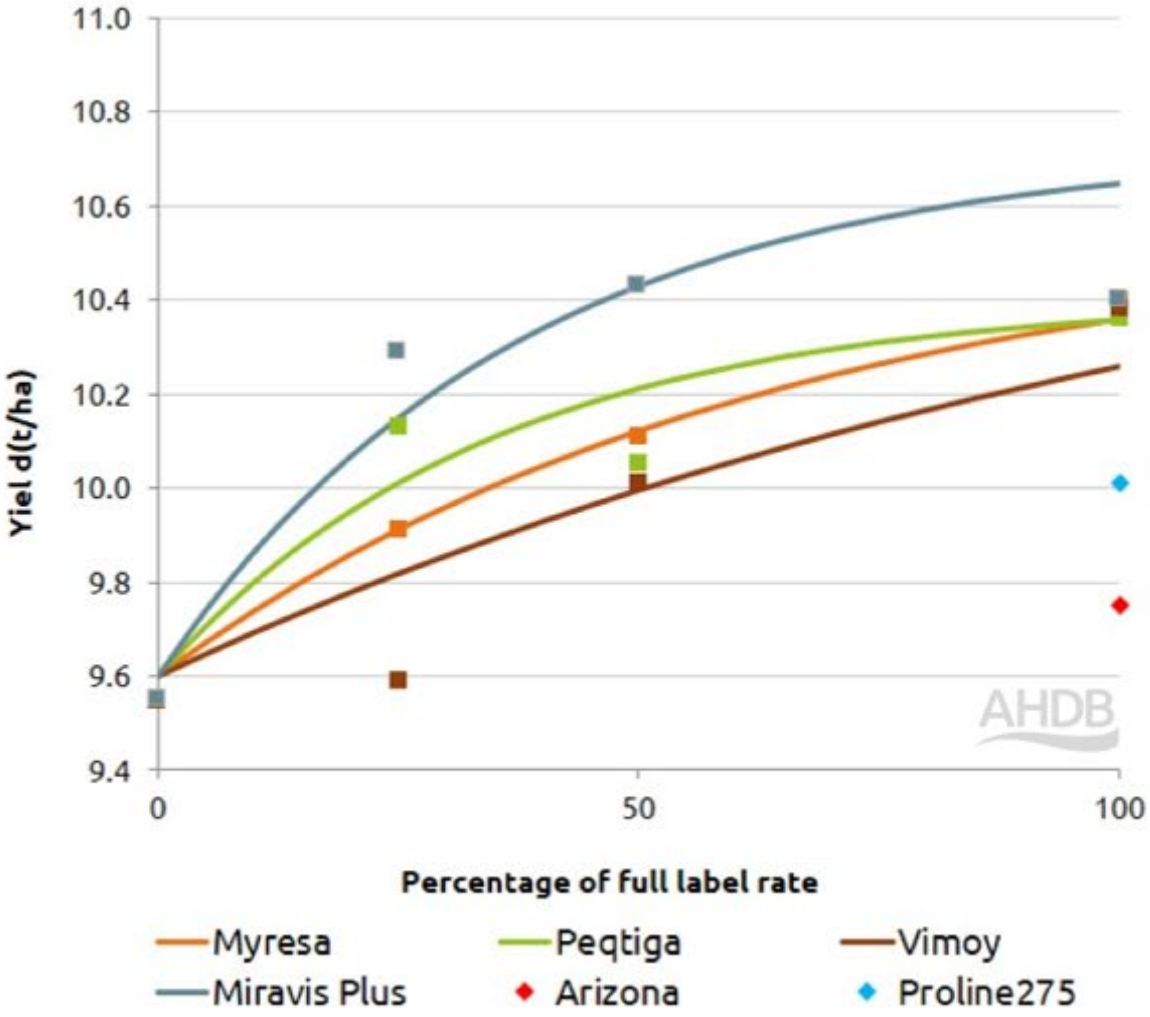
Septoria eradicant 2025 (3 trials)



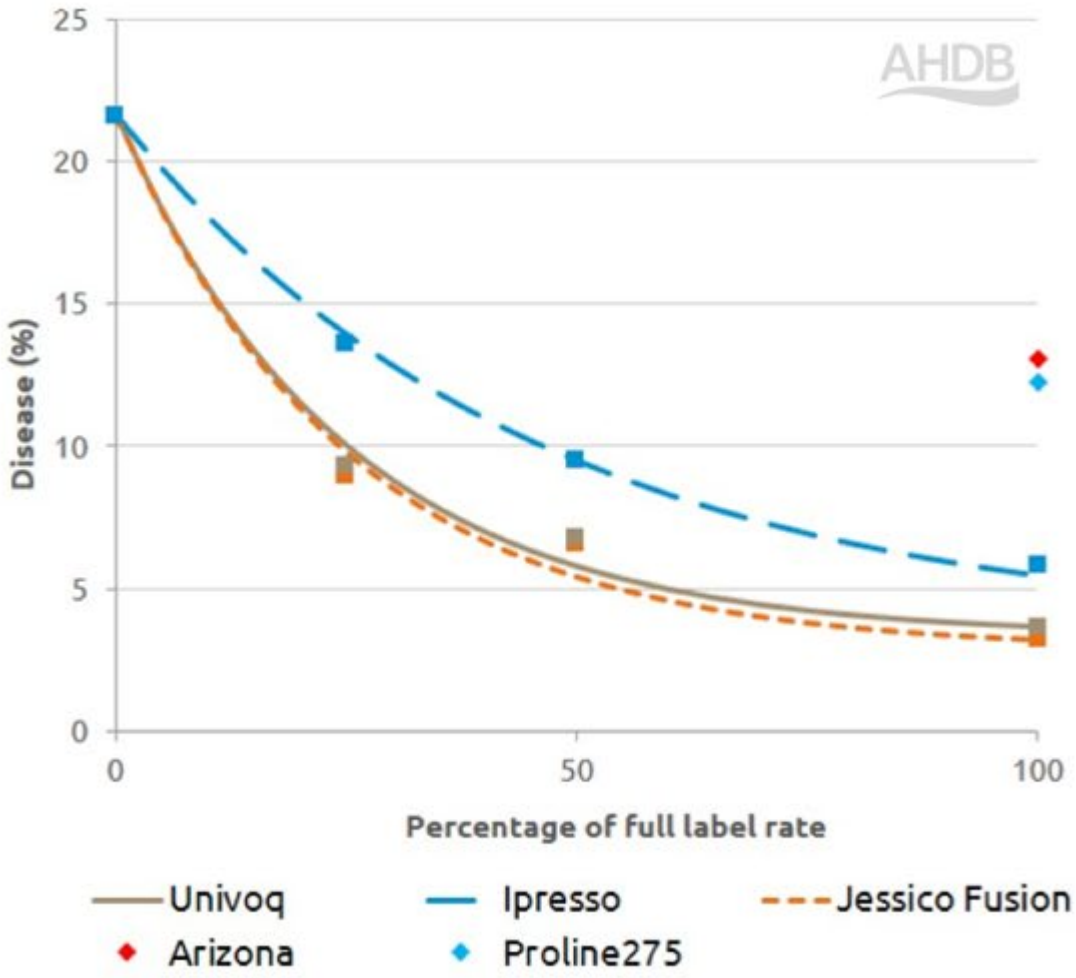


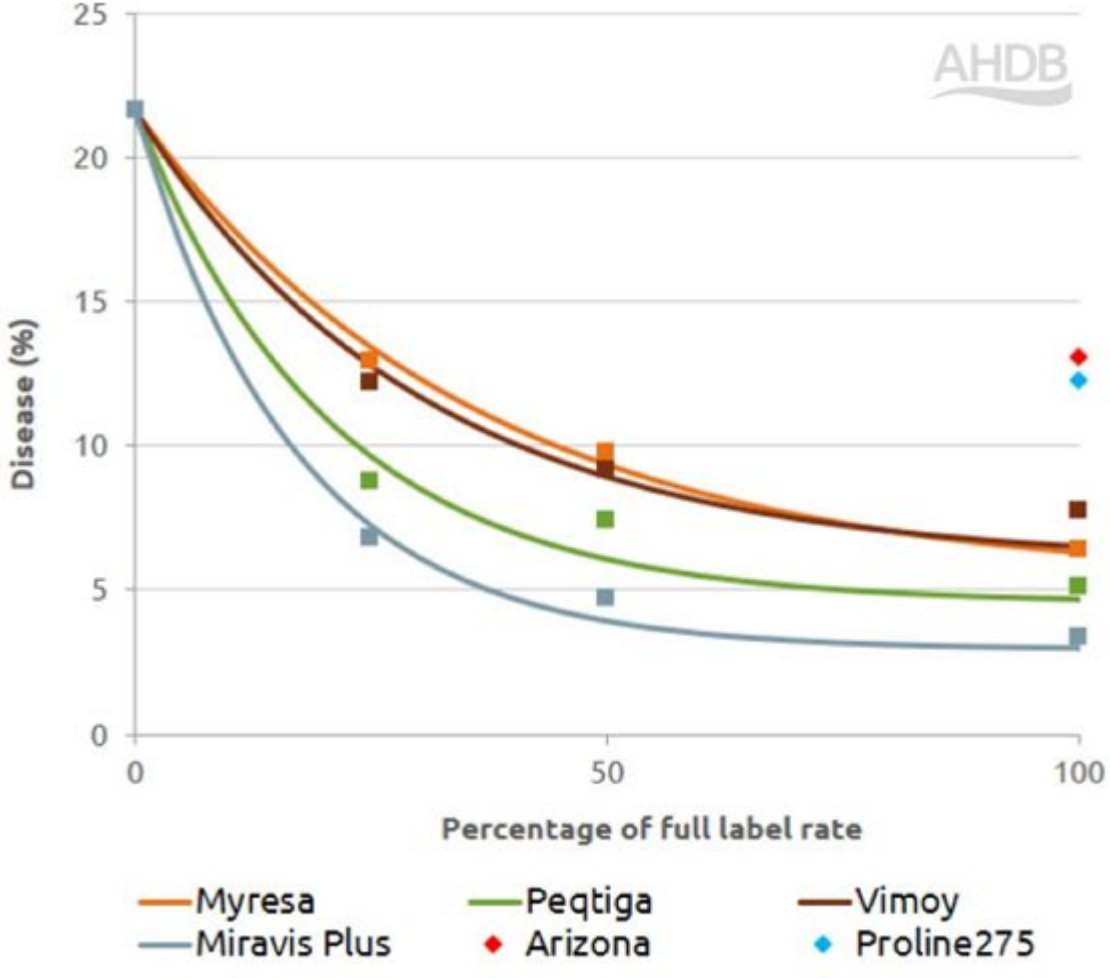
Septoria yield 2025 (4 trials)



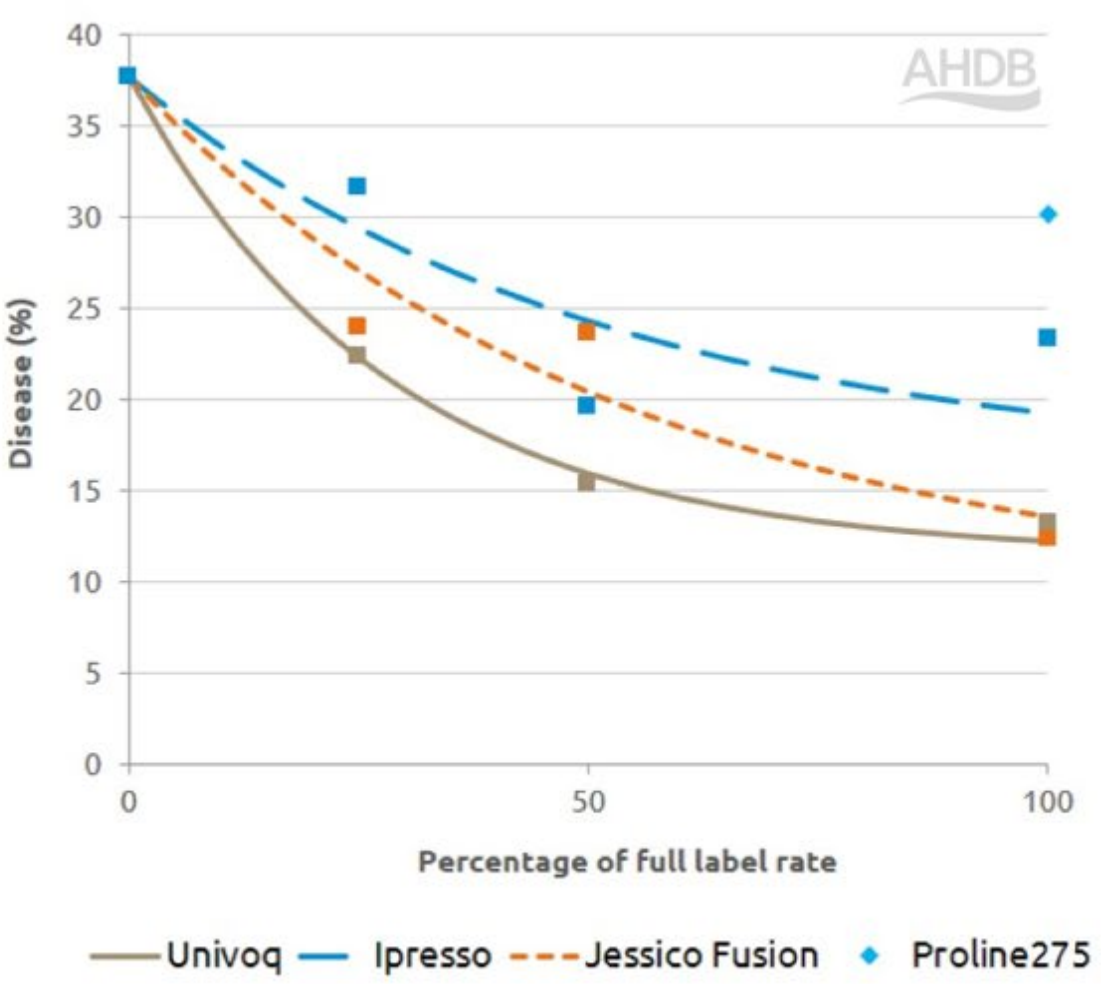


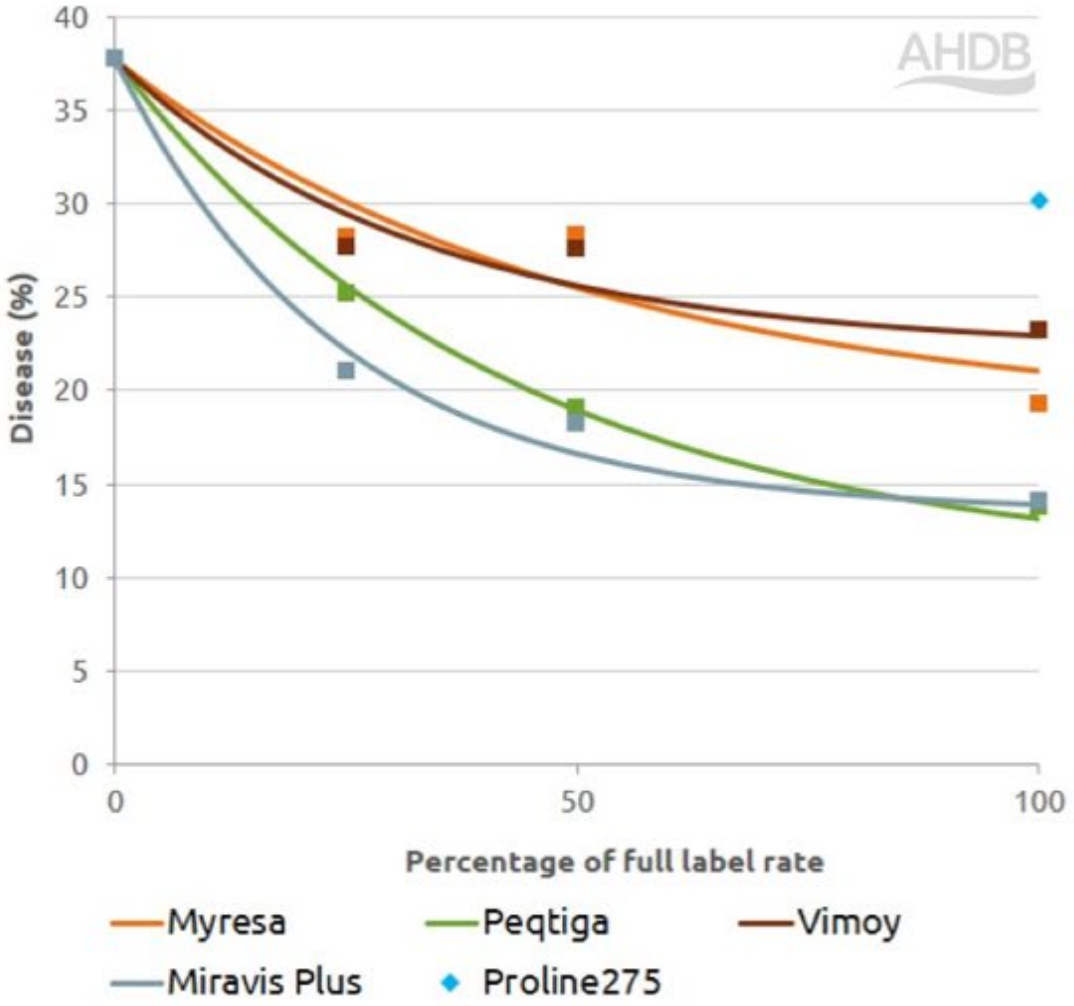
Septoria protectant 2023–25 (13 trials)



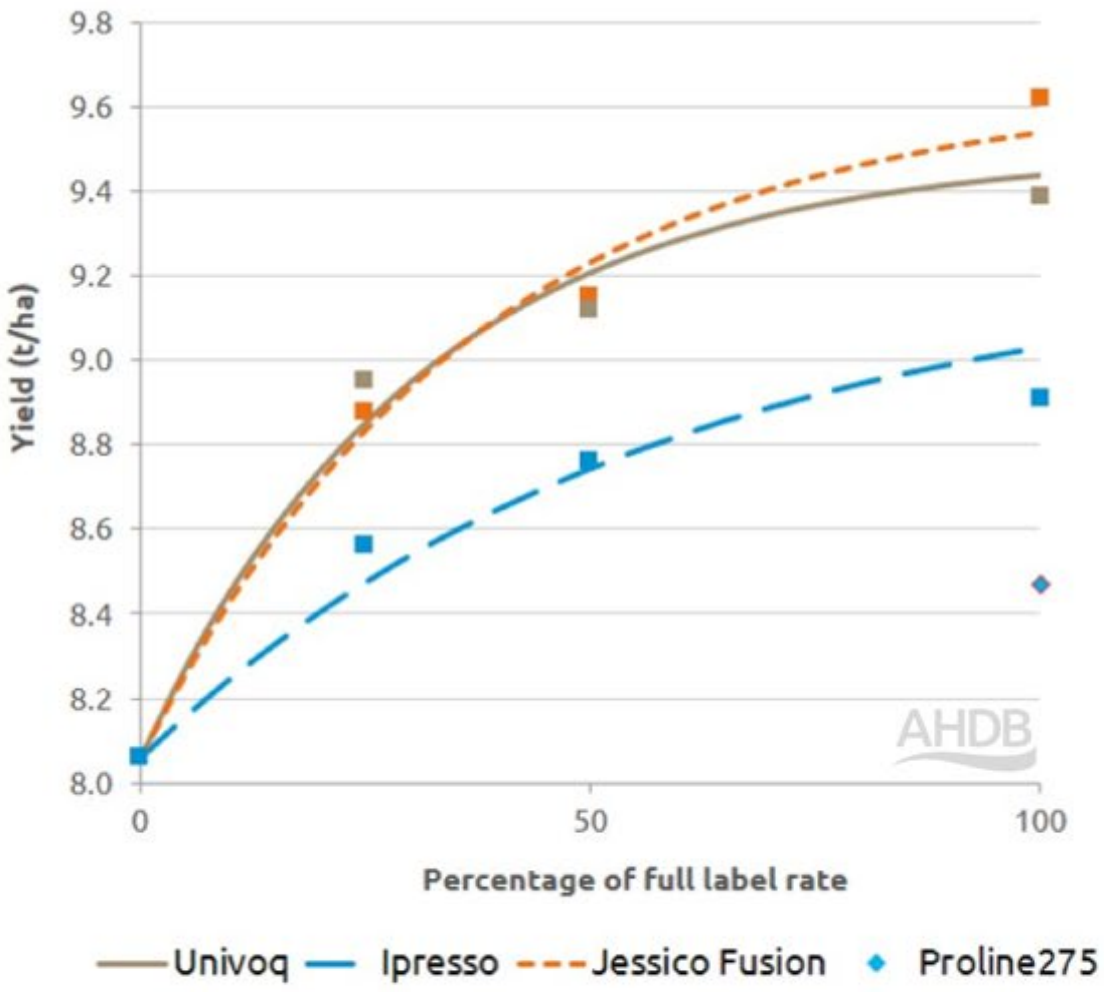


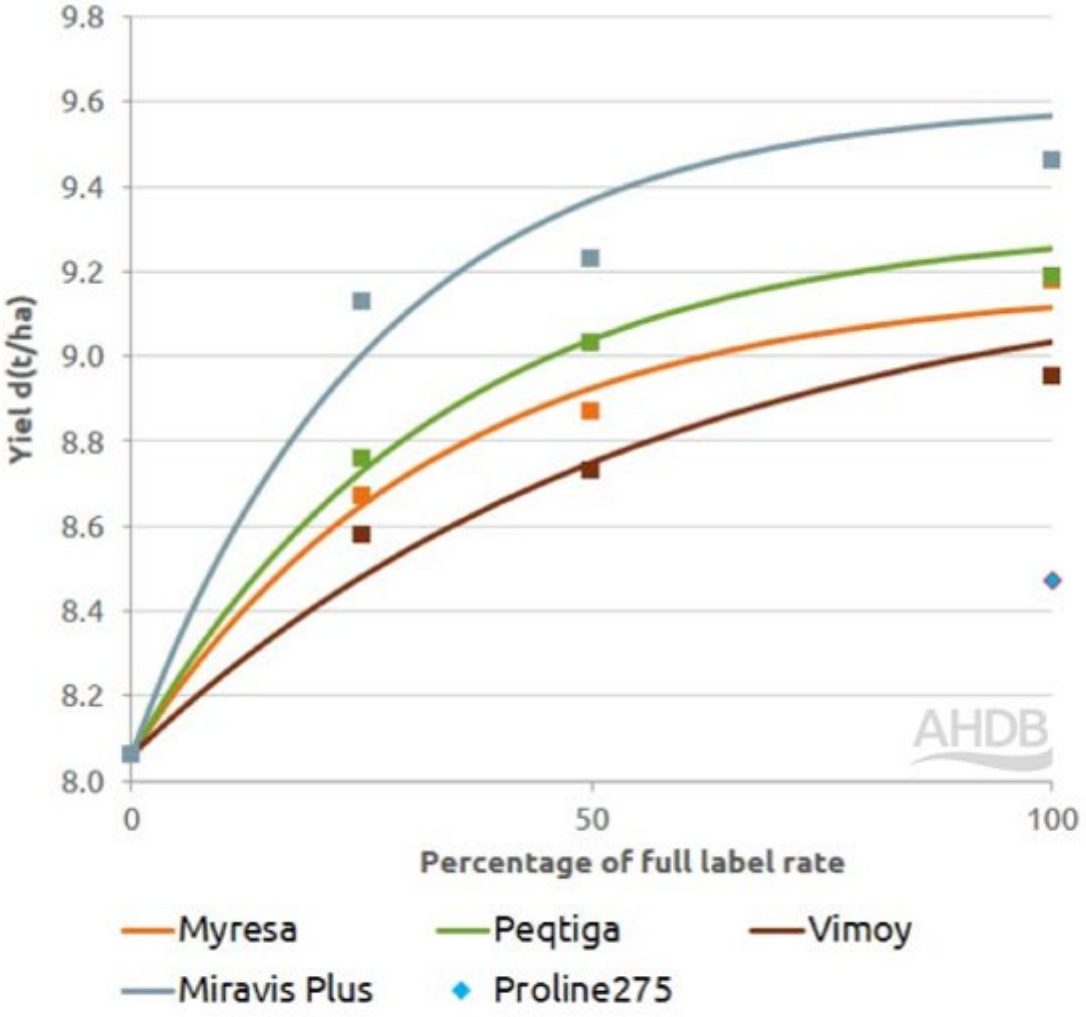
Septoria eradicant 2023–25 (5 trials)





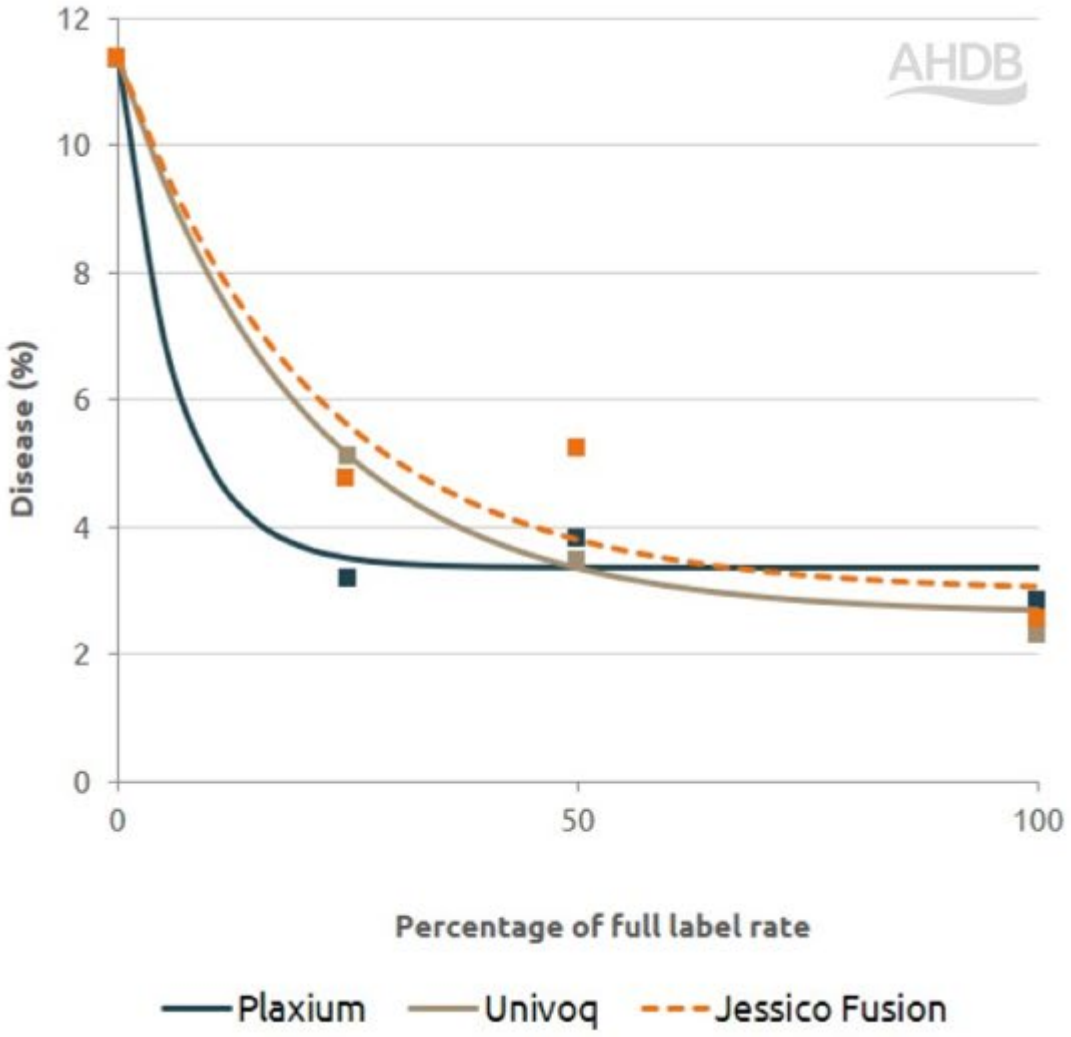
Septoria yield 2023–25 (12 trials)

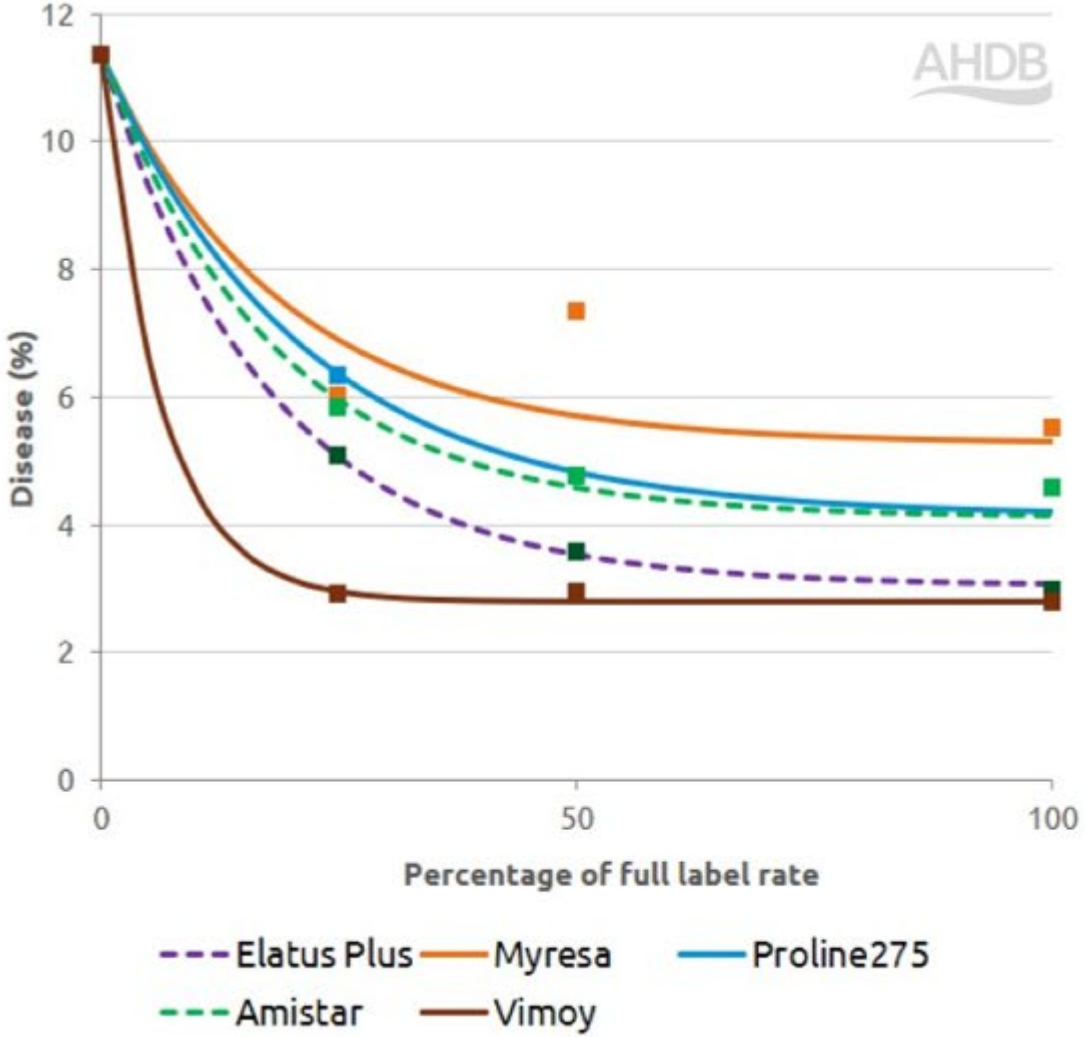




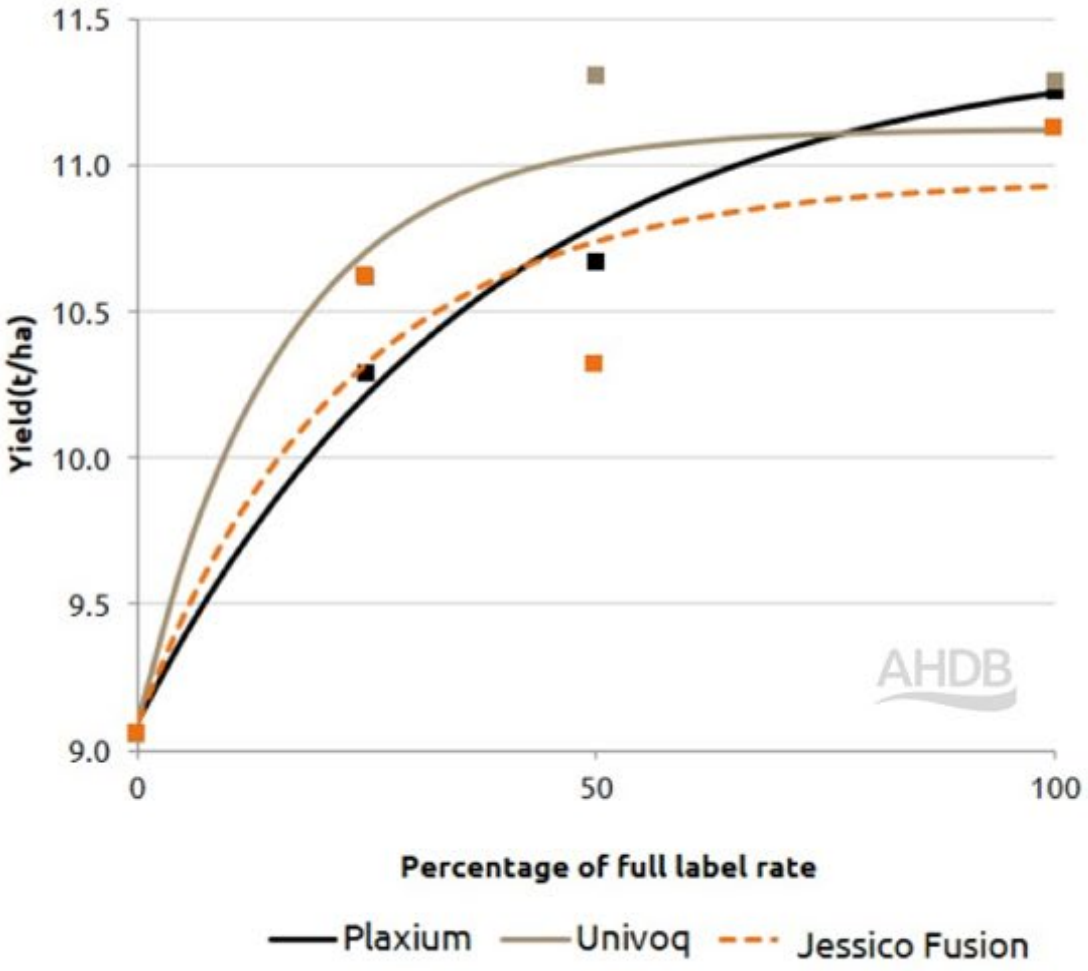
Yellow rust and brown rust 2025

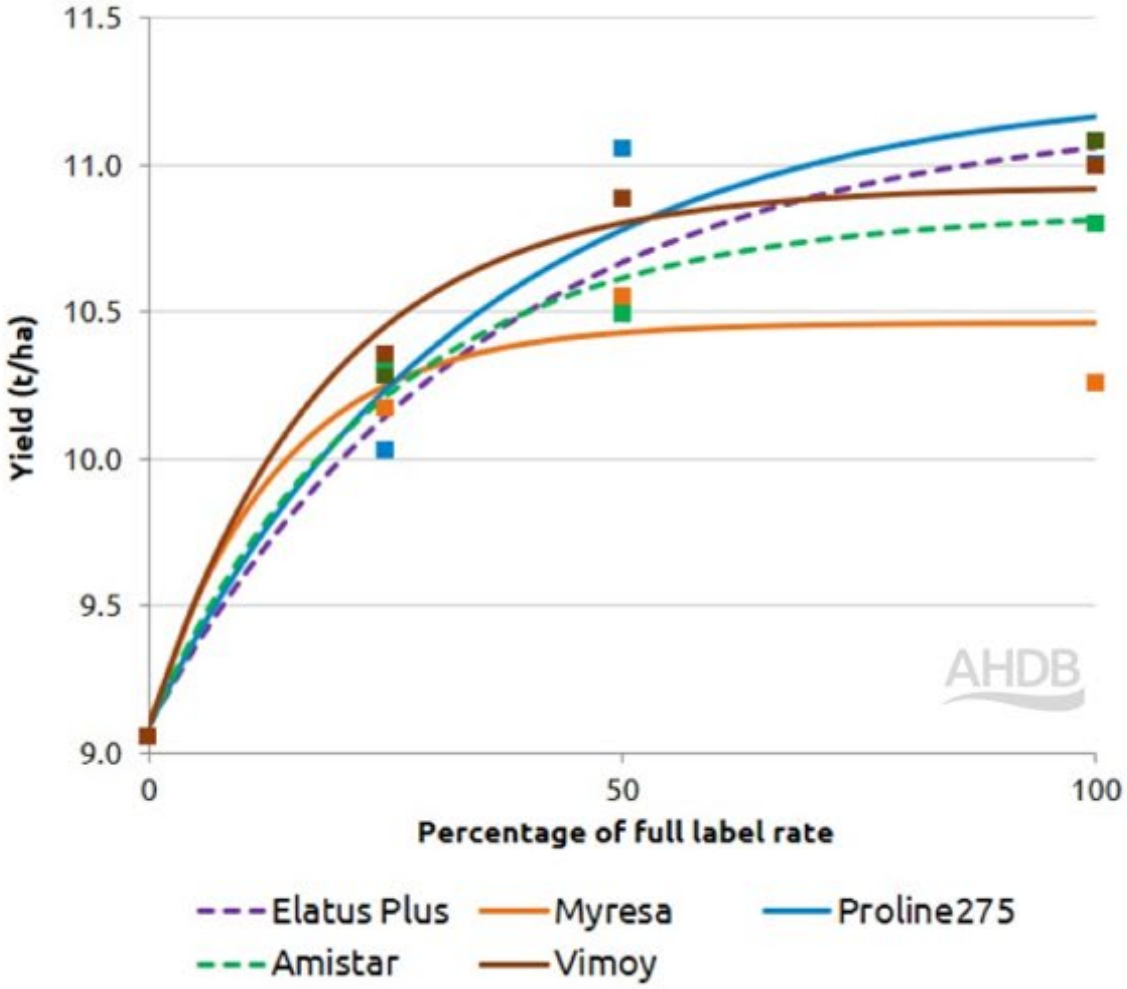
Yellow rust 2025 (1 trial)



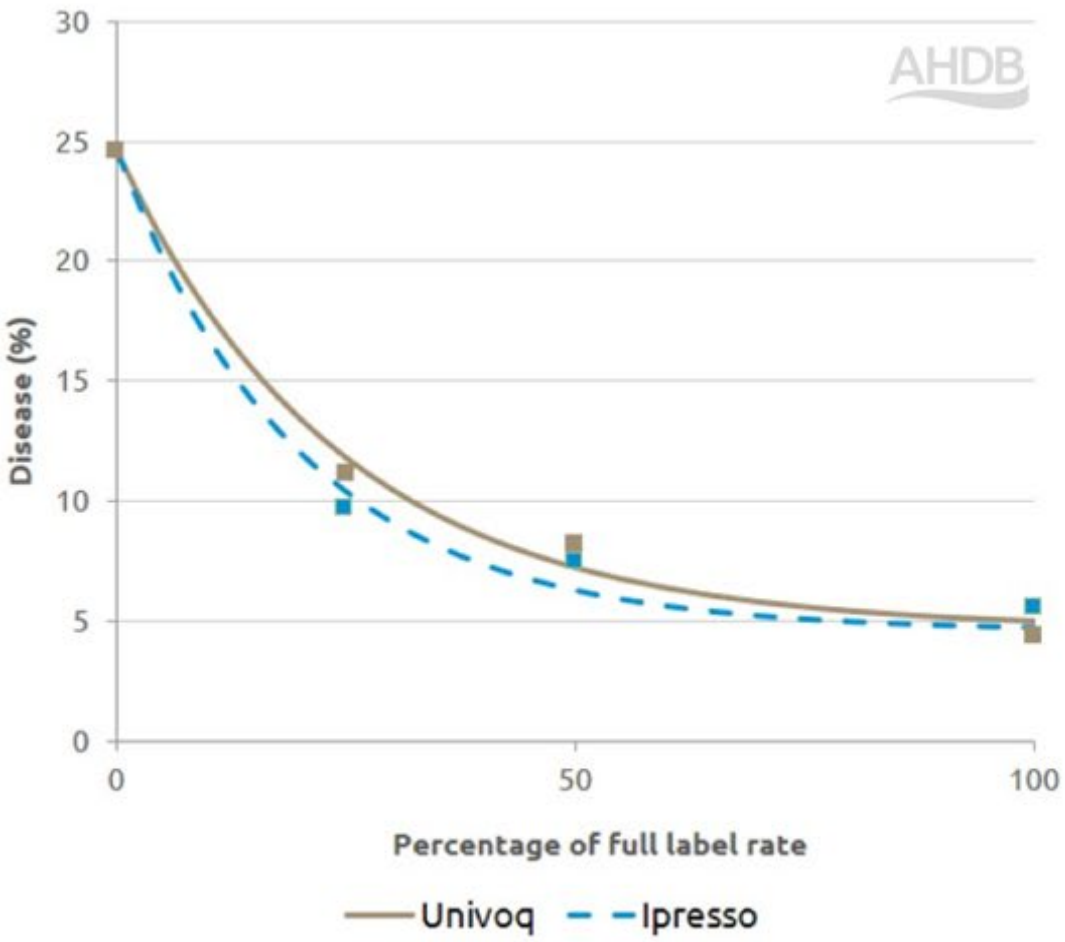


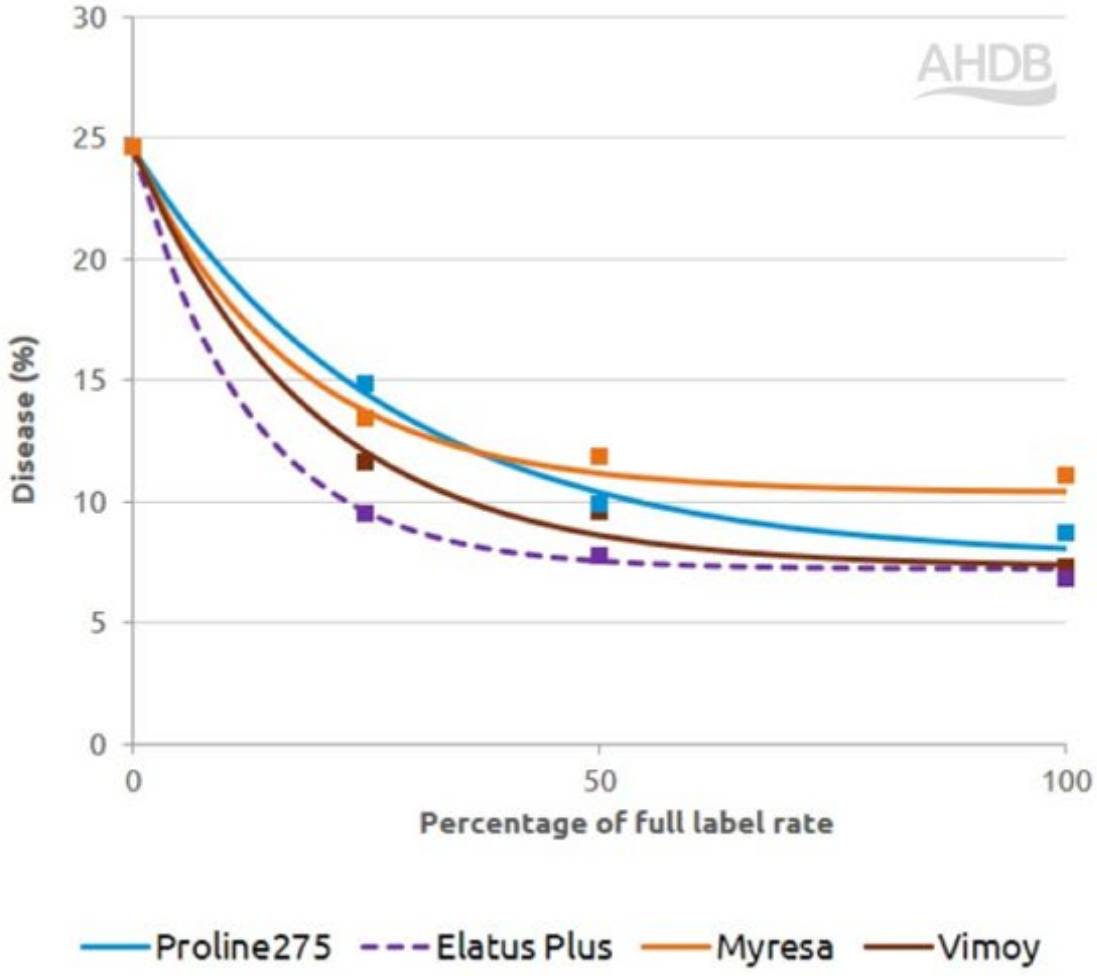
Yellow rust yield 2025 (1 trial)



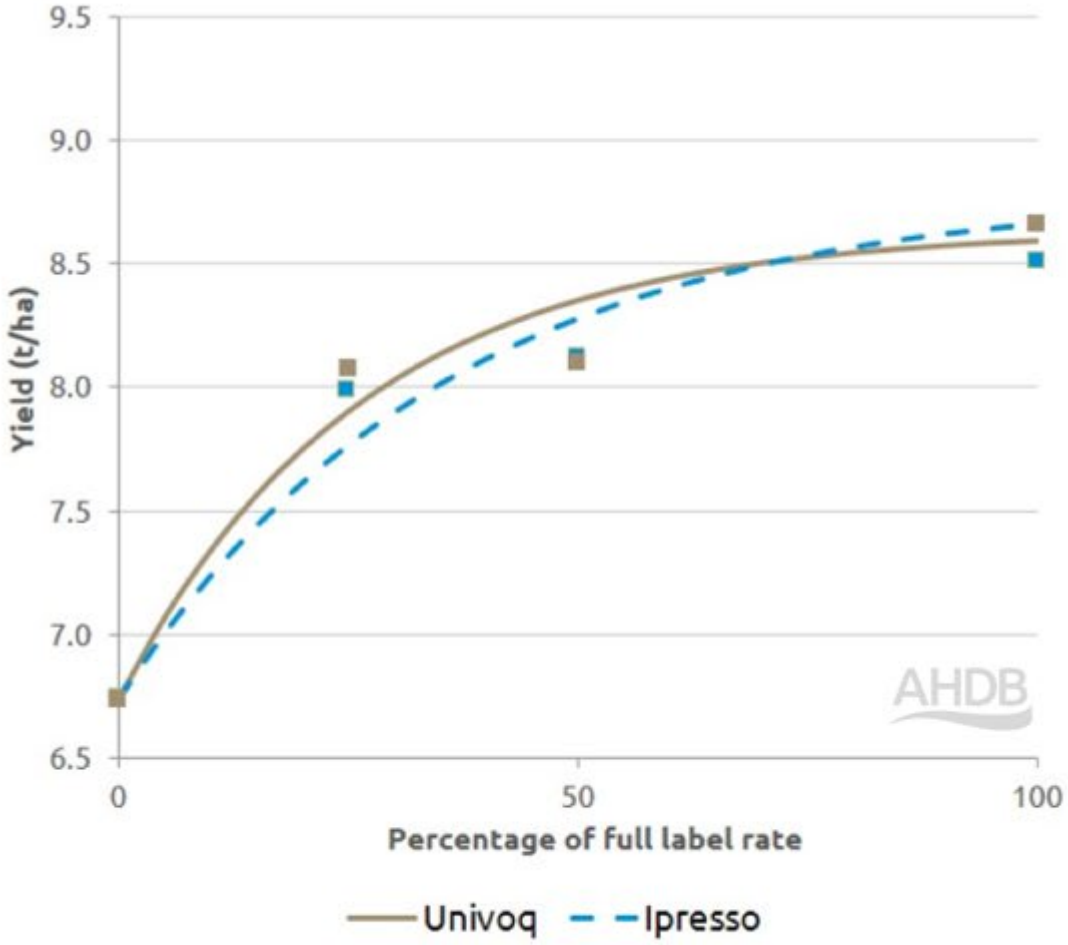


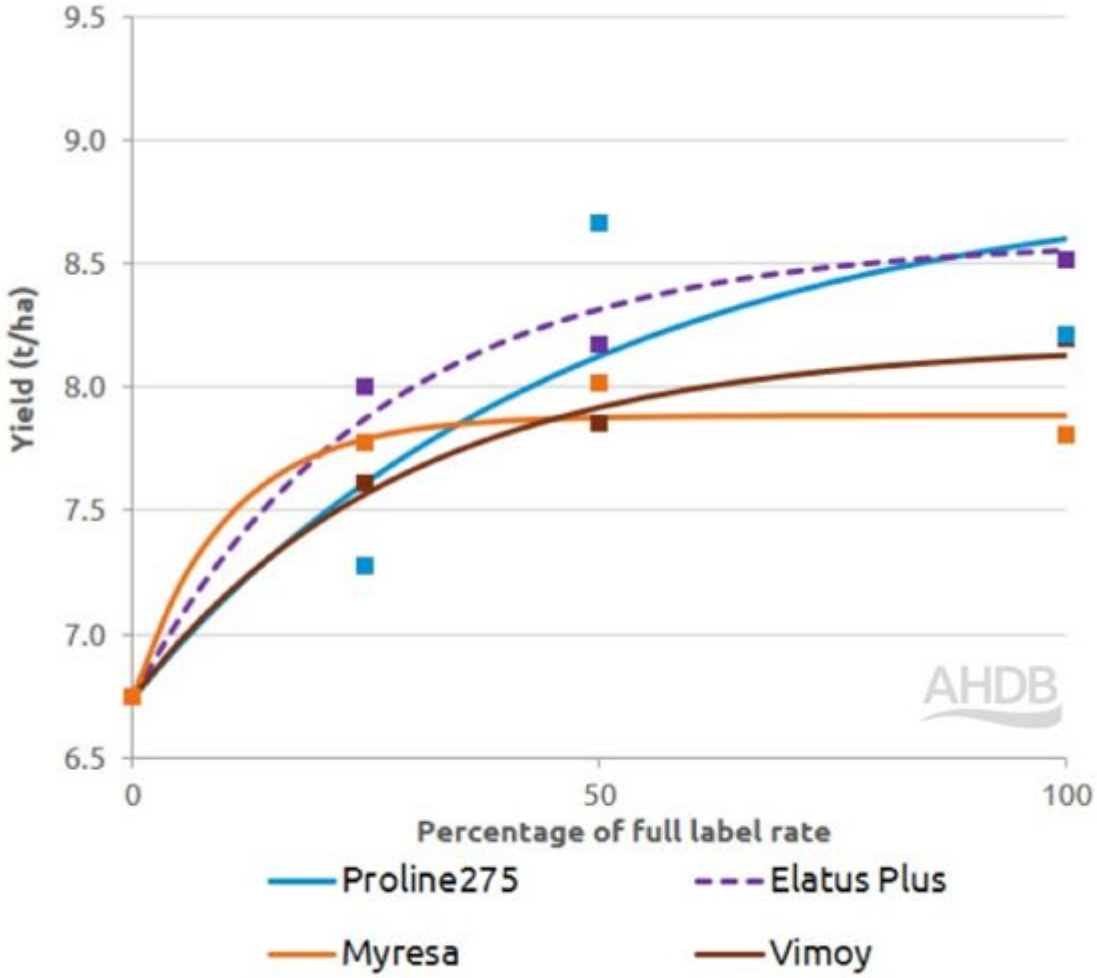
Yellow rust 2023–25 (3 trials)



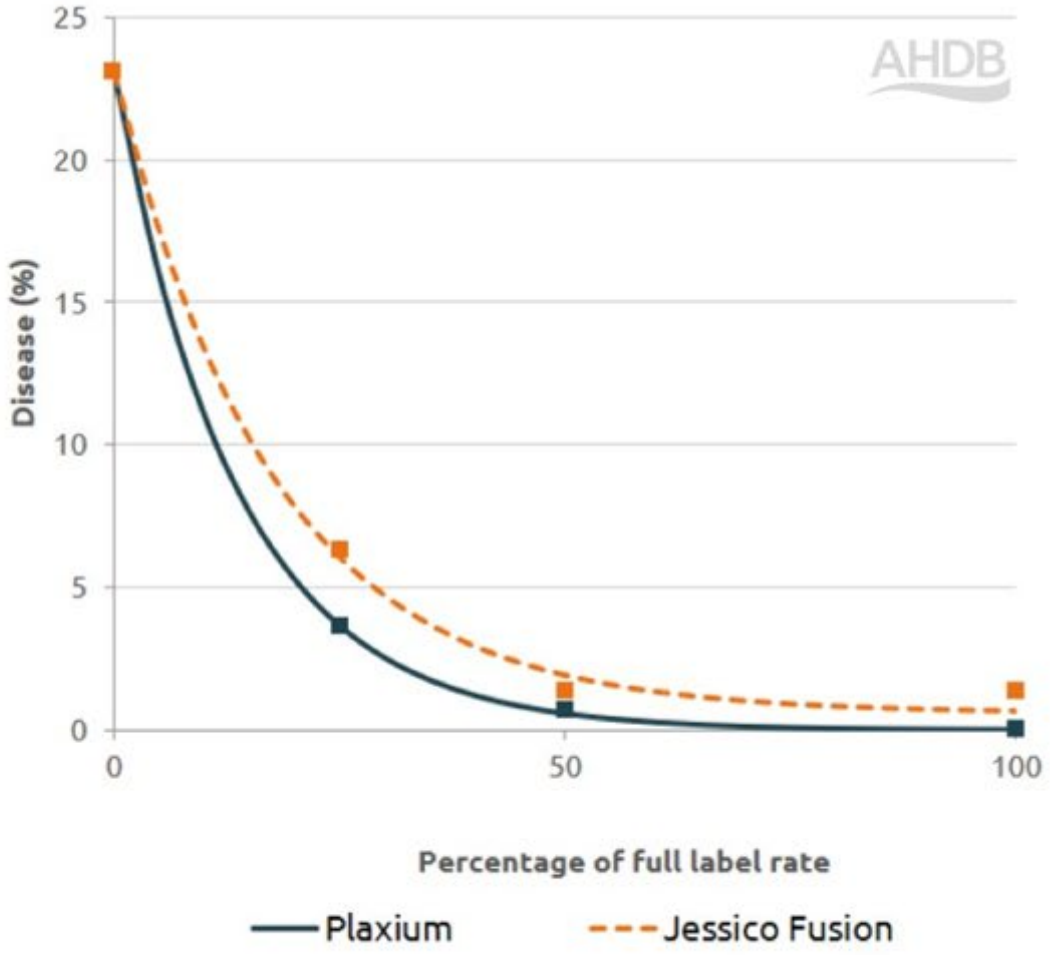


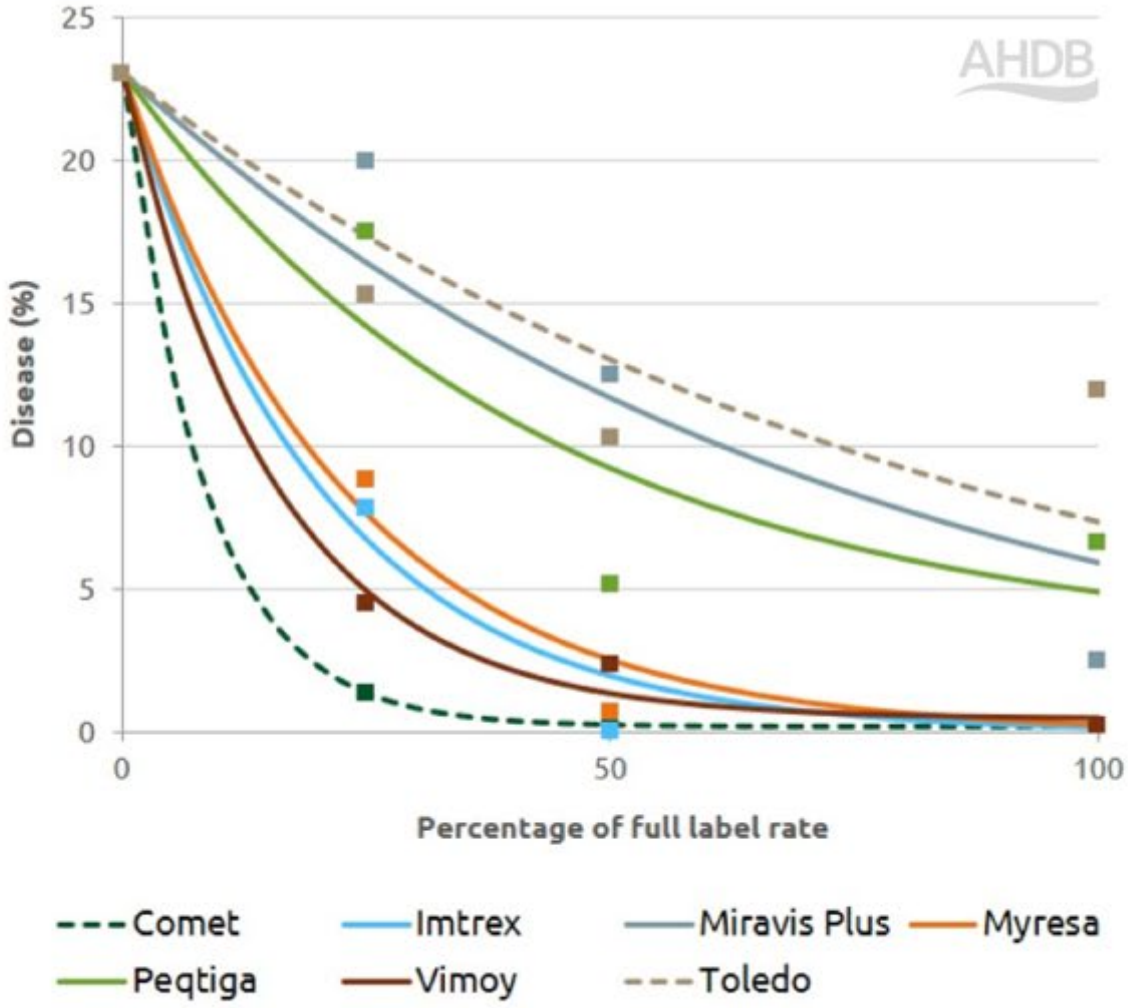
Yellow rust yield 2023–25 (3 trials)



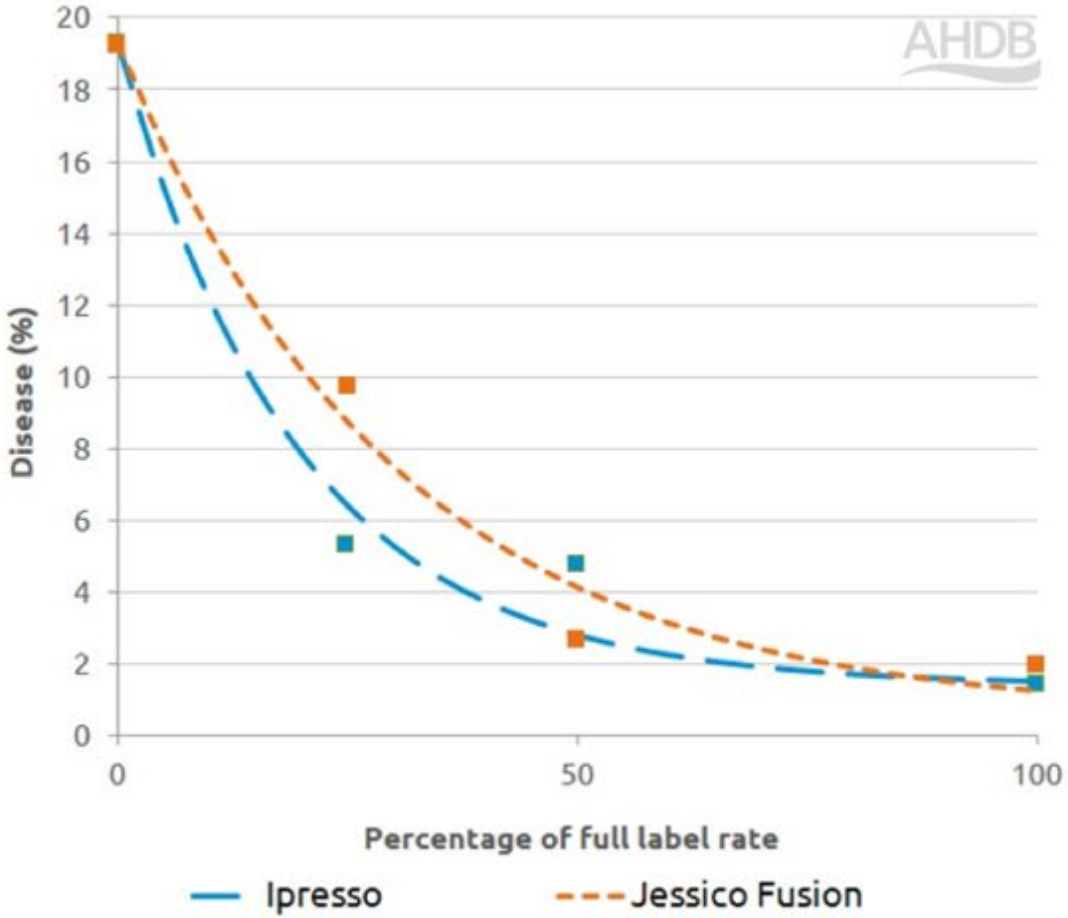


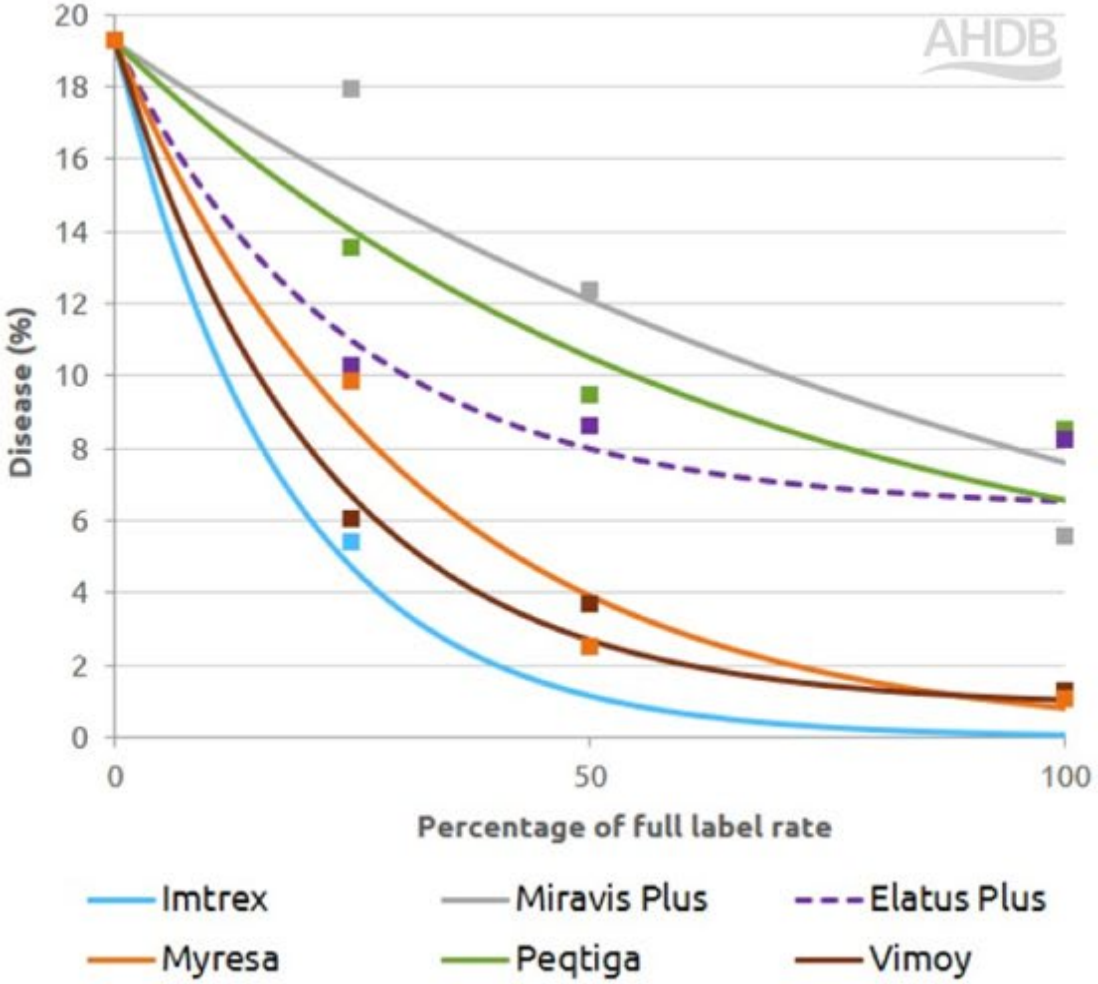
Brown rust 2025 (1 trial)



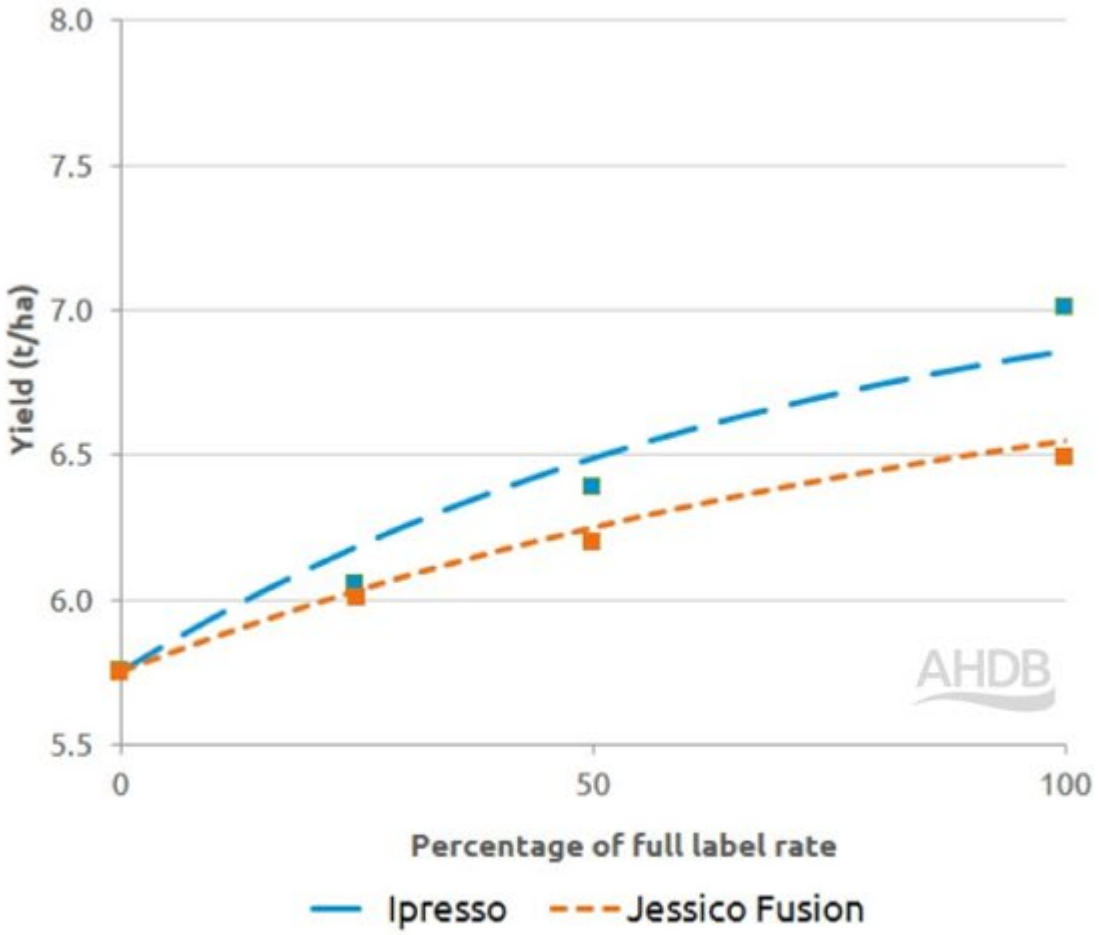


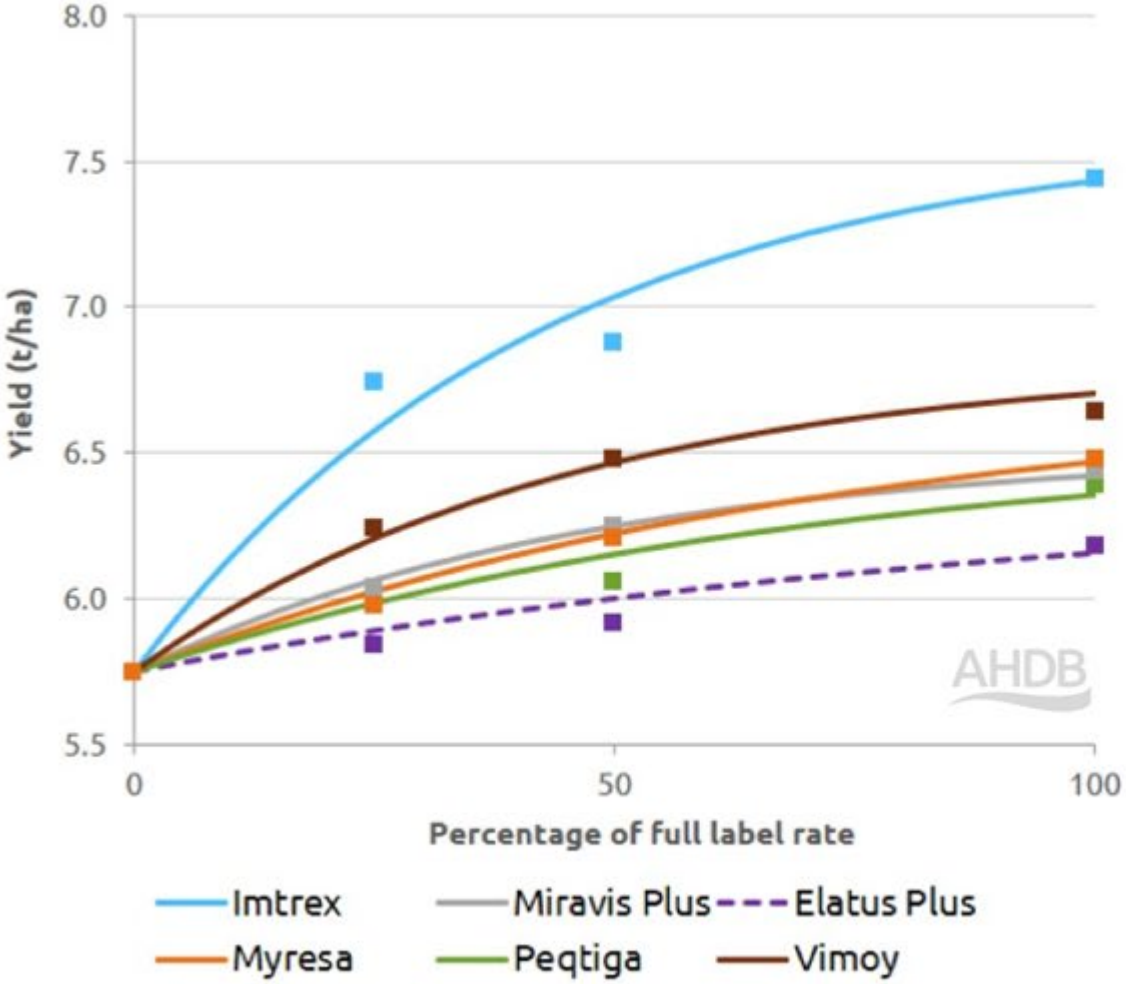
Brown rust 2023–25 (3 trials)





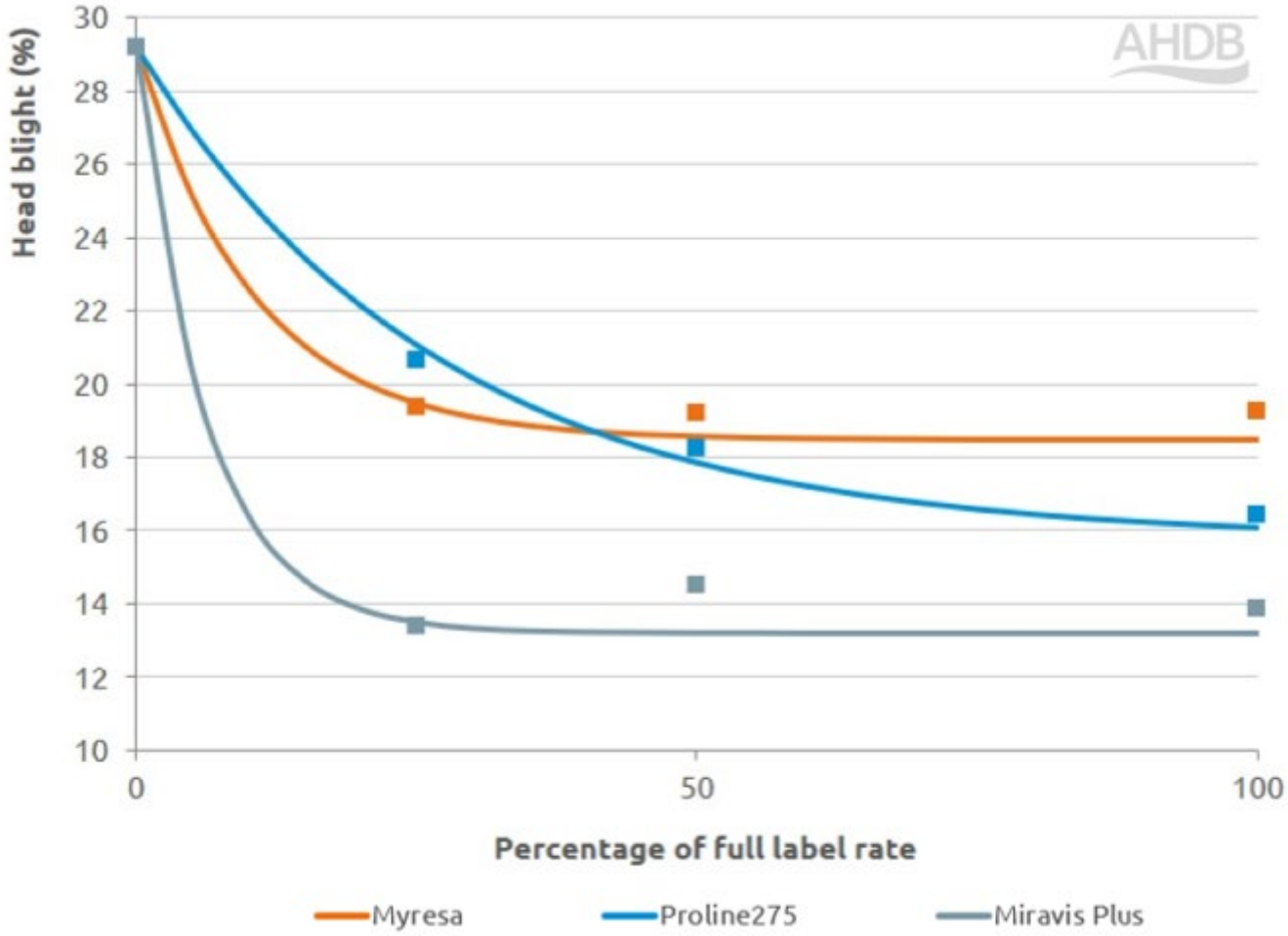
Brown rust yield 2023–25 (3 trials)





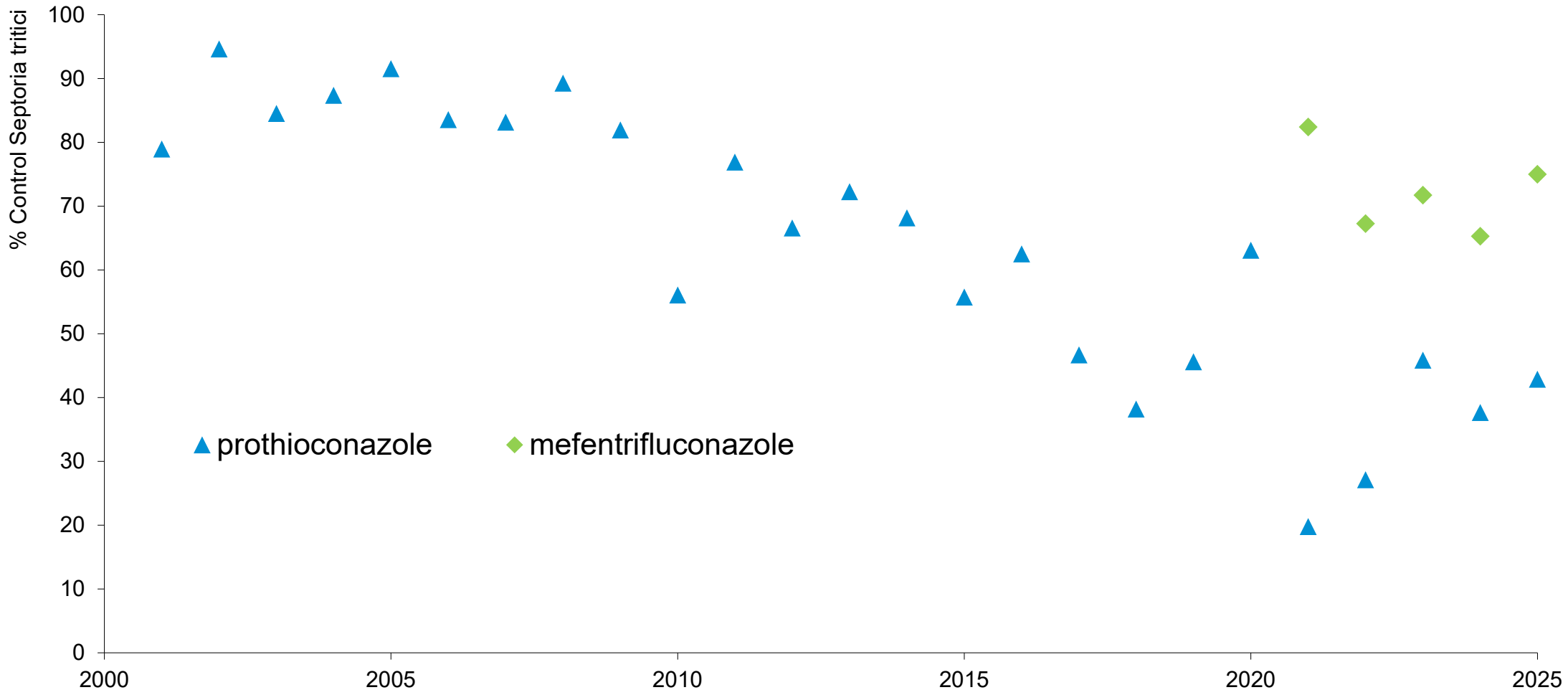
Head blight 2022–24 (3 trials)

No data available for 2025



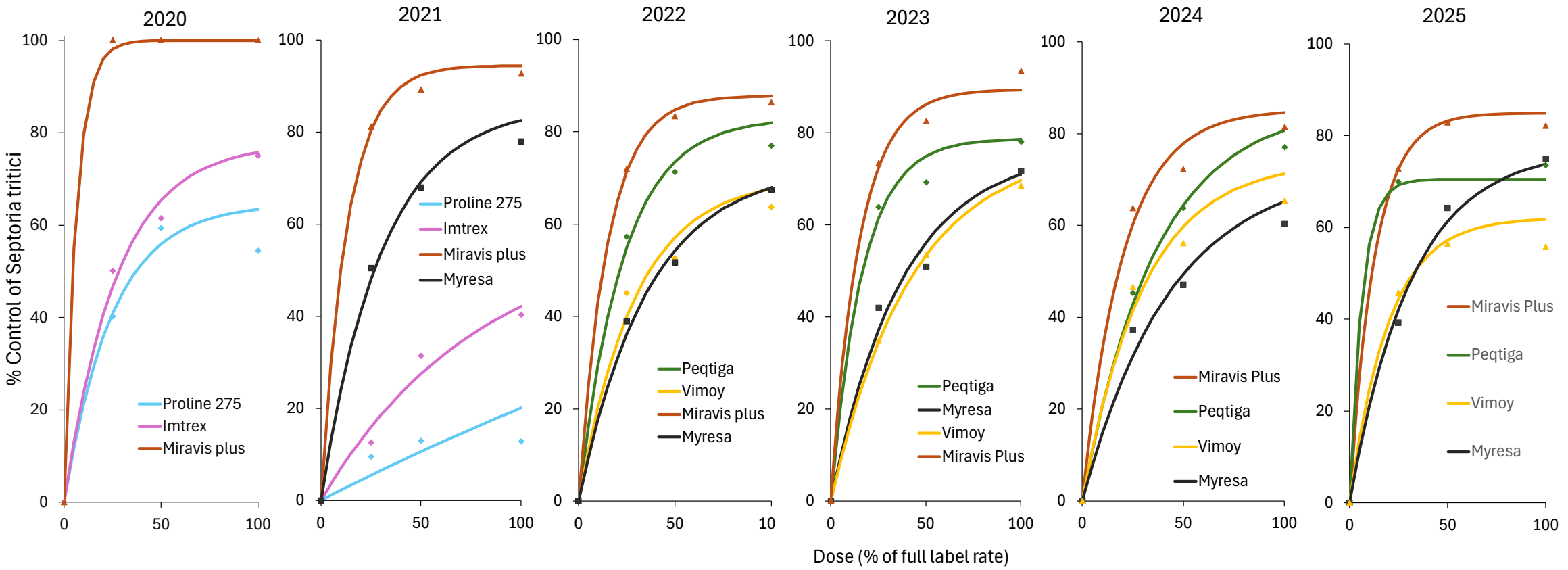
Changes in field efficacy of azoles on septoria

Full label rates and protectant situations



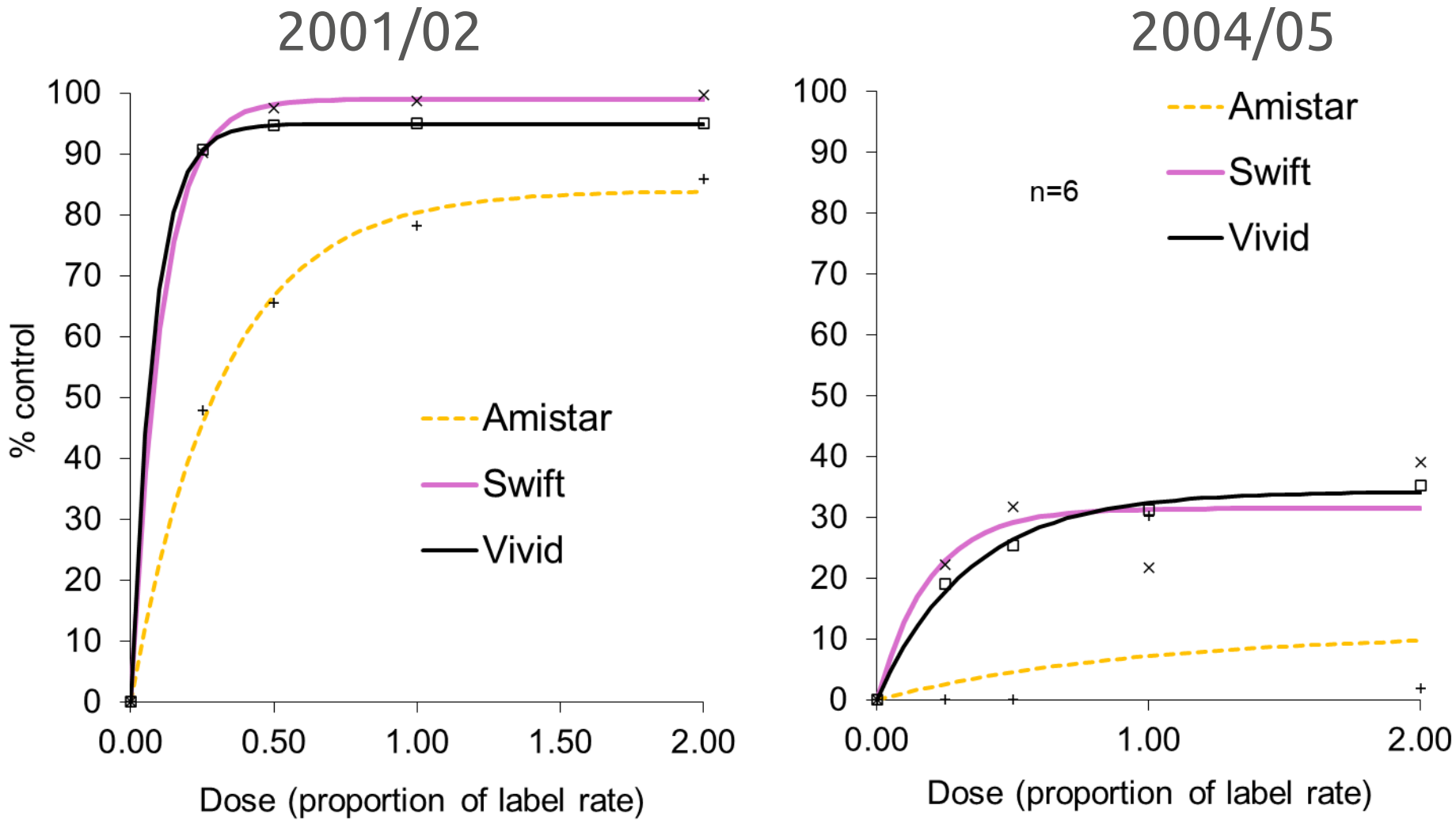
Efficacy of single active products 2020–25

Protectant data



The G143A mutation (early 2000s)

Efficacy of QoI fungicides in protectant situations



Monitoring and understanding fungicide resistance development in cereal pathogens to inform disease management strategies

Project number 21120018a (led by Niab)

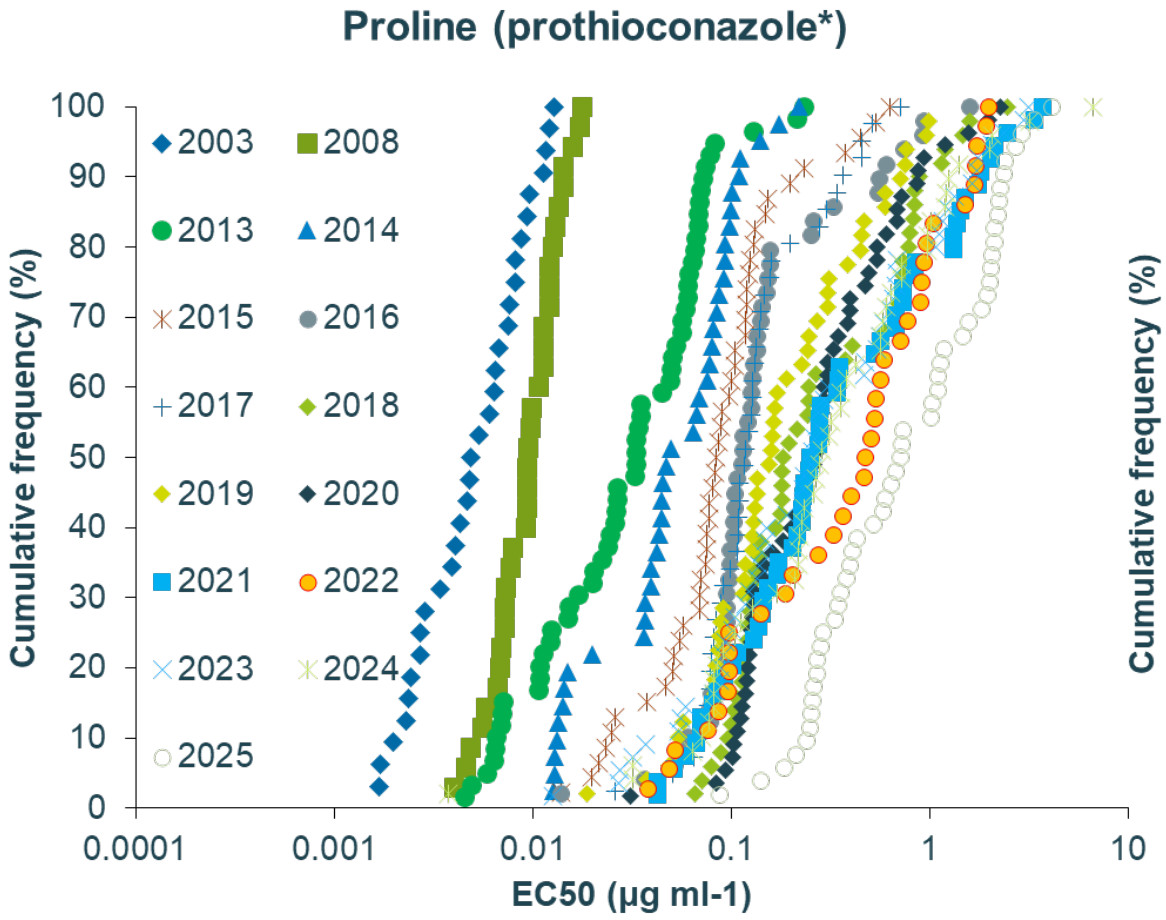
CEREALS & OILSEEDS

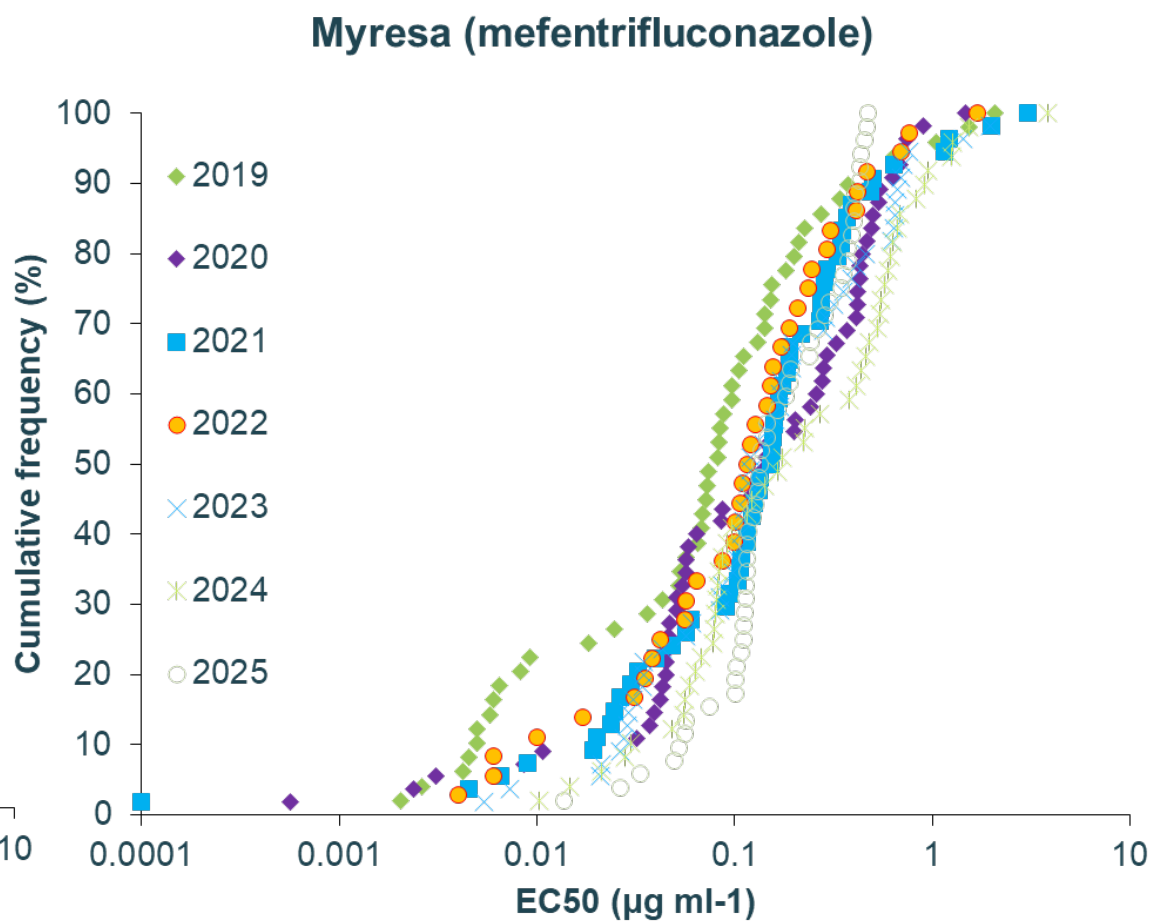
Projects aims

1. Measure the sensitivity of septoria tritici isolates to azoles, SDHIs and QiIs (in vitro), and compare with previous years, through early season sampling
2. Measure the effect of spraying specific treatments on fungicide sensitivity in septoria populations sampled in the AHDB fungicide performance trials
3. Compare these fungicide-sensitivity profiles with isolates sampled from untreated plots
4. Establish the resistance mechanisms and characterise cross-resistance profiles associated with the key resistant genotypes

Changes in azole sensitivity over years

Early season sampling (Rothamsted)

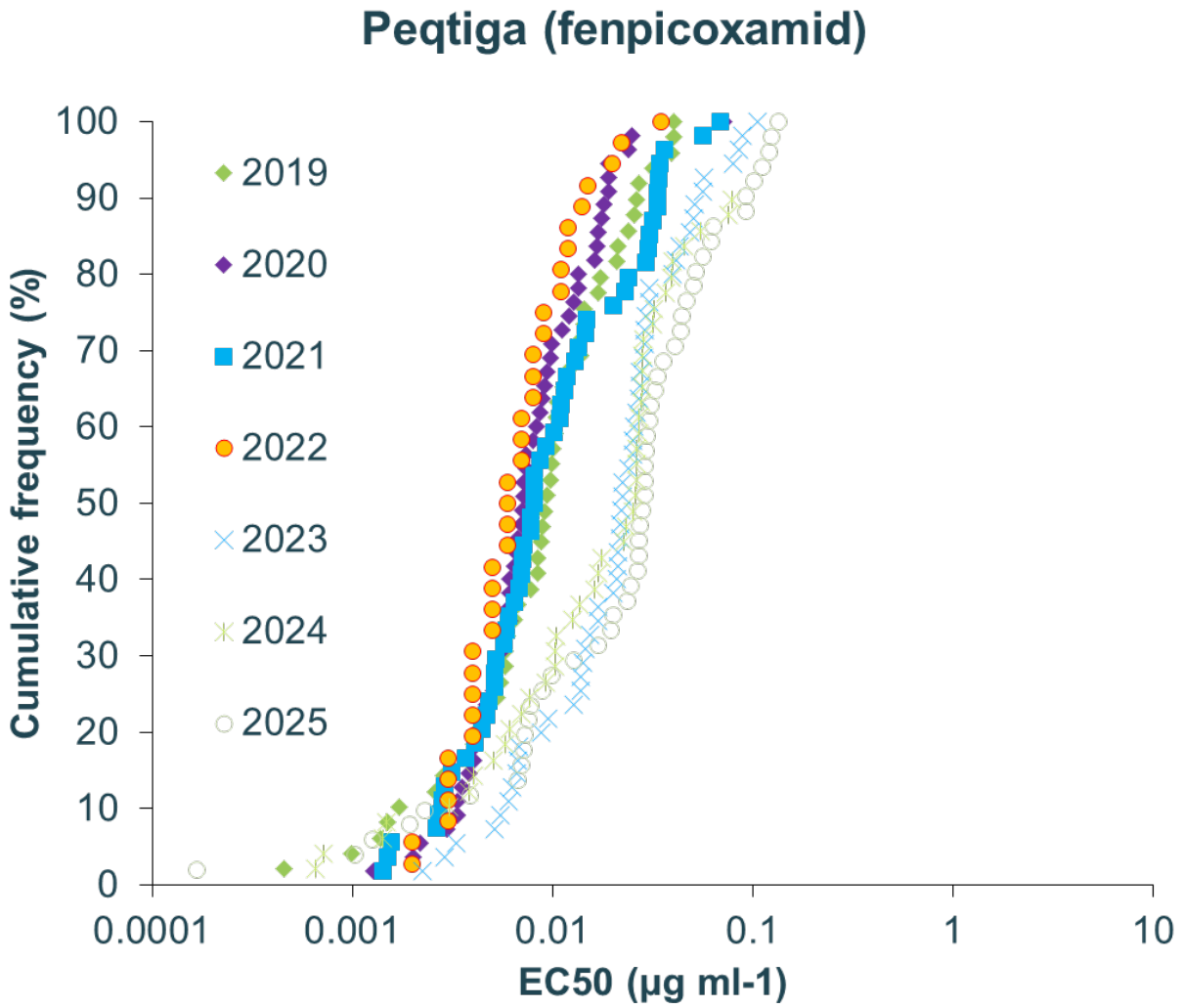




* Prothioconazole sensitivity is tested using Prothio desthio as it converts to this in planta

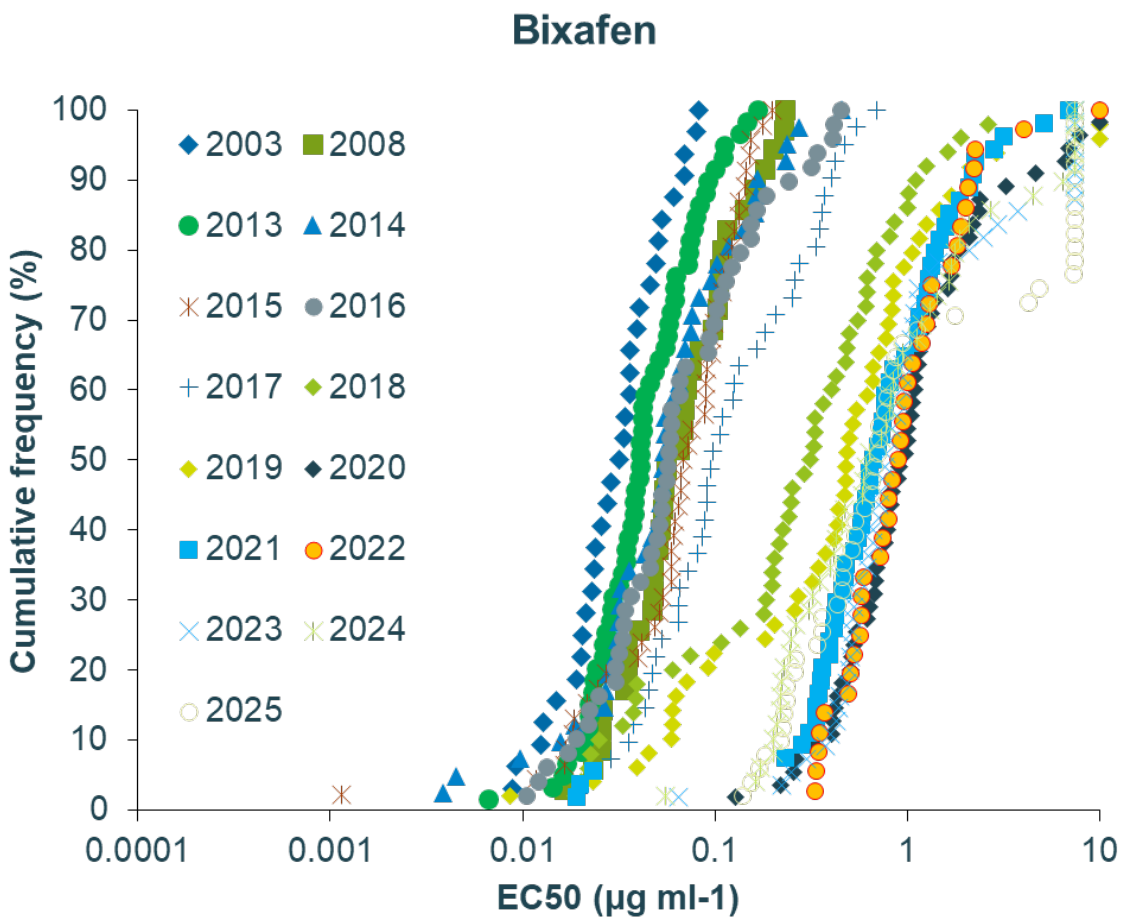
Changes in QiI sensitivity over years

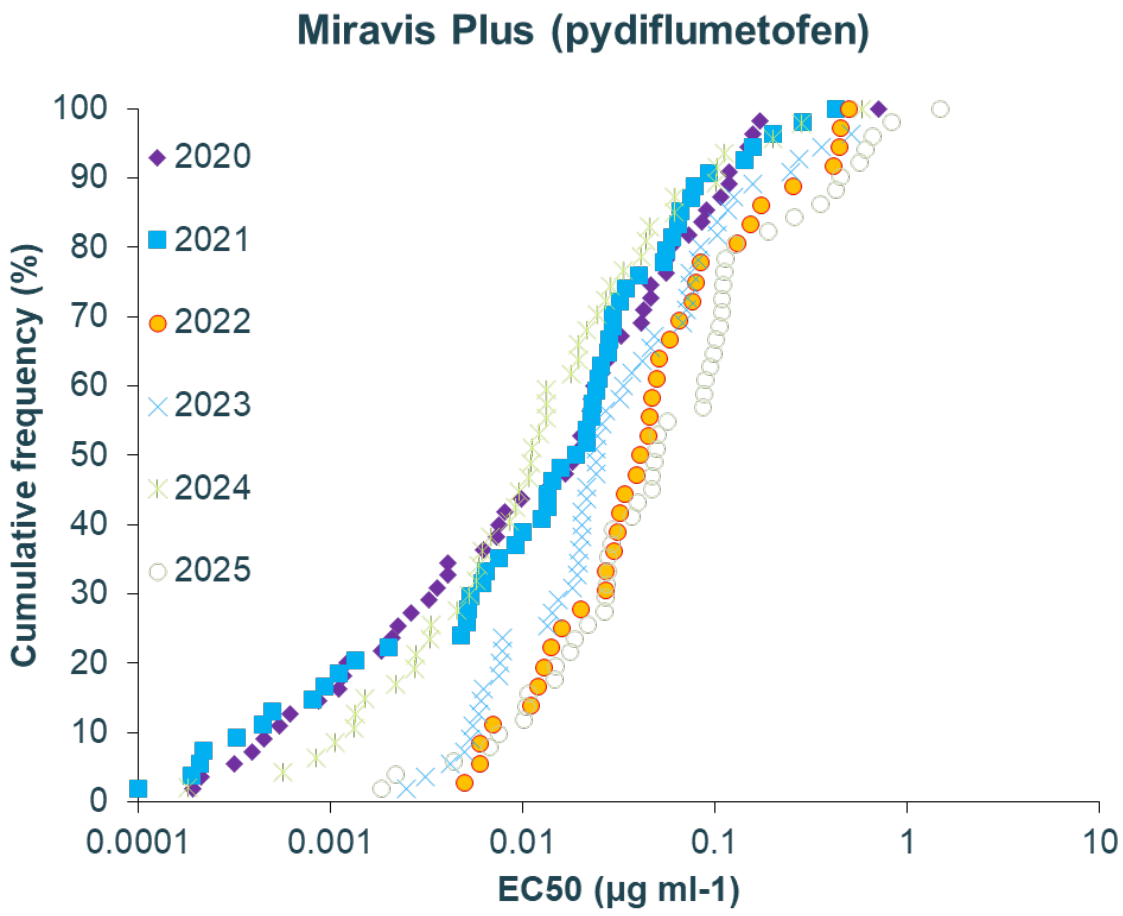
Early season sampling (Rothamsted)



Changes in SDHI sensitivity over years

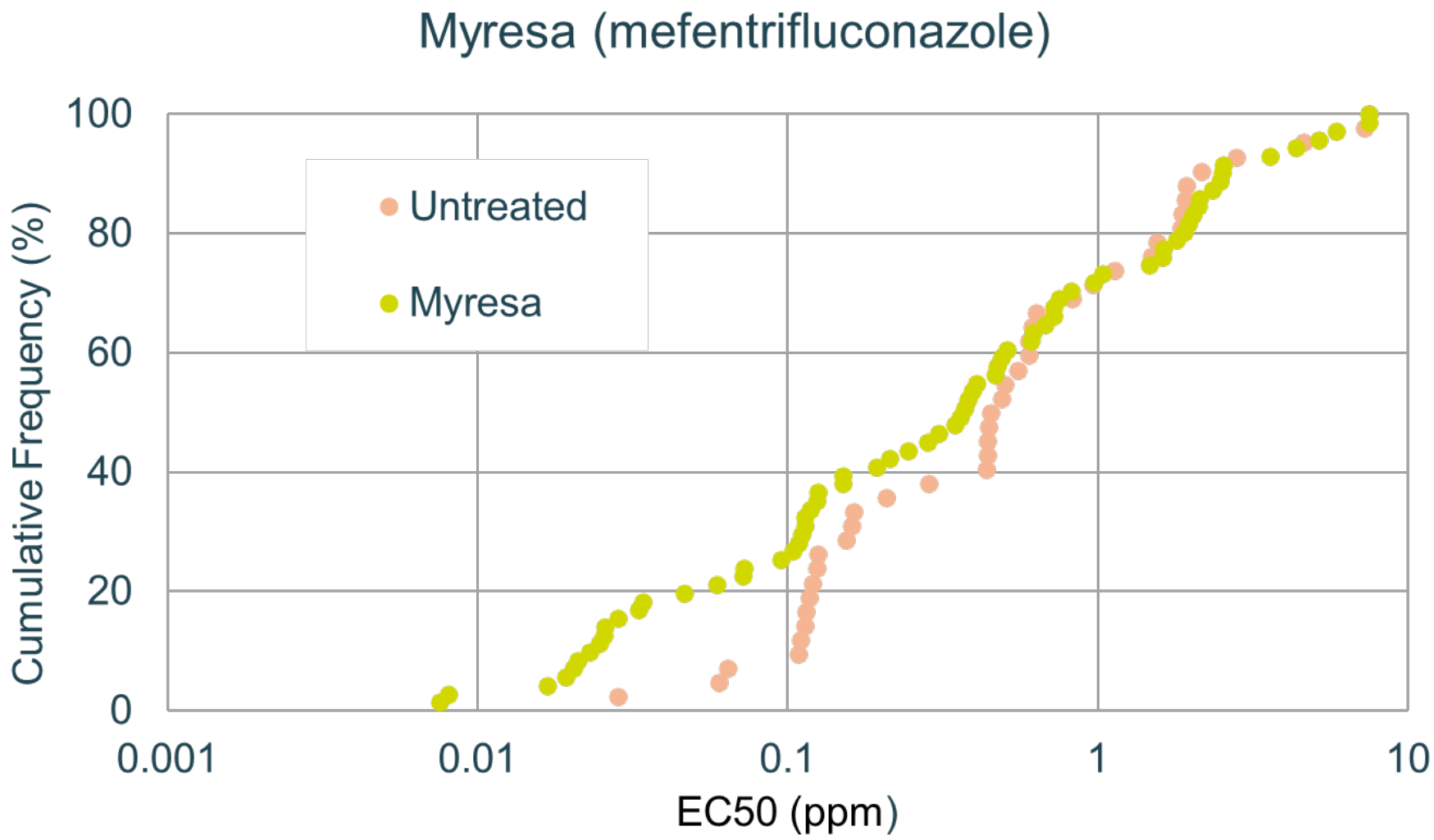
Early season sampling (Rothamsted)





Changes in azole sensitivity in 2025

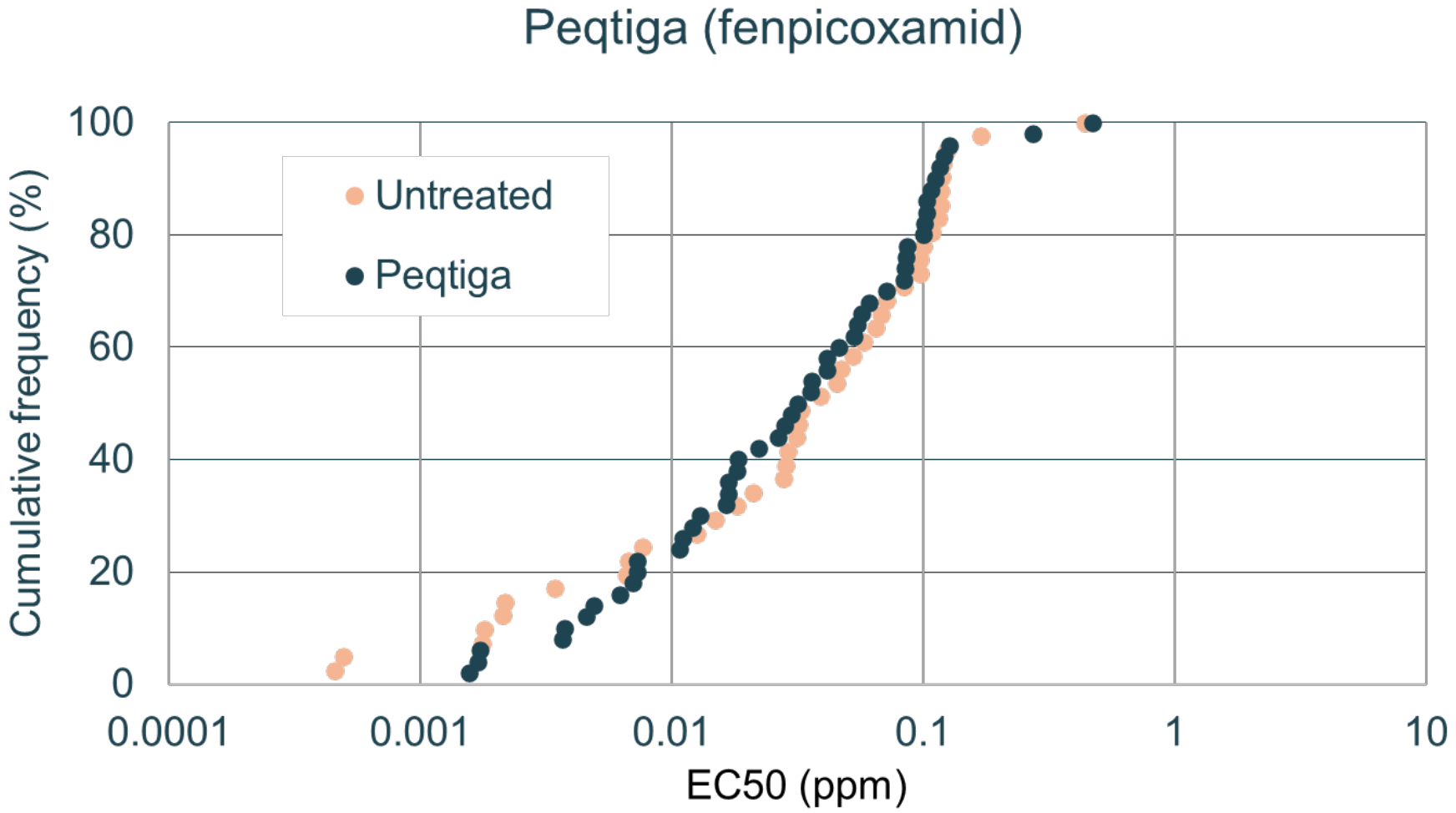
Late-season sampling (fungicide performance trial sites)



The isolates were collected from five UK AHDB fungicide performance trial sites in 2025 (post-treatment).

Changes in QiI sensitivity in 2025

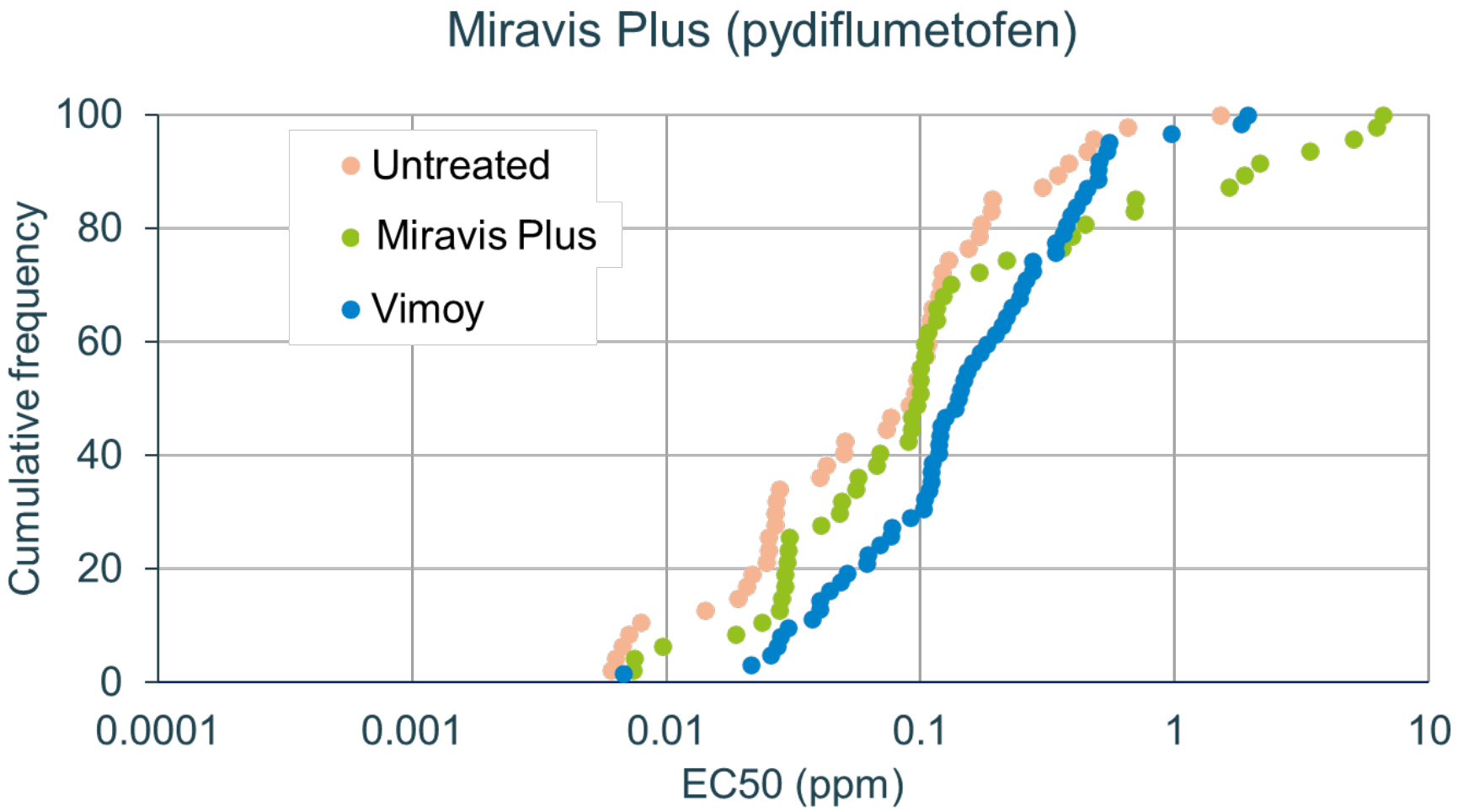
Late-season sampling (fungicide performance trial sites)



The isolates were collected from five UK AHDB fungicide performance trial sites in 2025 (post-treatment).

Changes in SDHI sensitivity in 2025

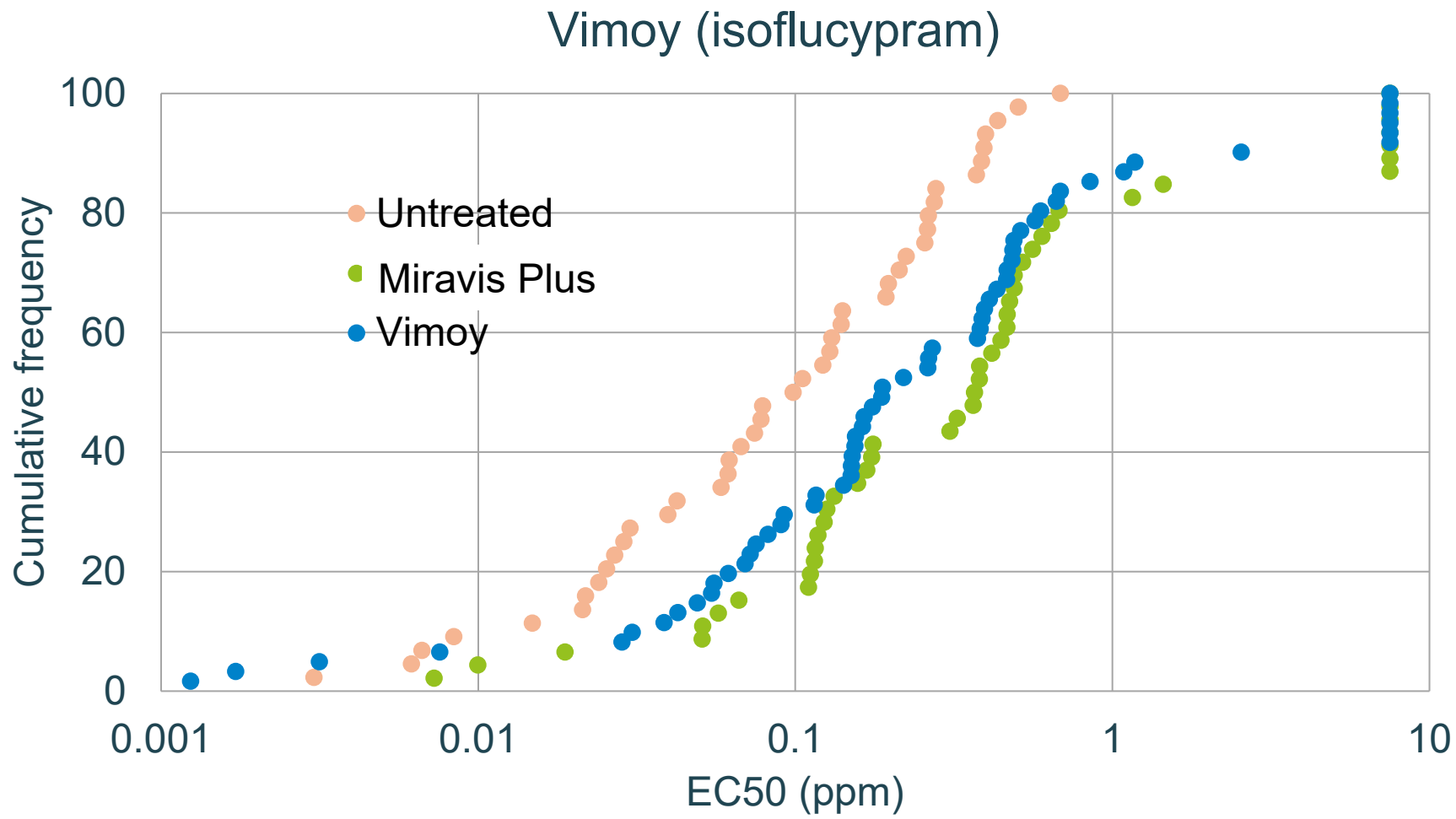
Late-season sampling (fungicide performance trial sites)



The isolates were collected from five UK AHDB fungicide performance trial sites in 2025 (post-treatment).

Changes in SDHI sensitivity in 2025

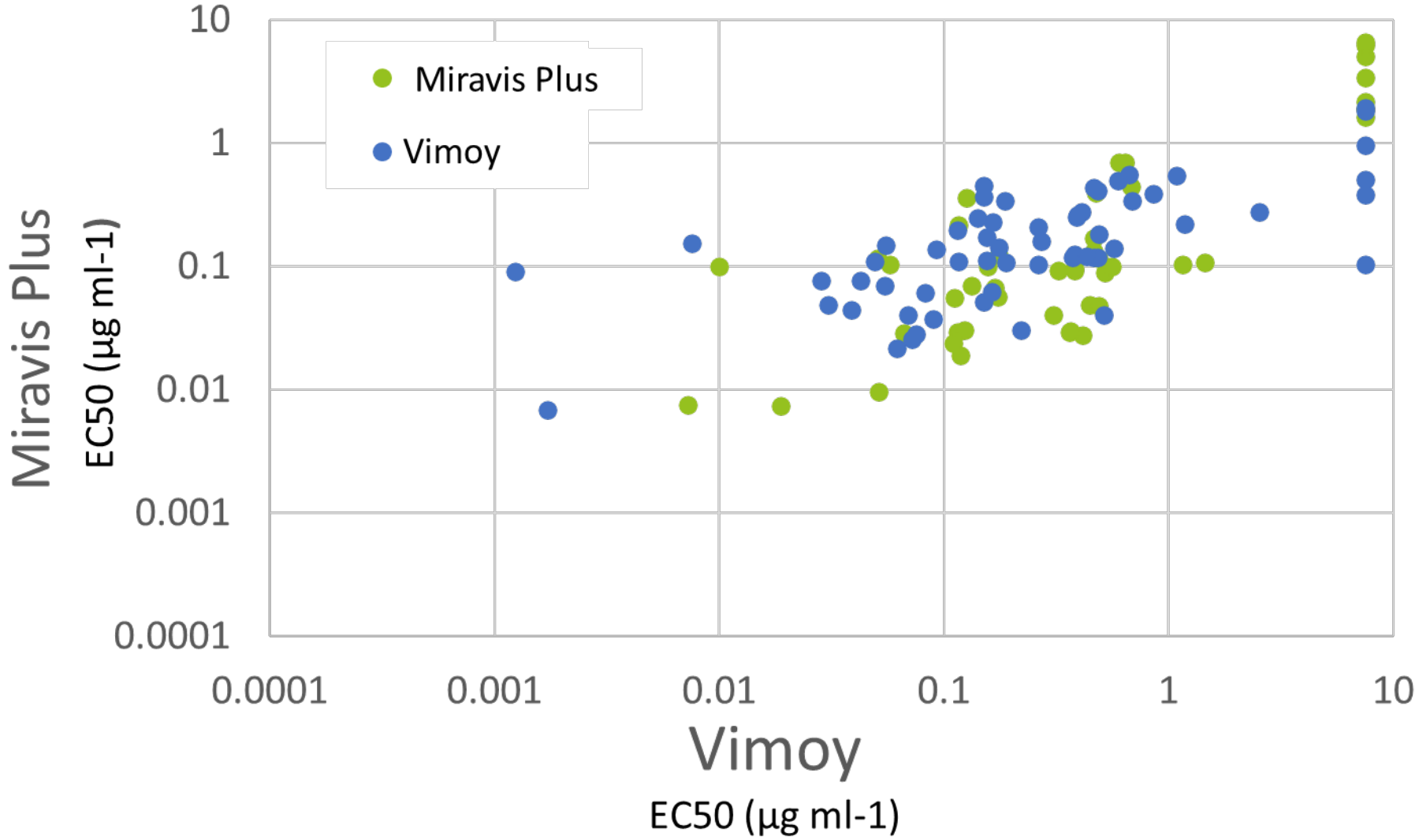
Late-season sampling (fungicide performance trial sites)



The isolates were collected from five UK AHDB fungicide performance trial sites in 2025 (post-treatment).

SDHI cross-resistance 2025

Late-season sampling (fungicide performance trial sites)



The isolates were collected from five UK AHDB fungicide performance trial sites in 2025 (post-treatment).

Fungicide resistance summary

Azoles

- Some gradual changes in azole sensitivity in vitro
- Incomplete cross-resistance between prothio- and mefentrifluconazole

SDHIs

- Further sensitivity shifts in 2025, especially in (solo) SDHI-treated fungicide performance plots
- SDHI resistance is becoming more complex, with double mutants and new field mutations emerging
- Need to avoid widespread selection of the least-sensitive genotypes
- Miravis Plus and Vimoy select similarly

QiIs

- Fenpicoxamid sensitivity still within the sensitive baseline range

Fungicide resistance management

Fungicide programmes for septoria tritici:

- Use mixtures and sequences of different modes of action (including multi-sites)
- Avoid repeated use of the same mode of action (where possible)

This may:

- Increase the effective life of at-risk fungicide groups
- Improve in field efficacy

For further information, visit the Fungicide Resistance Action Group (FRAG) web page: **ahdb.org.uk\frag**

Wheat summary

Septoria tritici

- Miravis Plus (pydiflumetofen), Peqtiga (fenpicoxamid), Jessico Fusion (isoflucypram + fenpicoxamid) and Univoq (fenpicoxamid + prothioconazole) achieved the highest control levels
- Vimoy (isoflucypram) and Myresa (mefentrifluconazole) maintained good activity

Yellow rust

- Leading products all contained prothioconazole (Proline), isoflucypram (Vimoy, Plaxium, Jessico Fusion) or benzovindflupyr (Elatus plus). Amistar (azoxystrobin) also showed very good activity

Brown rust

- Comet (pyraclostrobin), Imtrex (fluxapyroxad), Vimoy and Myresa gave the highest control level

Mixtures offer more robust disease control and yields than straights

Fungicide performance 2025: Barley

Barley: registered products

Product	Active(s)	Mode of action
Proline 275	prothioconazole	DMI (azole)
Myresa	mefentrifluconazole	DMI (azole)
RevyPro	mefentrifluconazole + prothioconazole	DMI (azole)
Imtrex	fluxapyroxad	SDHI
Miravis Plus	pydiflumetofen	SDHI
Vimoy	isoflucypram	SDHI
Ipresso	isoflucypram + prothioconazole	SDHI + DMI (azole)

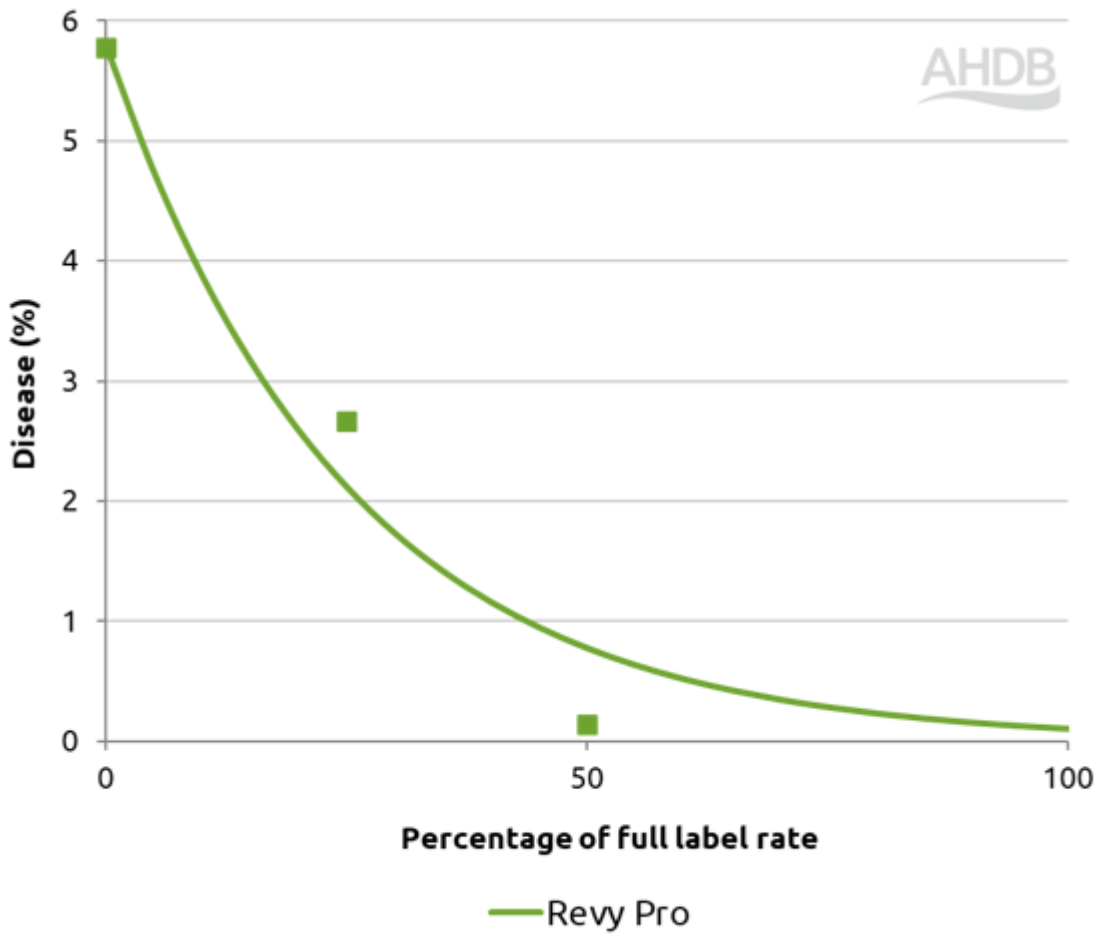
A further six unregistered products were tested in 2025. Data on these will be released upon registration.

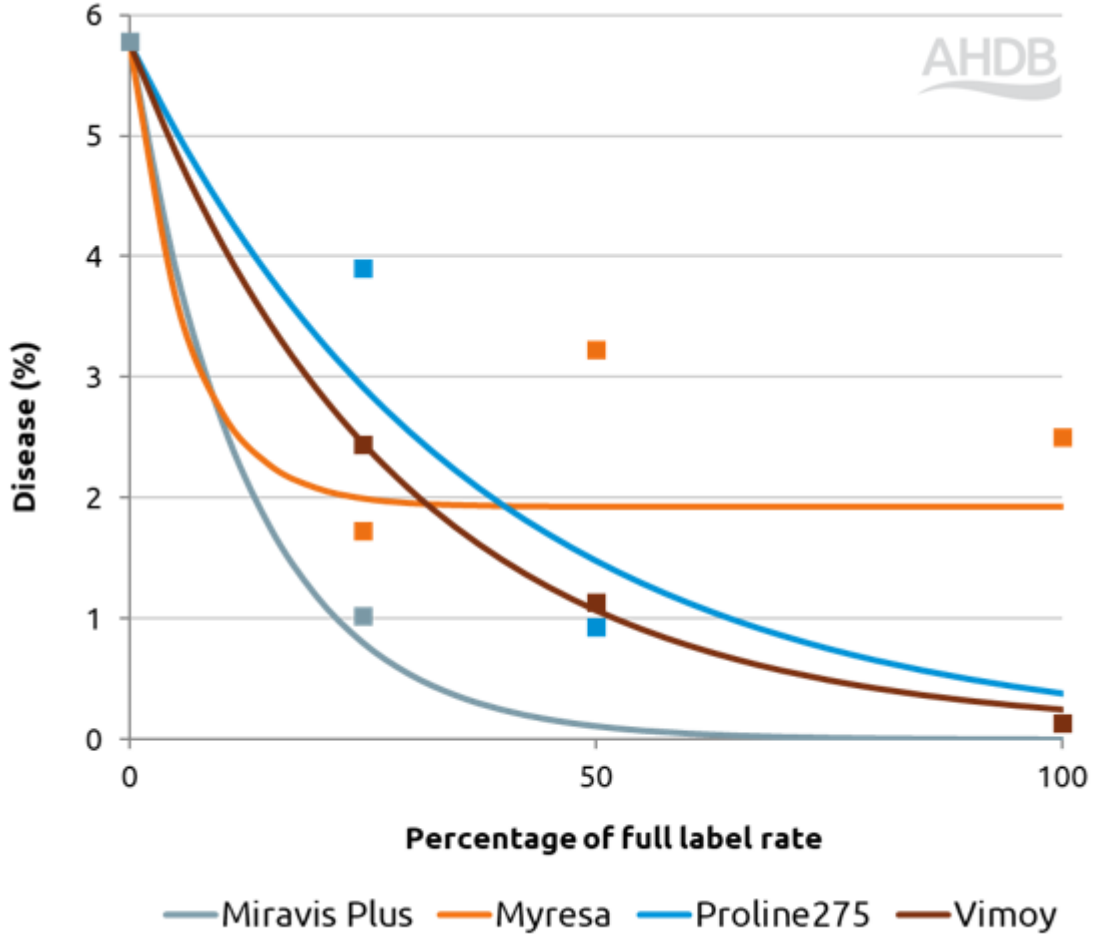
Check labels prior to use. Myresa, Imtrex, Vimoy and Miravis Plus should be used in mixtures with at least one fungicide with an alternative mode of action that has efficacy against the target disease.

Barley: trial-site data 2025

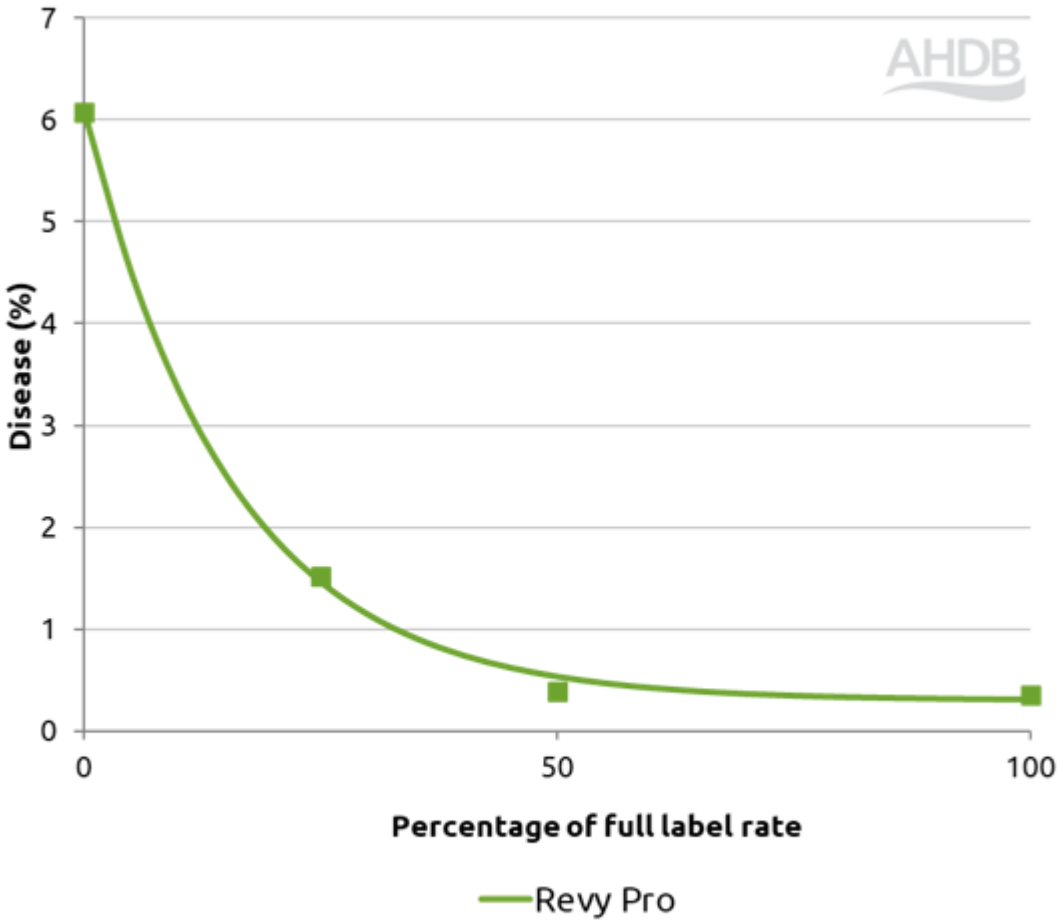
Location	Rhyncho	Net blotch	Ramularia	Powdery mildew	Brown rust
Cardigan		✓			
Carlow (Ireland)	✓			✓	
Carlow (Ireland)				✓	✓
Edinburgh	✓			✓	
Edinburgh			✓		

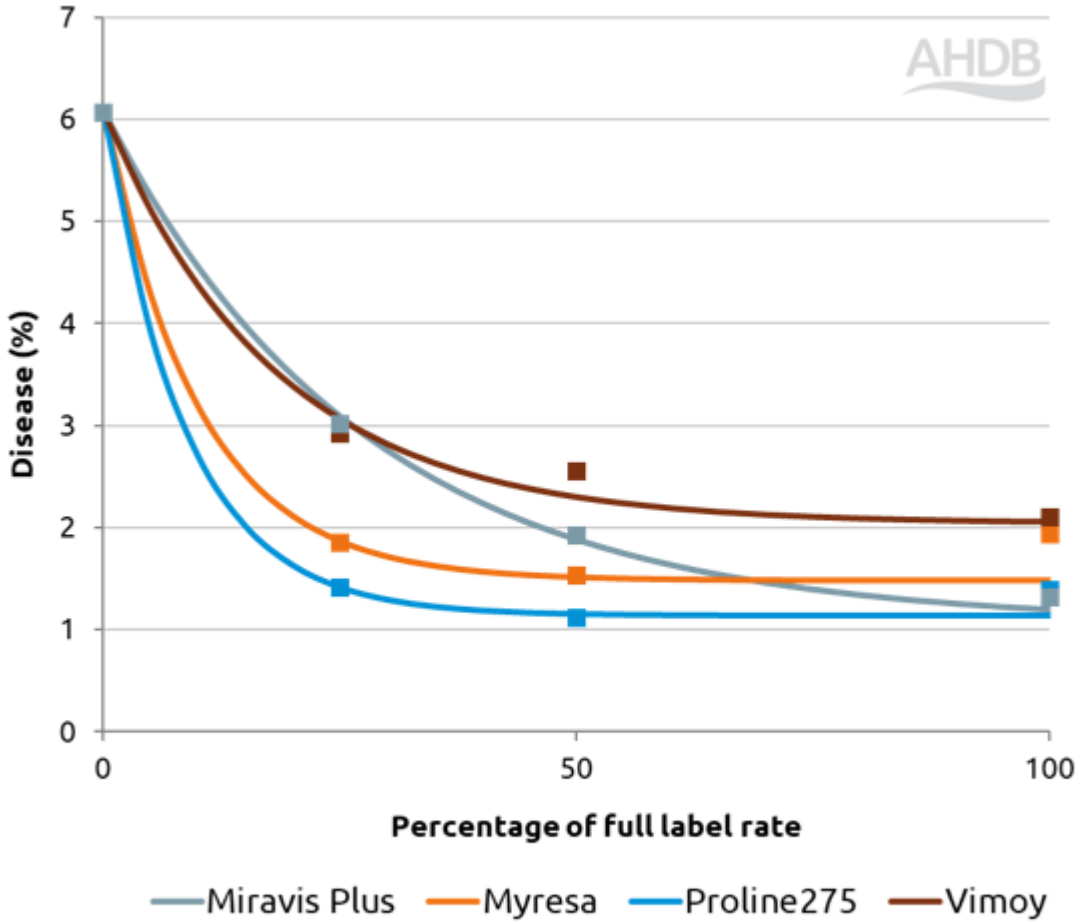
Rhynchosporium protectant 2025 (2 trials)



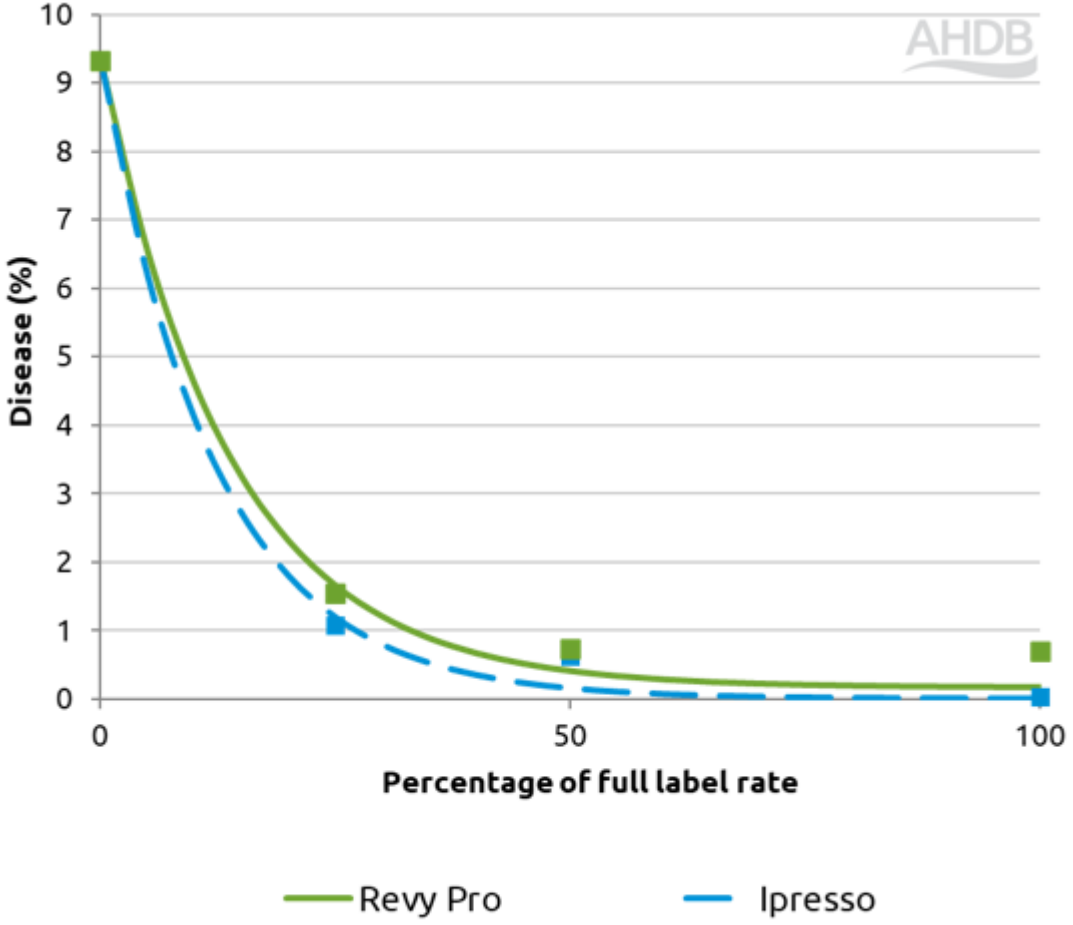


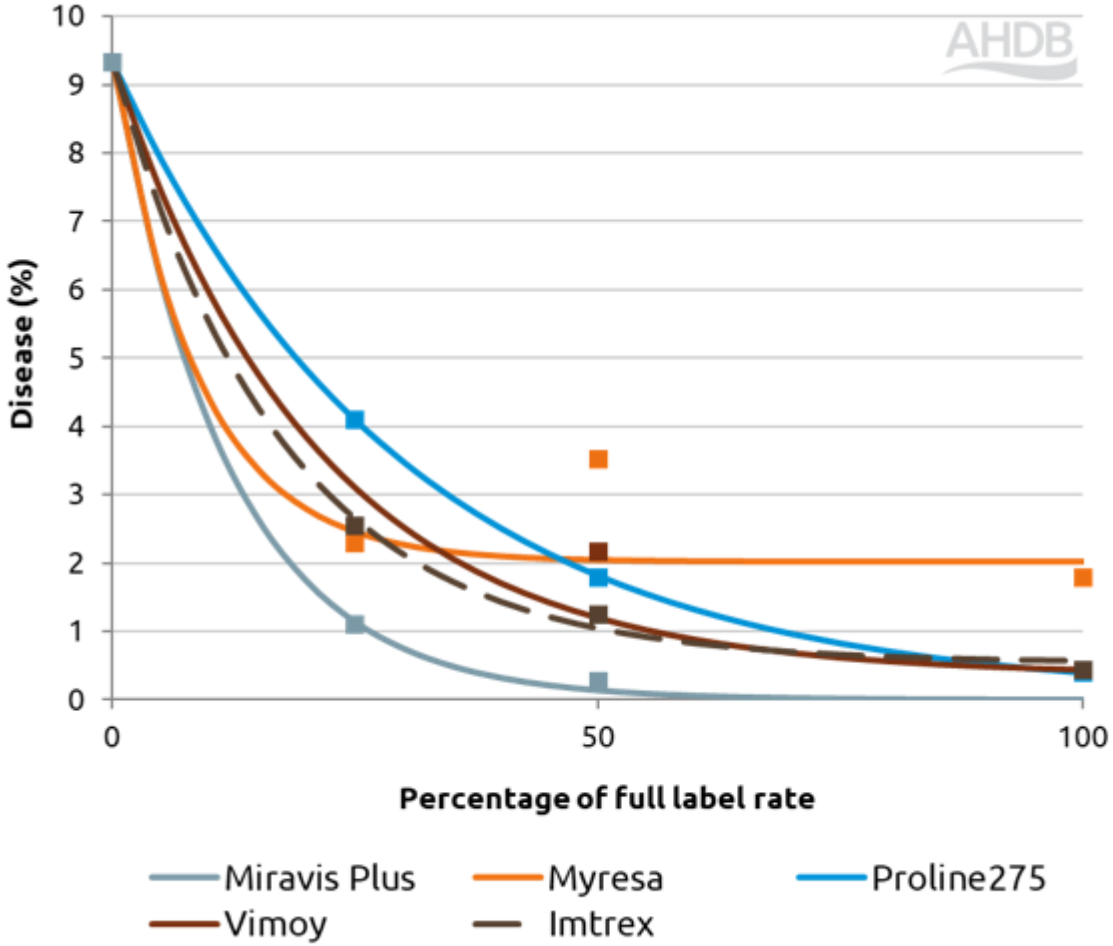
Rhynchosporium eradicant 2025 (3 trials)



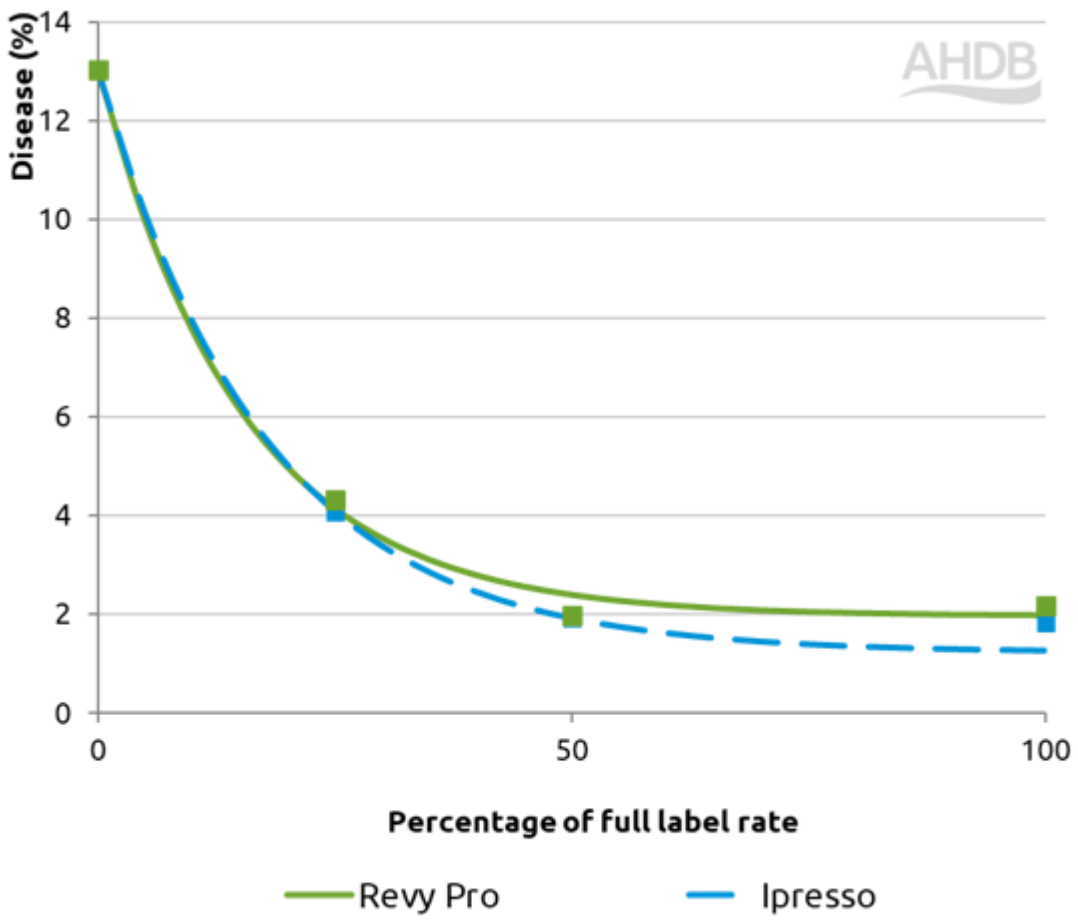


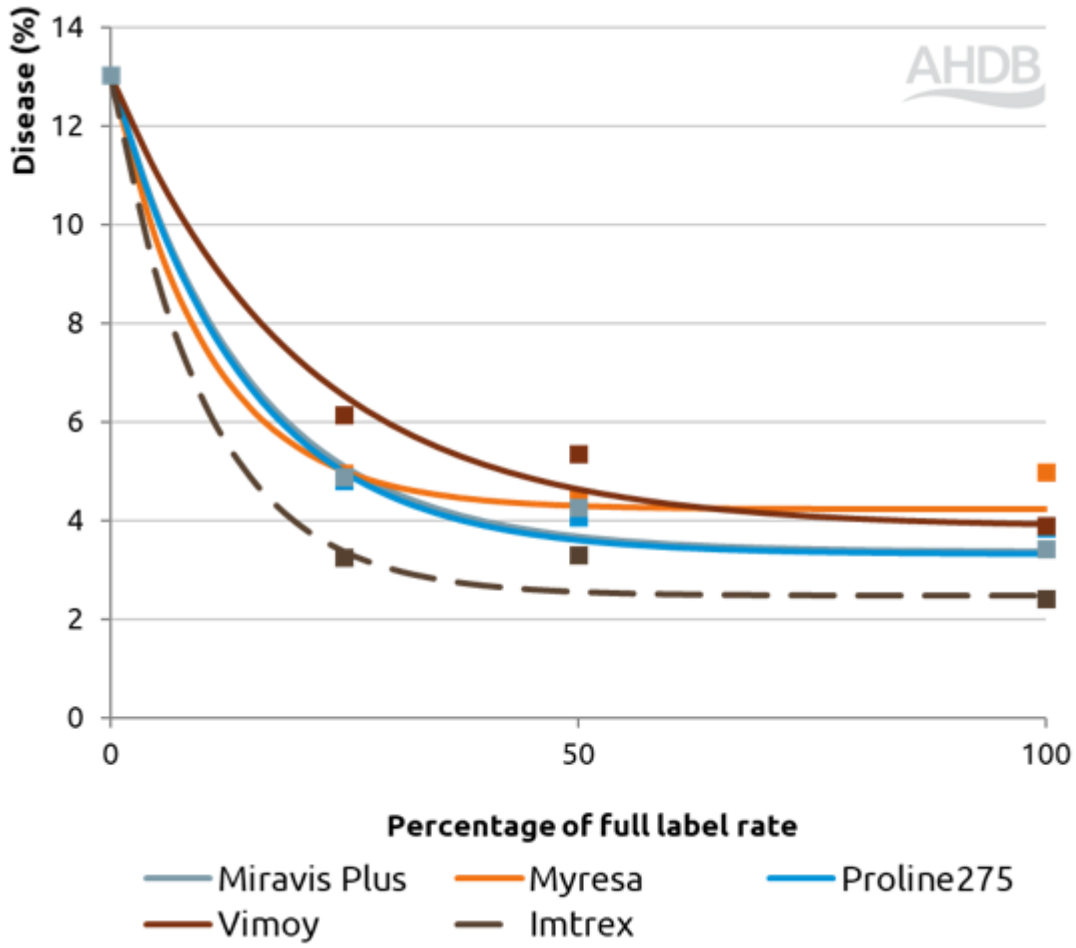
Rhynchosporium protectant 2023–25 (5 trials)



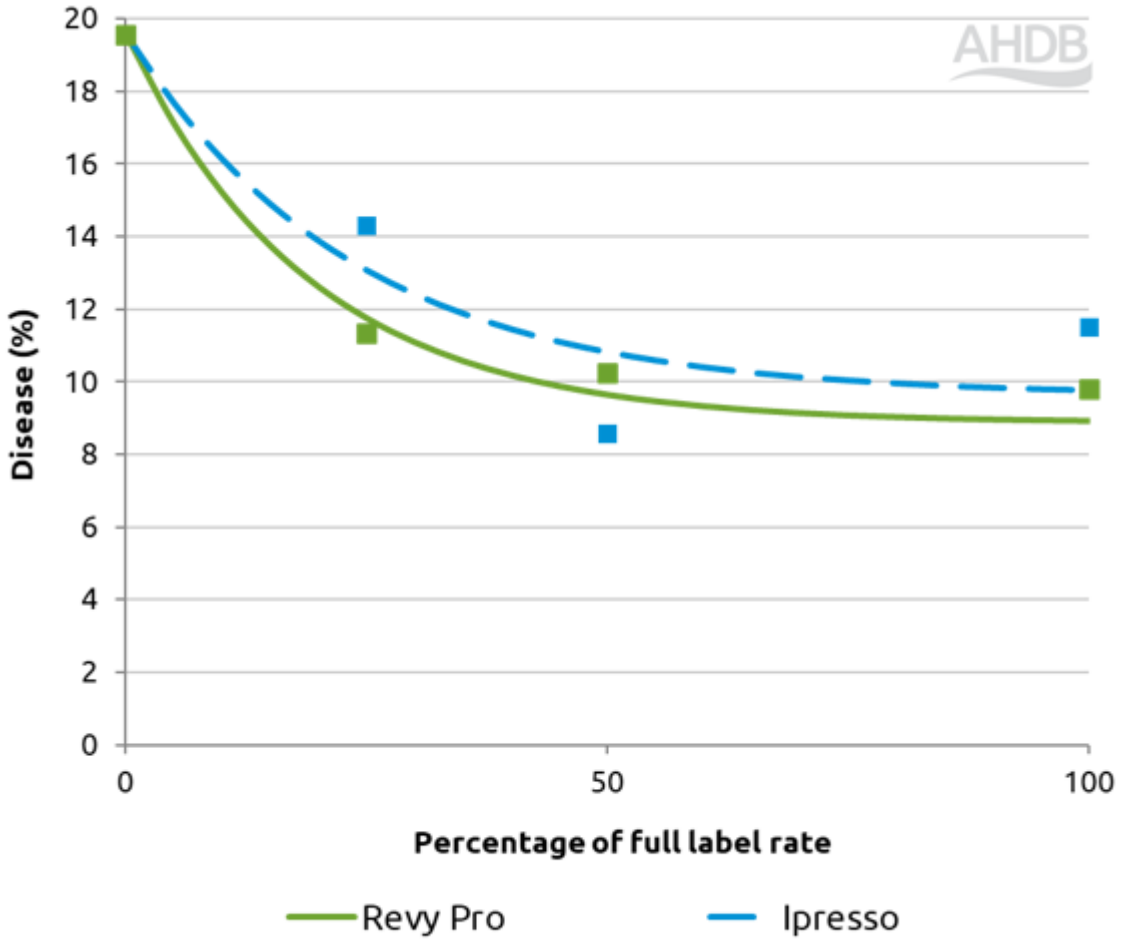


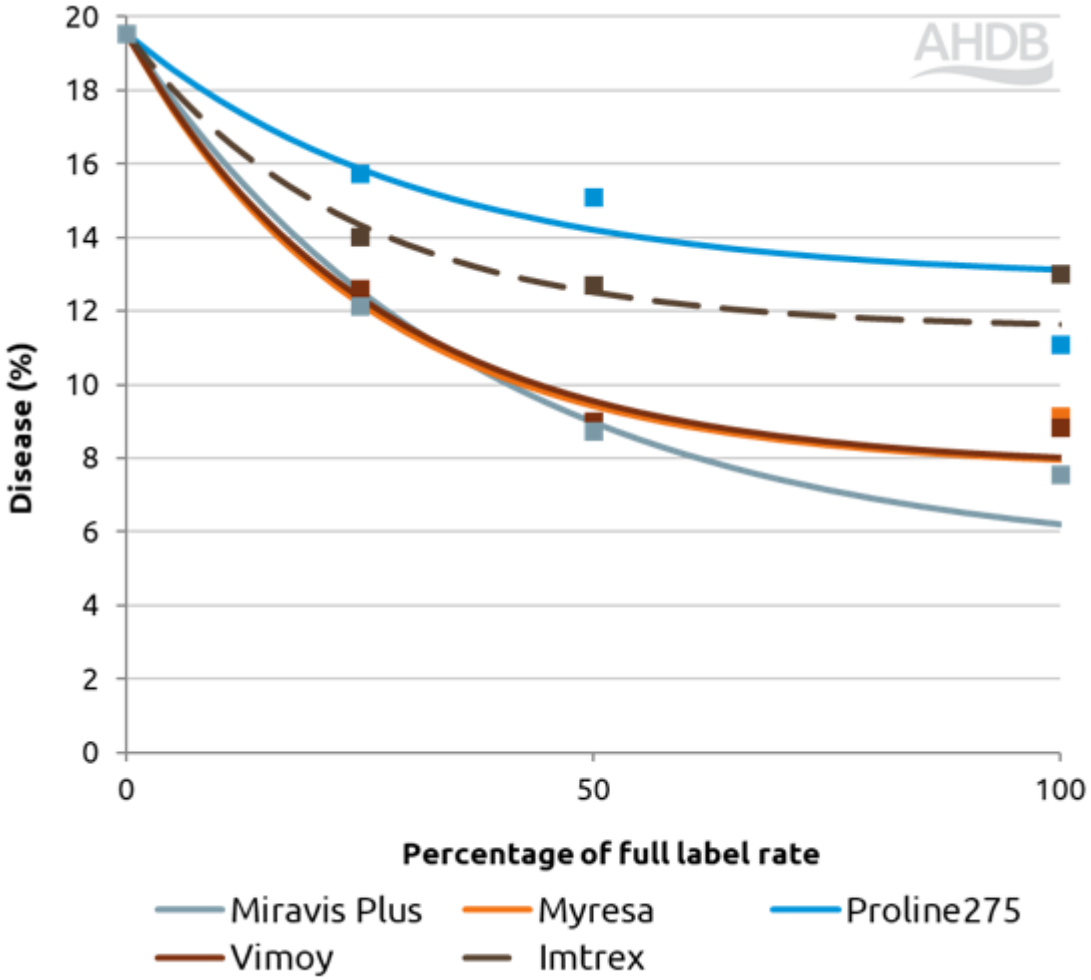
Rhynchosporium eradicant 2023–25 (6 trials)



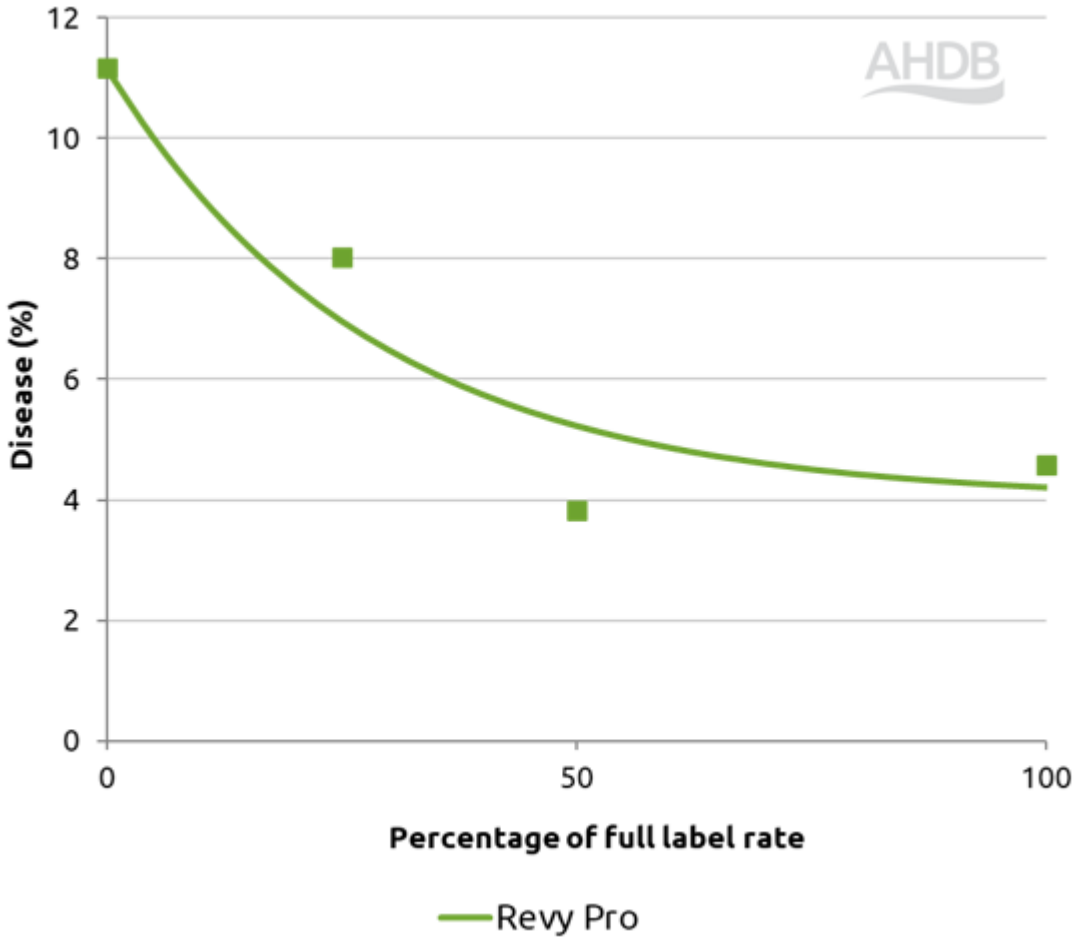


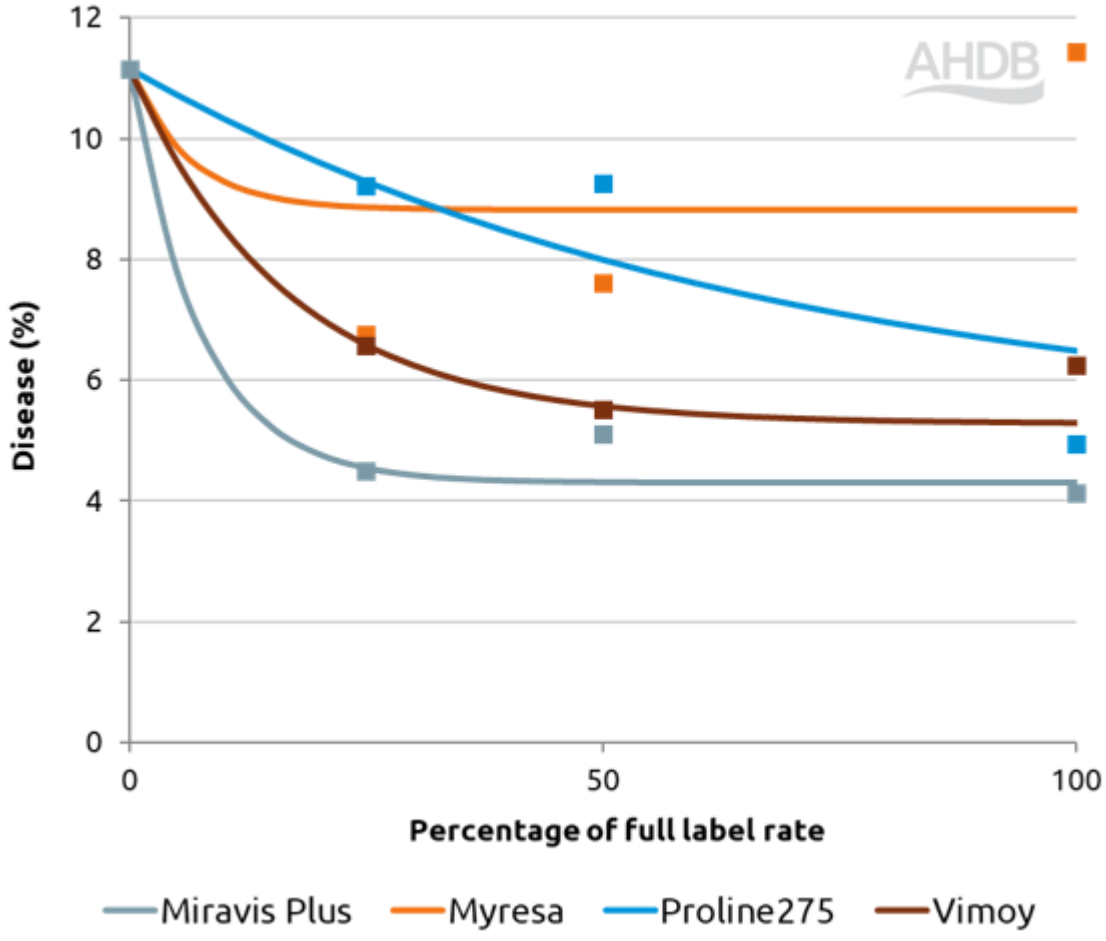
Net blotch protectant 2023–25 (3 trials)



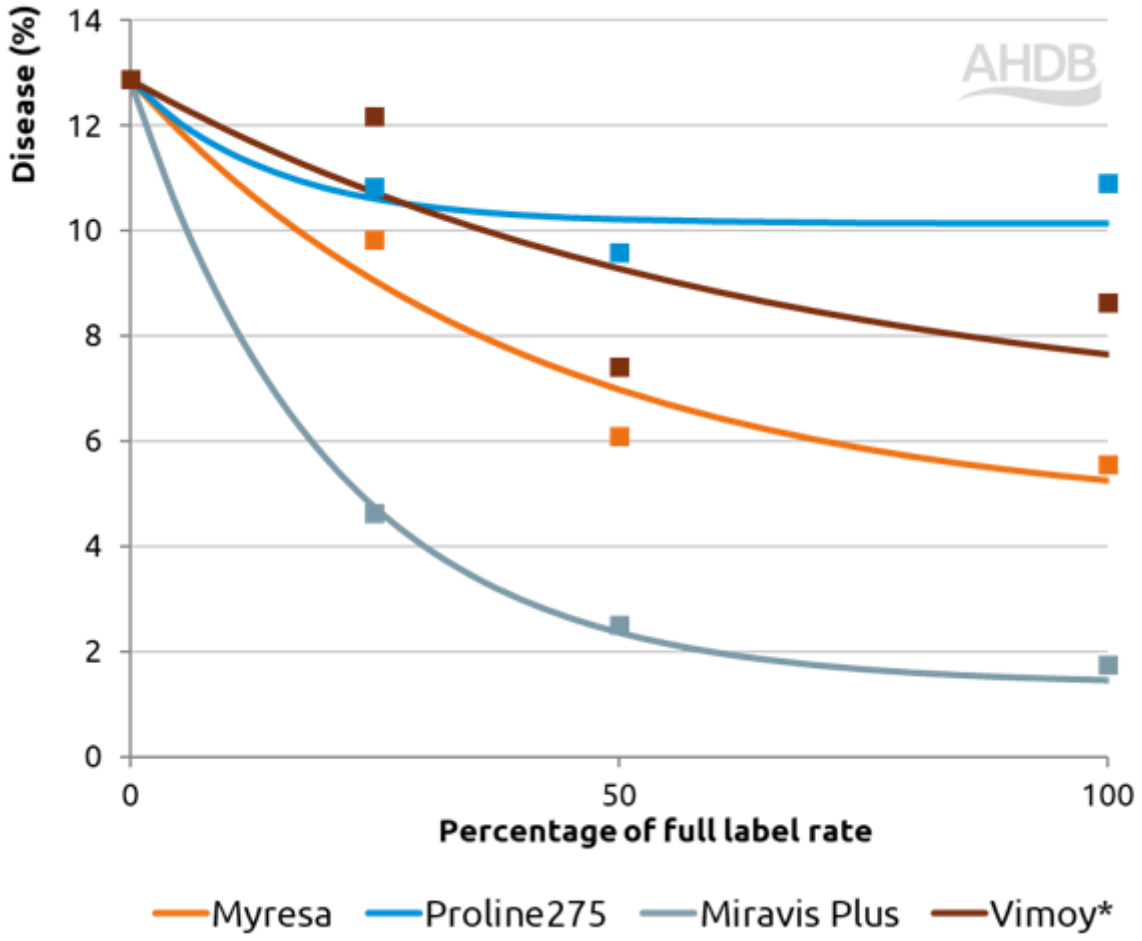


Net blotch eradicant 2024–25 (2 trials)



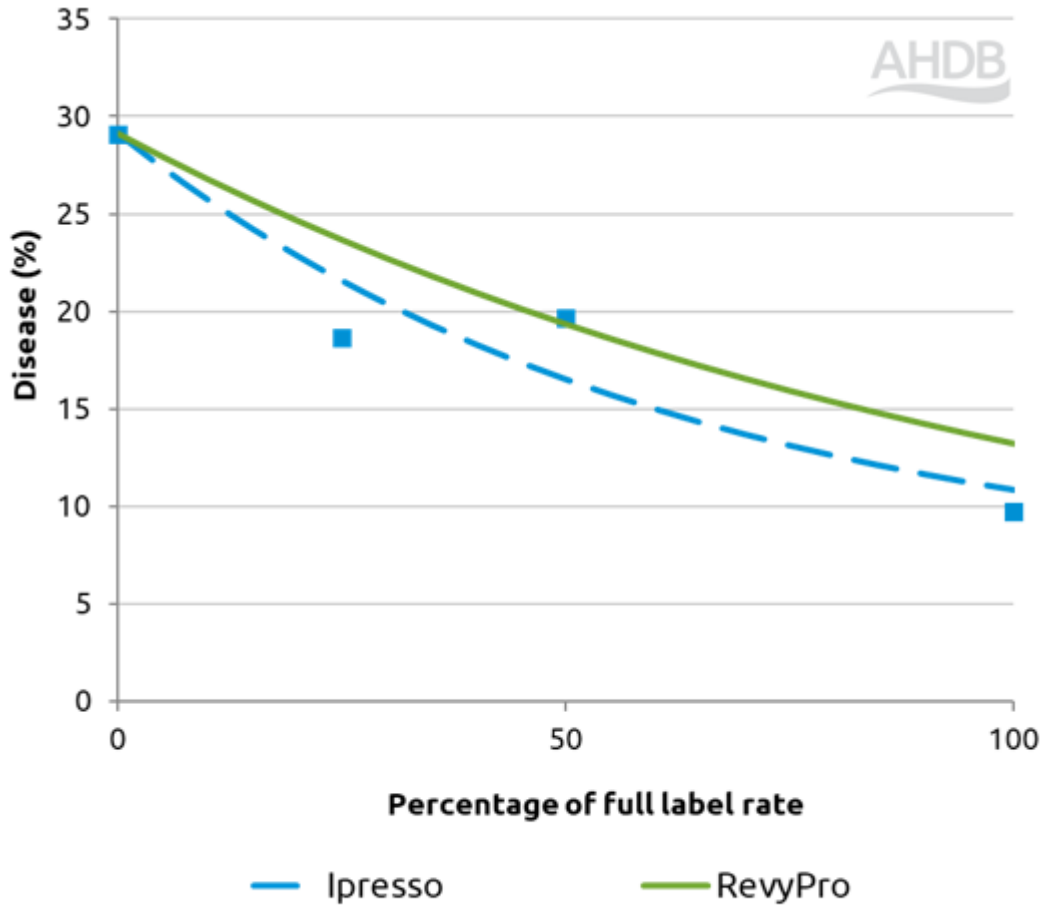


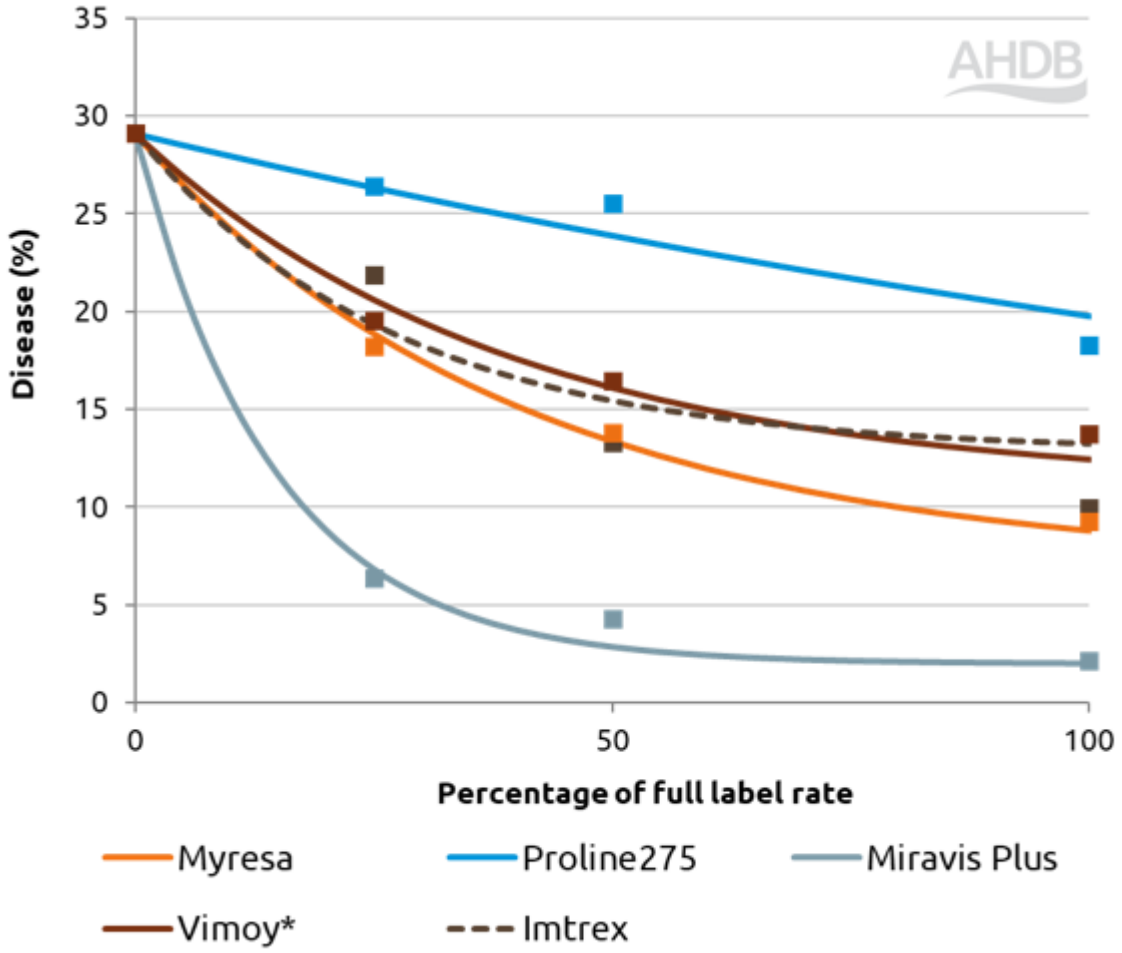
Ramularia 2025 (1 trial)



*Note: Vimoy does not currently have a label recommendation for the control of ramularia or powdery mildew, so it should not be applied to specifically control these diseases.

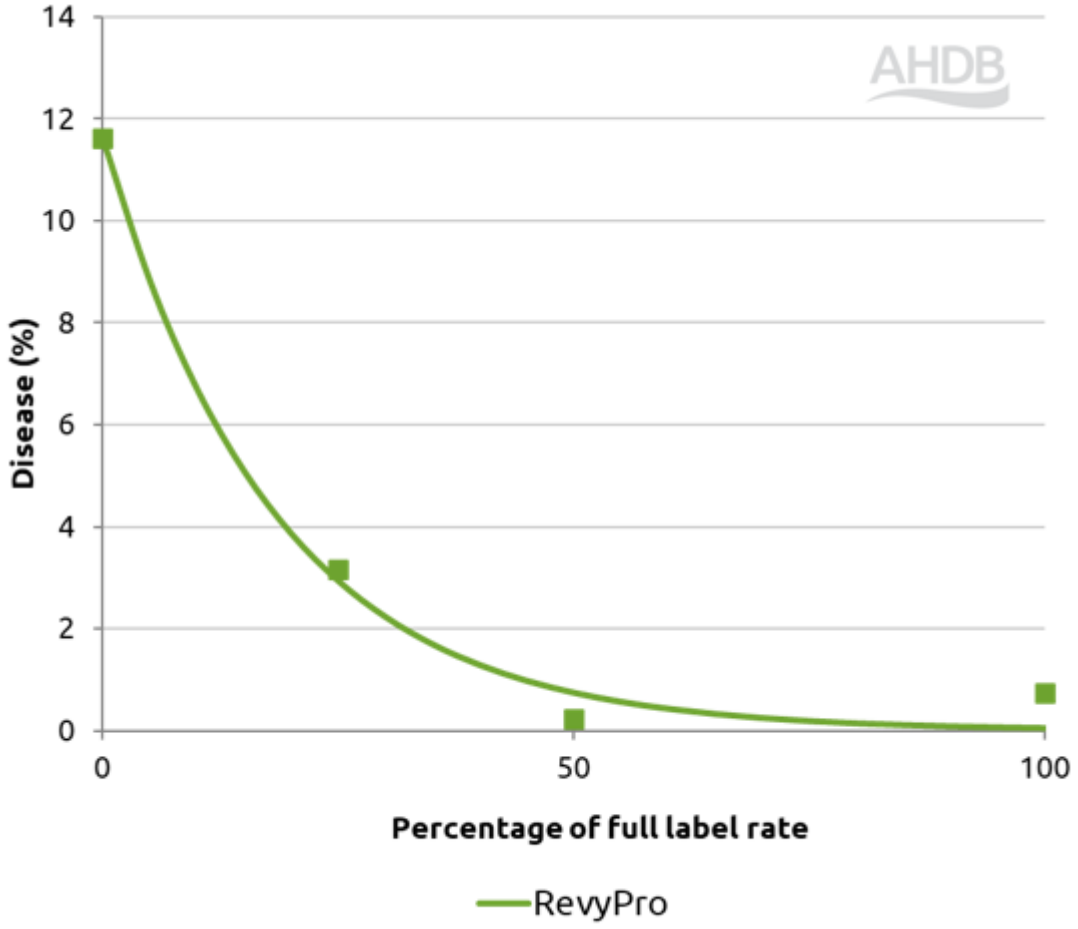
Ramularia 2023–25 (6 trials)

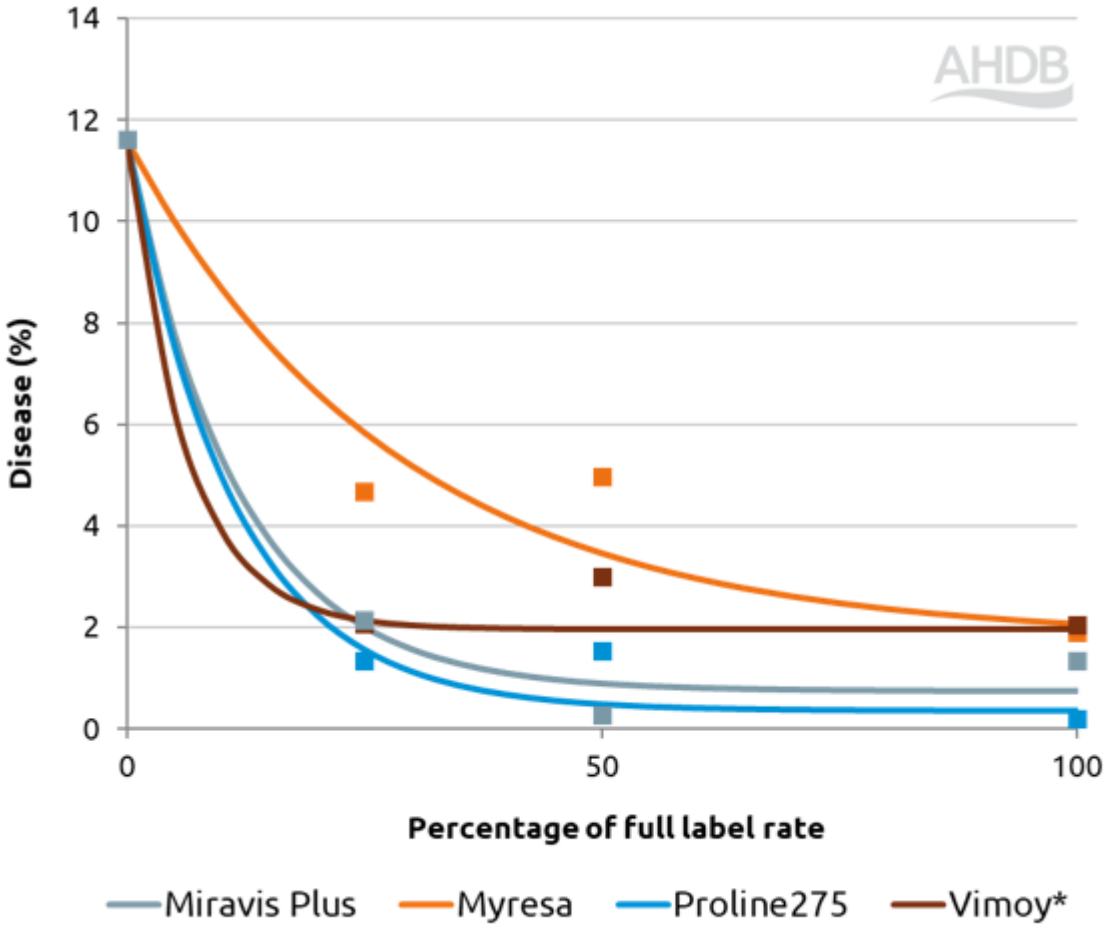




*Note: Vimoy does not currently have a label recommendation for the control of ramularia or powdery mildew, so it should not be applied to specifically control these diseases.

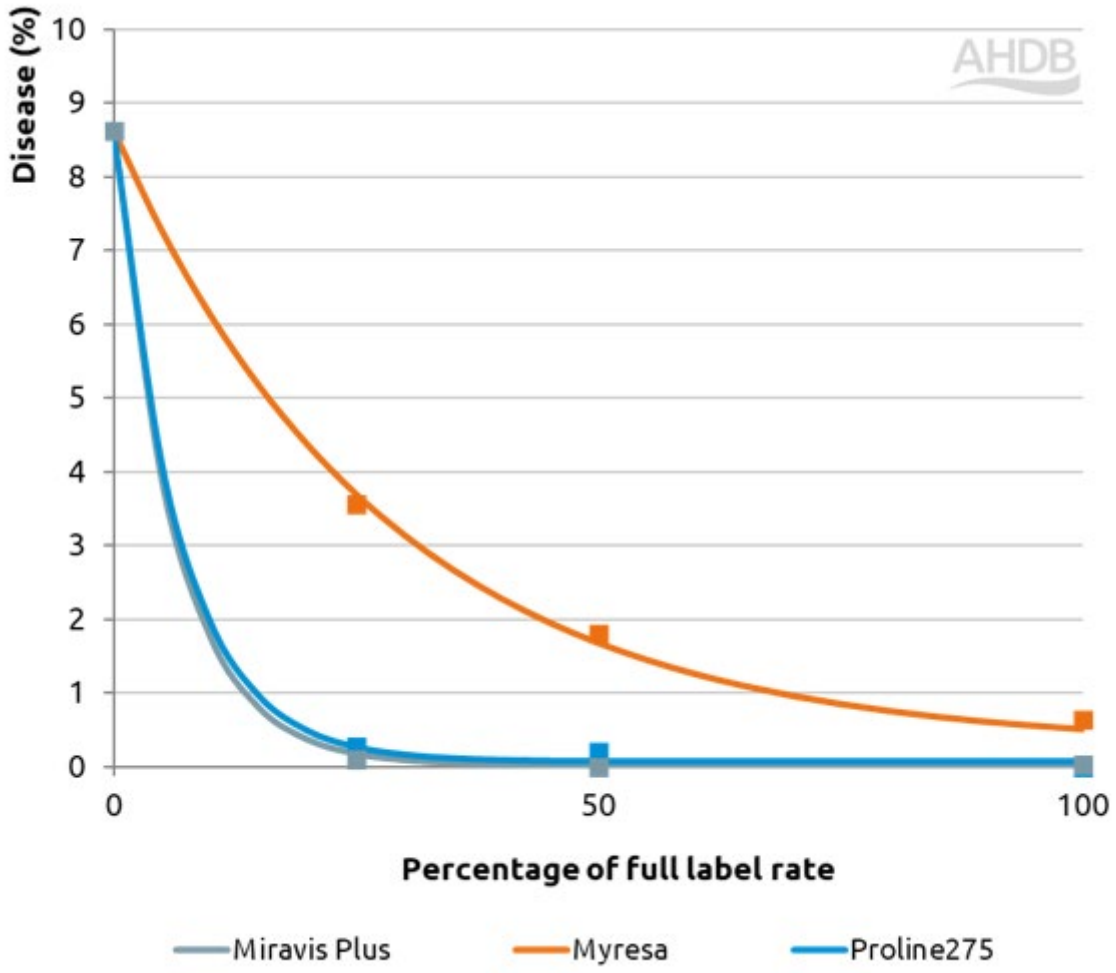
Powdery mildew 2025 (4 trials)





*Note: Vimoy does not currently have a label recommendation for the control of ramularia or powdery mildew, so it should not be applied to specifically control these diseases.

Brown rust 2025 (1 trial)



Barley summary

Rhynchosporium

- DMIs (Myresa, Proline and Revypro) and SDHIs (Vimoy and Miravis Plus) tested all gave very good control

Net blotch

- The SDHIs Vimoy and Miravis Plus were both very effective. Azoles, Myresa, Proline and Revypro (prothioconazole + mefentrifluconaozle), were also effective

Ramularia

- Miravis Plus gave the highest levels of control and Myresa was more effective than Proline

Powdery mildew

- Prothioconazole still very effective on powdery mildew, as was the SDHI Miravis plus. Myresa also gave useful control

Brown rust

- Miravis Plus and Proline appeared effective (1 trial)

Fungicide performance 2025: Oilseed rape

Oilseed rape: trial-site data 2025

Trial site	Target disease	Data used
Terrington	Phoma stem canker	Canker index Yield
Rosemaund	Phoma stem canker	Canker index Yield
High Mowthorpe	Light leaf spot	Light leaf spot Yield
Midlothian	Light leaf spot	No valid data

Oilseed rape: products

Product	Active(s)	Mode of action
Proline 275	prothioconazole	DMI (azole)
Plover	difenoconazole	DMI (azole)
Toledo	tebuconazole	DMI (azole)
Filan	boscalid	SDHI
Propulse	prothioconazole + fluopyram	SDHI + DMI (azole)
Aviator 235 Xpro	bixafen + prothioconazole	SDHI + DMI (azole)
Architect	mepiquat chloride + prohexadione-calcium + pyraclostrobin	QoI
Shepherd	boscalid + pyraclostrobin	SDHI + QoI
Priori Gold	azoxystrobin + difenoconazole	QoI + DMI (azole)

A further two unregistered products were tested in 2025. Data on these will be released upon registration.

Oilseed rape: phoma stem canker trial sites

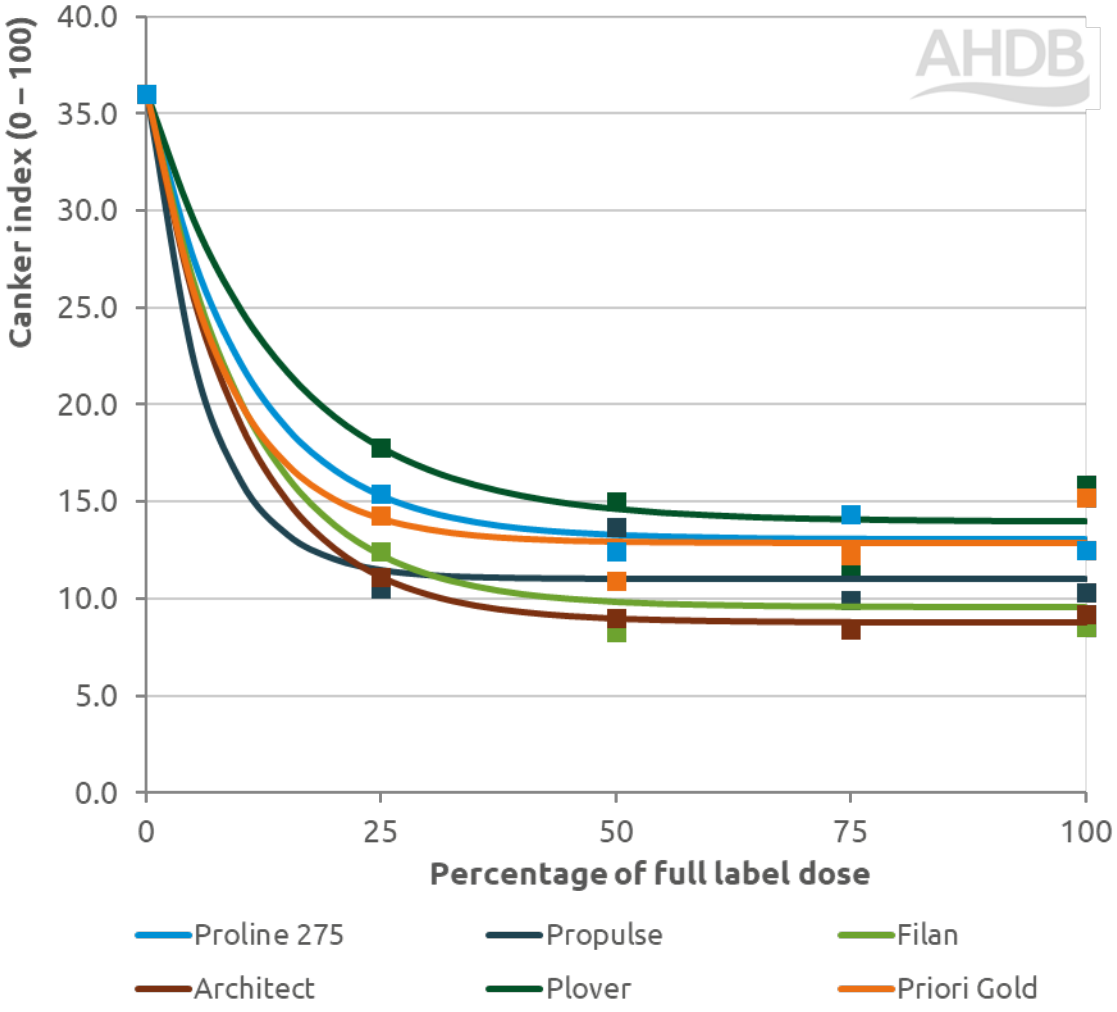
ADAS Terrington

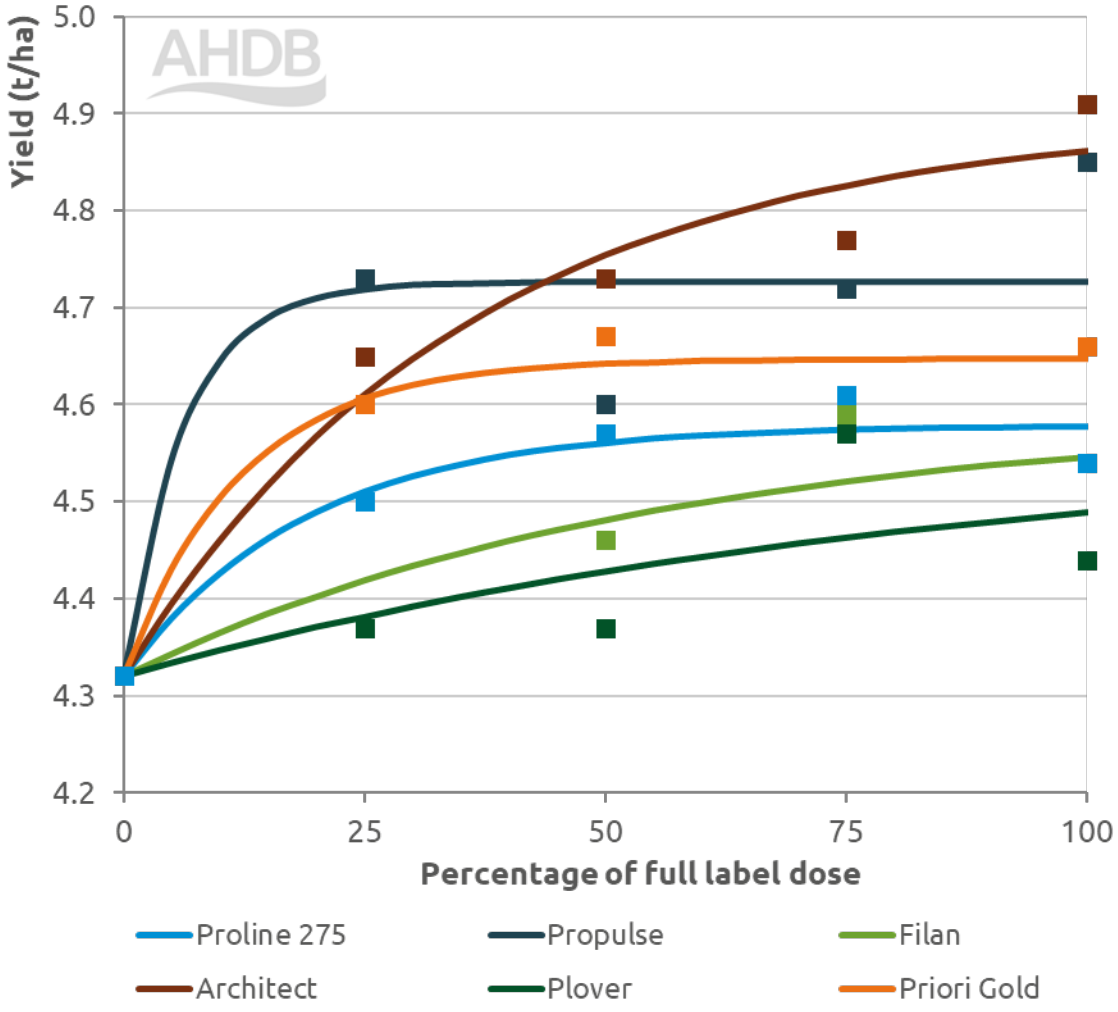
- Location: Norfolk
- Target: Phoma
- Variety: Resort
- T1 spray: 30.10.2024
- T2 spray: 13.12.2024
- Data used
  - Canker index
  - Yield

ADAS Rosemaund

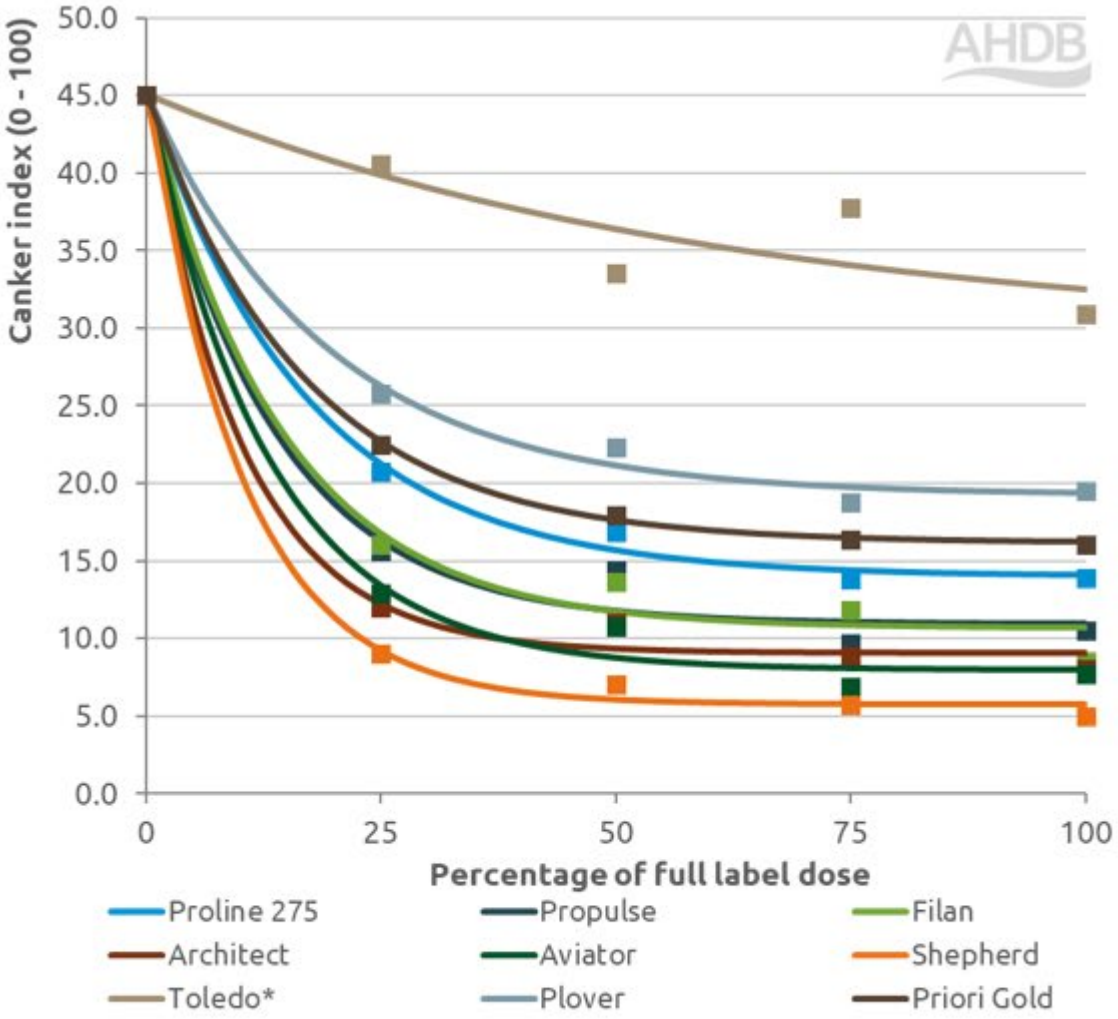
- Location: Herefordshire
- Target: Phoma
- Variety: Aspire
- T1 spray: 08.11.2024
- T2 spray: 14.01.2025
- Data used
  - Canker index
  - Yield

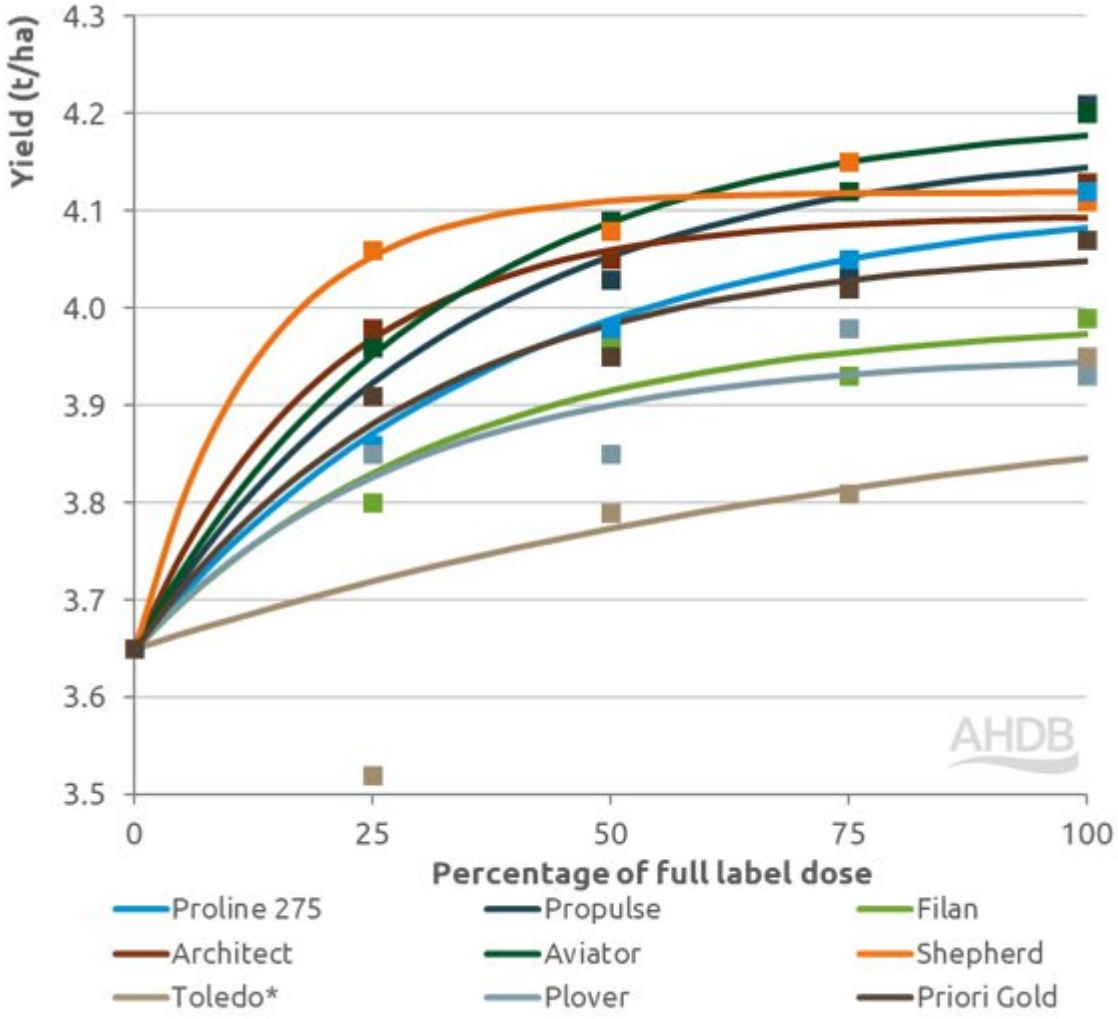
Phoma stem canker and yield 2025 (2 trials)





Stem canker and yield 2015–25 (18 trials)





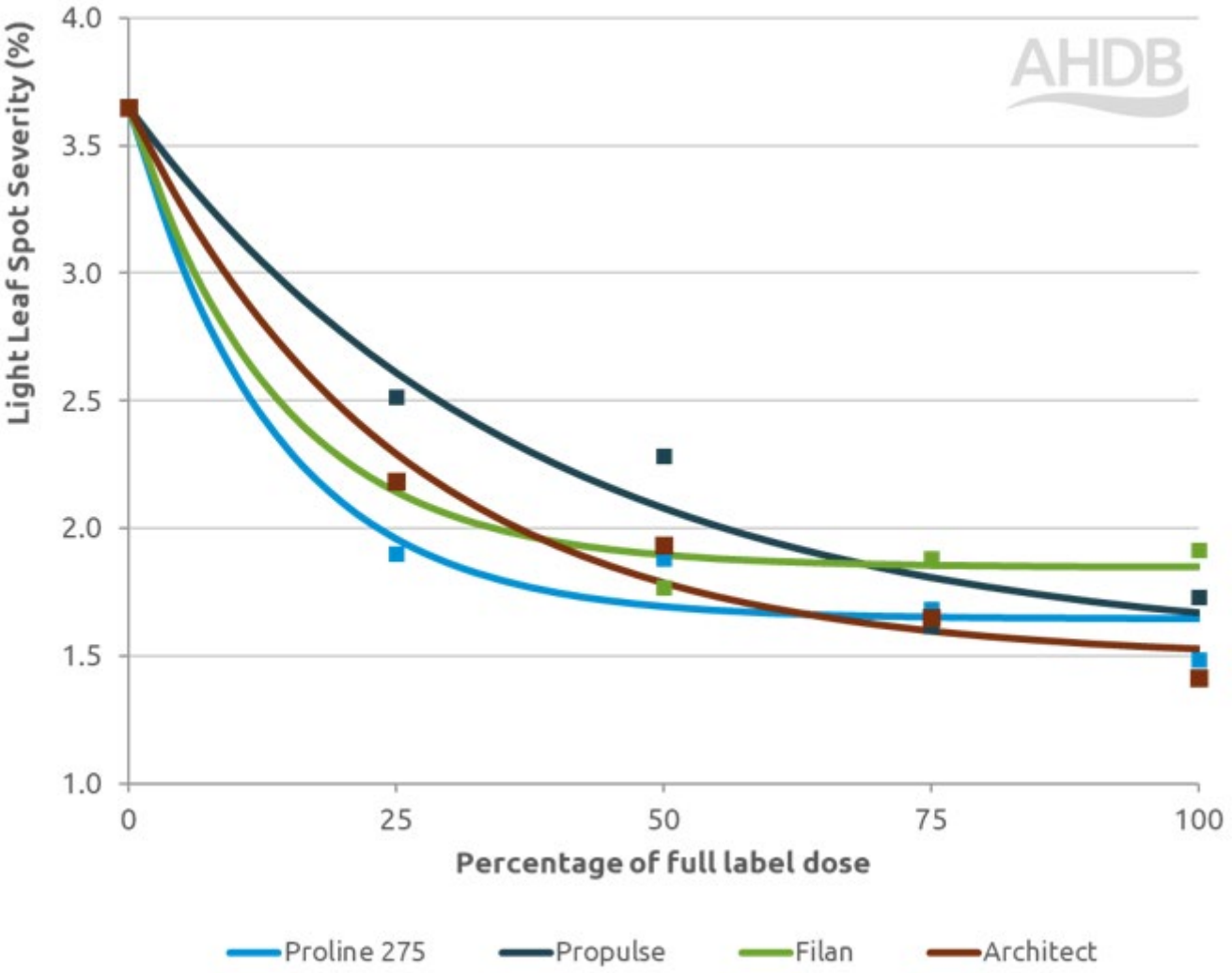
*Based on limited data

Oilseed rape: light leaf spot trial site

ADAS High Mowthorpe

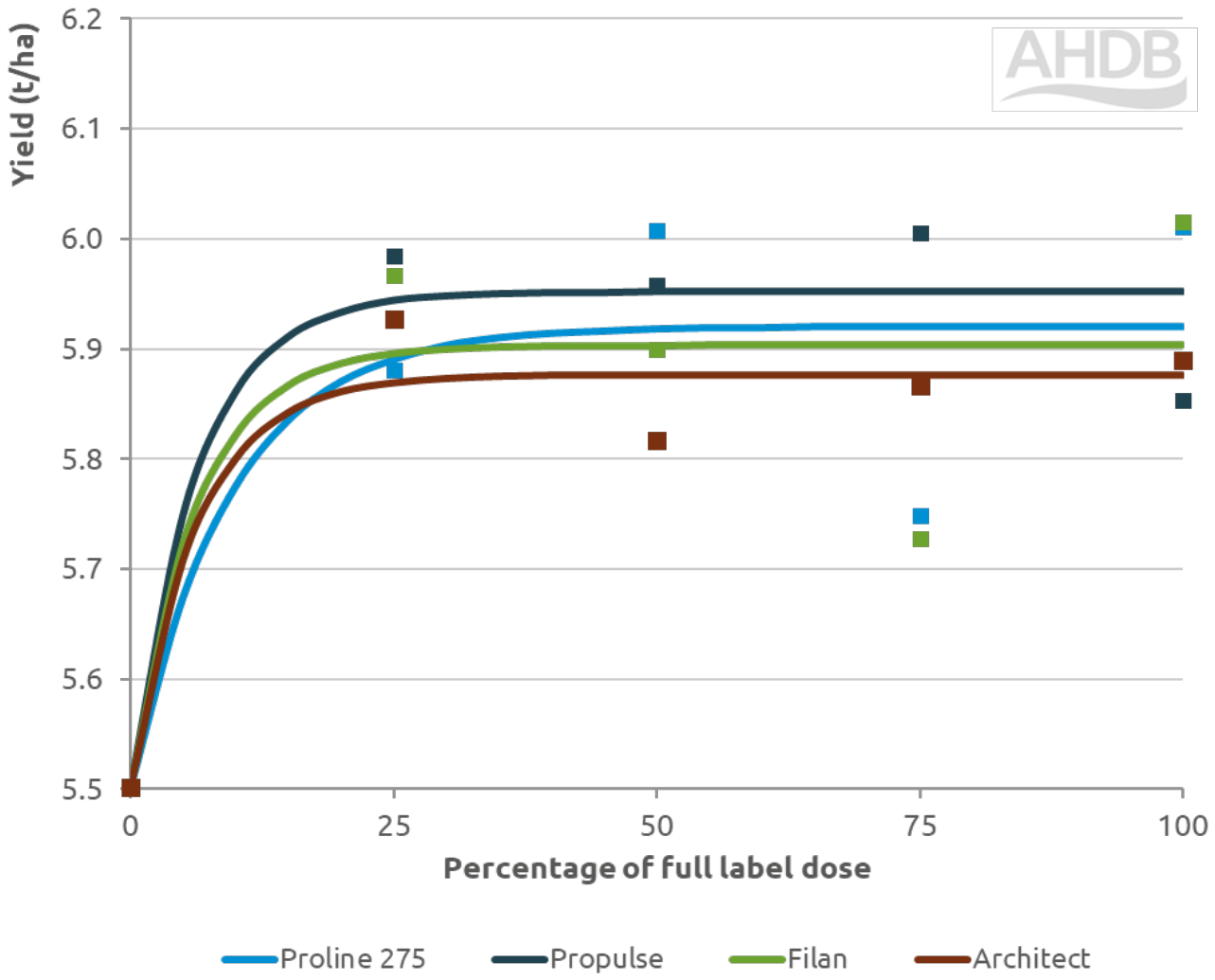
- Location: North Yorkshire
- Target: Light leaf spot (LLS)
- Variety: Campus
- T1 spray: 28.11.2024
- T2 spray: 20.03.2025
- Data used
  - LLS leaf severity (2 dates - combined)
  - Yield

Light leaf spot disease 2025
(1 trial)



Treatment	Application timing	Data (%)
Untreated/Half-Proline	20/03/2025	1.67
Untreated/Full-Proline	20/03/2025	1.65
Half-Proline/Untreated	28/11/2024	1.52
Full-Proline/Untreated	28/11/2024	1.72

Light leaf spot yield 2025
(1 trial)



Treatment	Application timing	Data (t/ha)
Untreated/Half-Proline	20/03/2025	5.74
Untreated/Full-Proline	20/03/2025	5.93
Half-Proline/Untreated	28/11/2024	5.71
Full-Proline/Untreated	28/11/2024	5.87

Oilseed rape summary

Phoma stem canker

- Effective azole and non-azole options for phoma stem canker control
- Yield responses ranged from 0.15 to 0.50 t/ha in 2025
- There was little benefit from applying >50% full label rate (as part of a two-spray programme)

Light leaf spot

- Azoles, non-azoles and co-formulations effective and provide a similar disease reduction
- Azoles, non-azoles and co-formulations provide similar uplift in yield
- Both azole and non-azole chemistry available for use in the autumn
- Timing of application important to achieve control and yield protection

Sclerotinia stem rot

- A range of mode of action groups available for sclerotinia control
- Historic data available via:

ahdb.org.uk/knowledge-library/fungicide-performance-dose-response-curves-for-winter-oilseed-rape

Acknowledgements

Georgia Baxter, AHDB

Catherine Harries, AHDB

Jonathan Blake, Philip Walker and Rebecca Joynt, ADAS

Stuart Knight, Aoife O' Driscoll and Nichola Hawkins, Niab

Neil Havis, SRUC

Simon Edwards, Harper Adams University

Stephen Kildea, Teagasc


‘Inspiring our farmers, growers and industry to succeed in a rapidly changing world’