



# Fungicide performance in wheat and barley (April 2024)

Updated slides that feature data for a newly authorised (April 2024) cereal fungicide product:

Miravis Plus (Syngenta) that contains pydiflumetofen (also referred to as Adepidyn), which is a succinate dehydrogenase inhibitor (SDHI).



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

The AHDB Agronomy Conference presentation (7 December 2023) 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%).

Further information, including data for oilseed rape, is available on the AHDB website:

[ahdb.org.uk/fungicide-performance](https://ahdb.org.uk/fungicide-performance)

# Wheat trial sites in 2023

	Site	Spray Timing	Target disease	Variety
1	Rosemaund	T2	Septoria tritici	Elation
2	Sutton Scotney	T1.5	Septoria tritici	LG Skyscraper
3	E. Lothian	T2	Septoria tritici	KWS Barrel
4	Terrington	T1	Yellow rust	KWS Zyatt
5	Cambridge	T2	Brown rust	Crusoe
6	Gleadthorpe	T3	Fusarium	RGT Illustrious
7	Carlow	T2	Septoria tritici	Graham
8	Cardigan	T2	Septoria tritici	Elation
9	Telford	T2	Septoria tritici	LG Skyscraper
10	Dundee	T1	Septoria tritici	KWS Barrel

# Wheat – registered products

Product	Active(s)	Mode of Action
Arizona*	folpet	Multi-site
Proline 275*	prothioconazole	DMI**
Myresa	mefentrifluconazole (revysol)	DMI**
Peqtiga	fenpicoxamid (inatreq)	QII
Elatus Plus	benzovindiflupyr (solatenol)	SDHI
Vimoy	isoflucypram (iblon)	SDHI
<b>New</b> Miravis Plus	<b>pydiflumetofen</b>	<b>SDHI</b>
Ascra Xpro	bixafen + fluopyram + prothioconazole	SDHI + SDHI + DMI**
Revystar XE	fluxapyroxad + mefentrifluconazole	SDHI + DMI**
Univoq	fenpicoxamid + prothioconazole	QII + DMI**

A further five unregistered products were tested in 2023. Data on these will be released upon registration.

\*Arizona and Proline only tested at full-dose (100%) on septoria

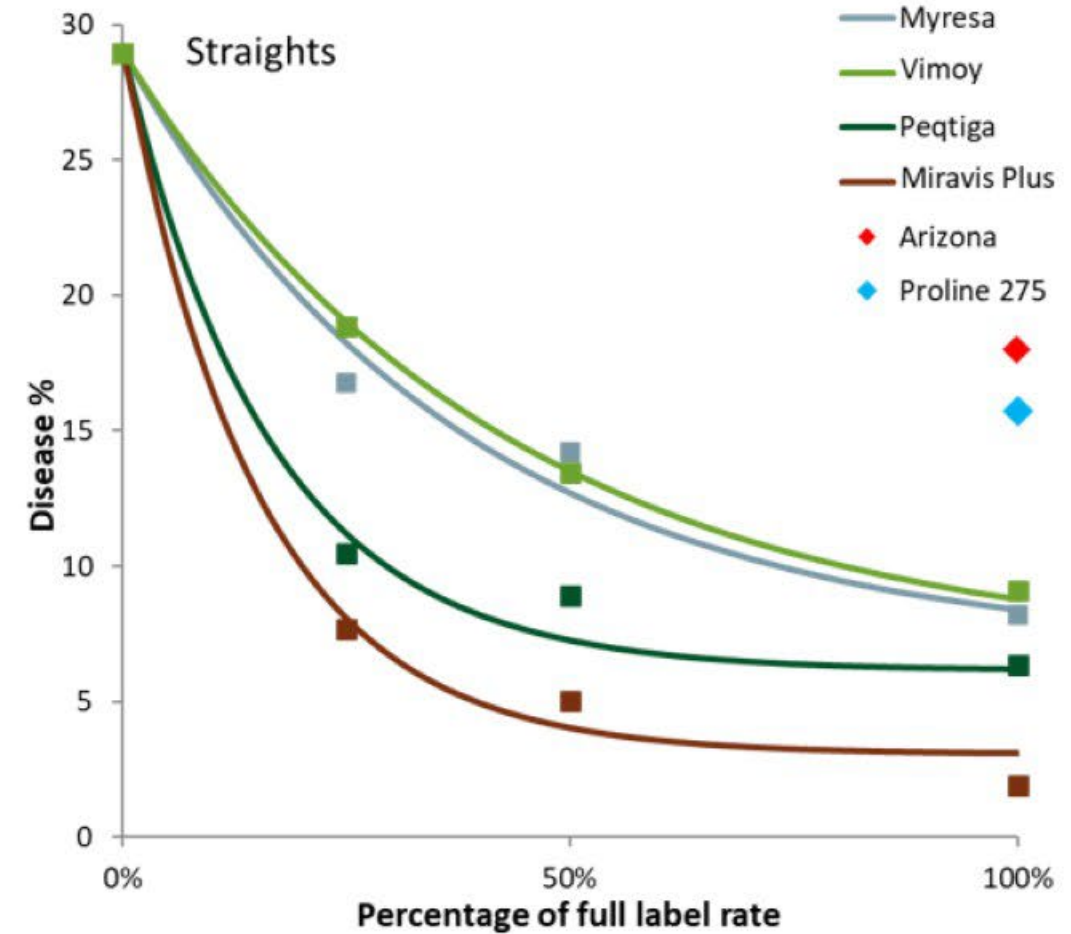
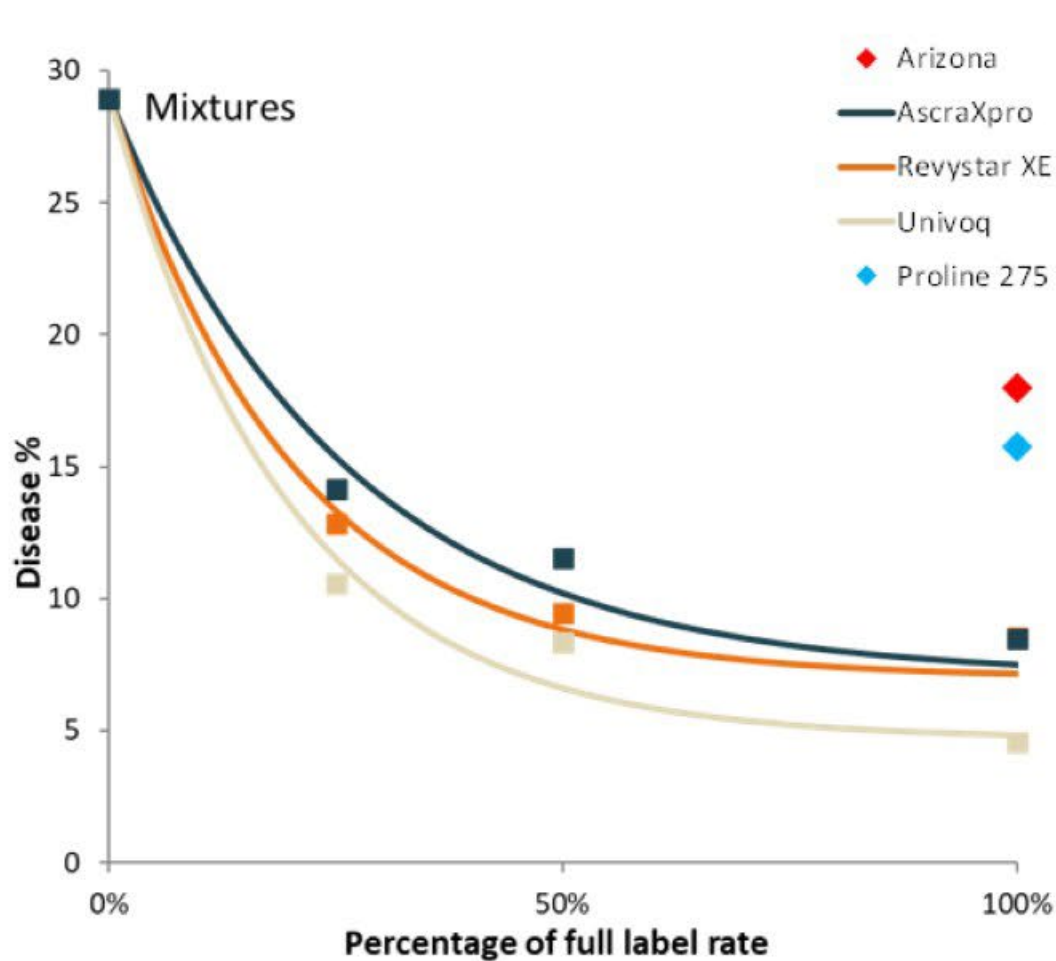
\*\*Azole

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

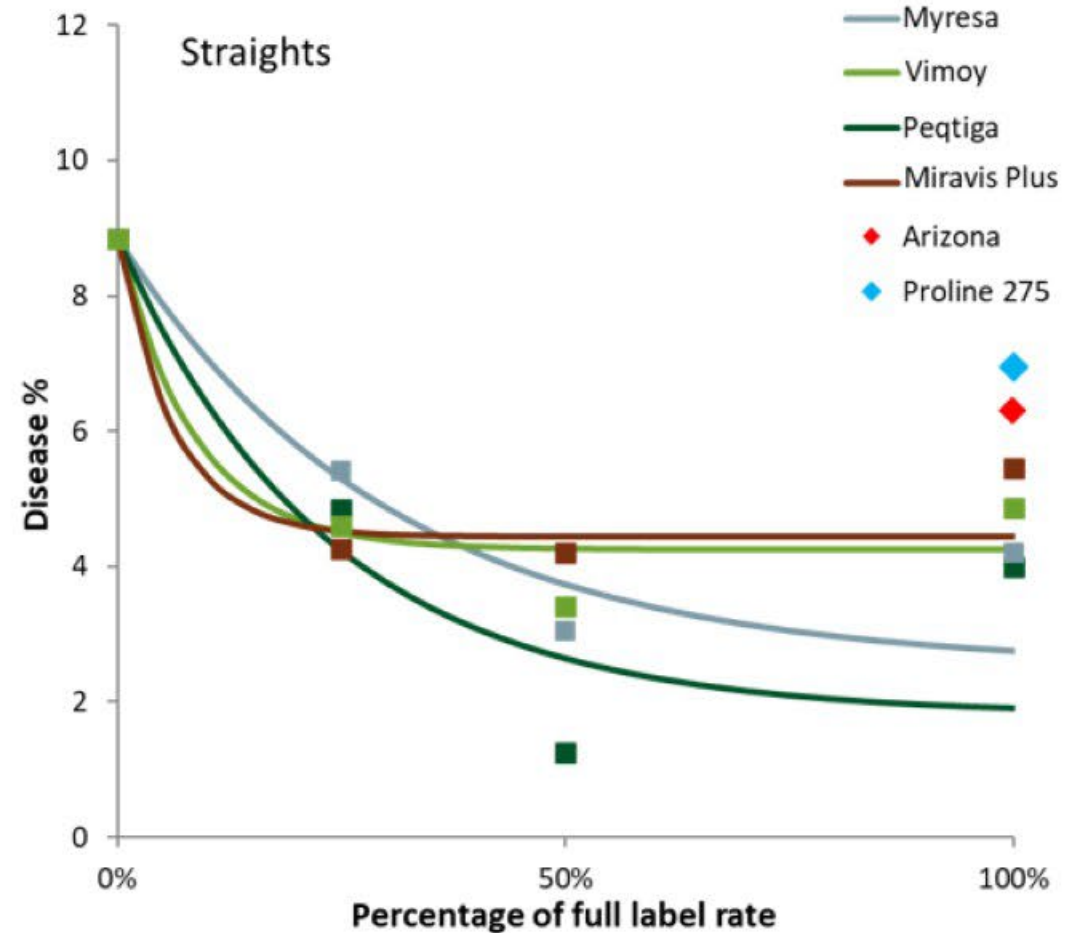
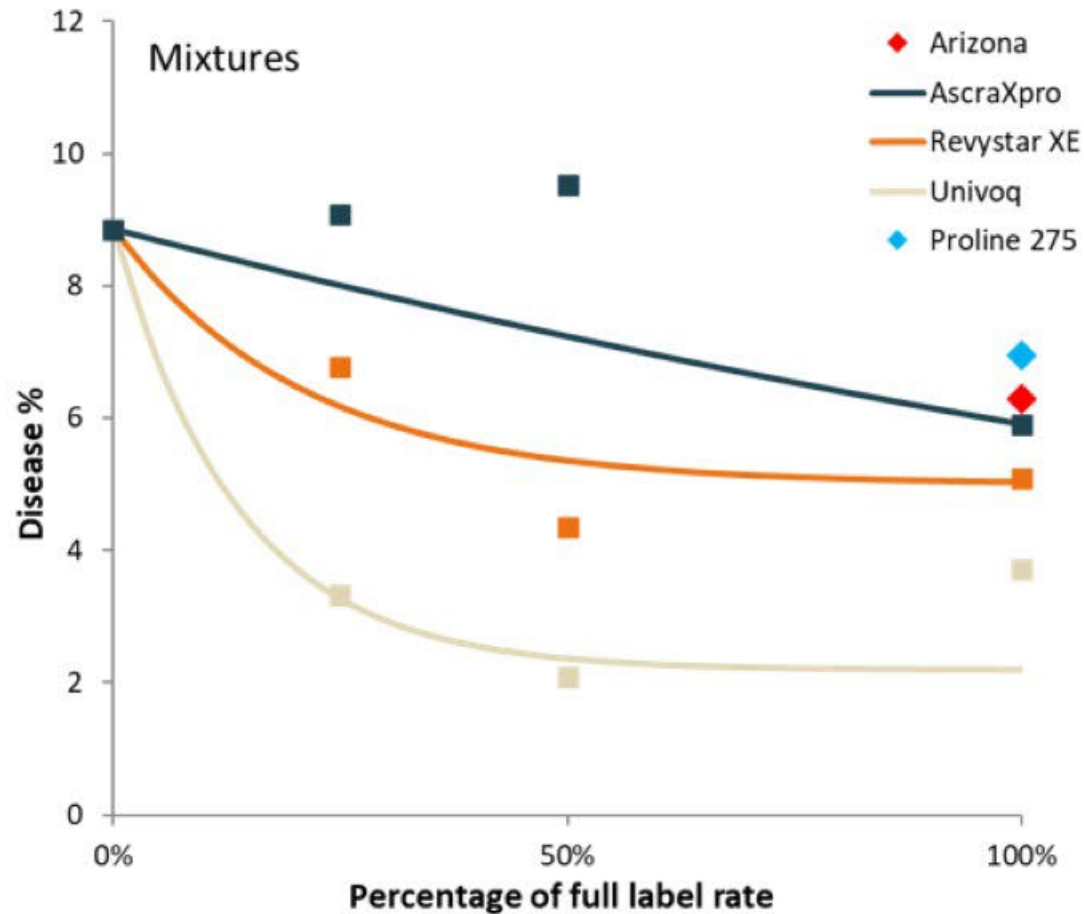
# Wheat septoria tritici efficacy data in 2023

Trial site		Protectant	Eradicant	Mixed
1	Rosemaund T2		X	
2	Sutton Scotney T1.5	X		X
3	E. Lothian T2			X
7	Carlow T2	X		
8	Cardigan T2	X		
9	Telford T2			X
10	Dundee T1	X		

# Septoria protectant overtrial 2023 (4 trials)

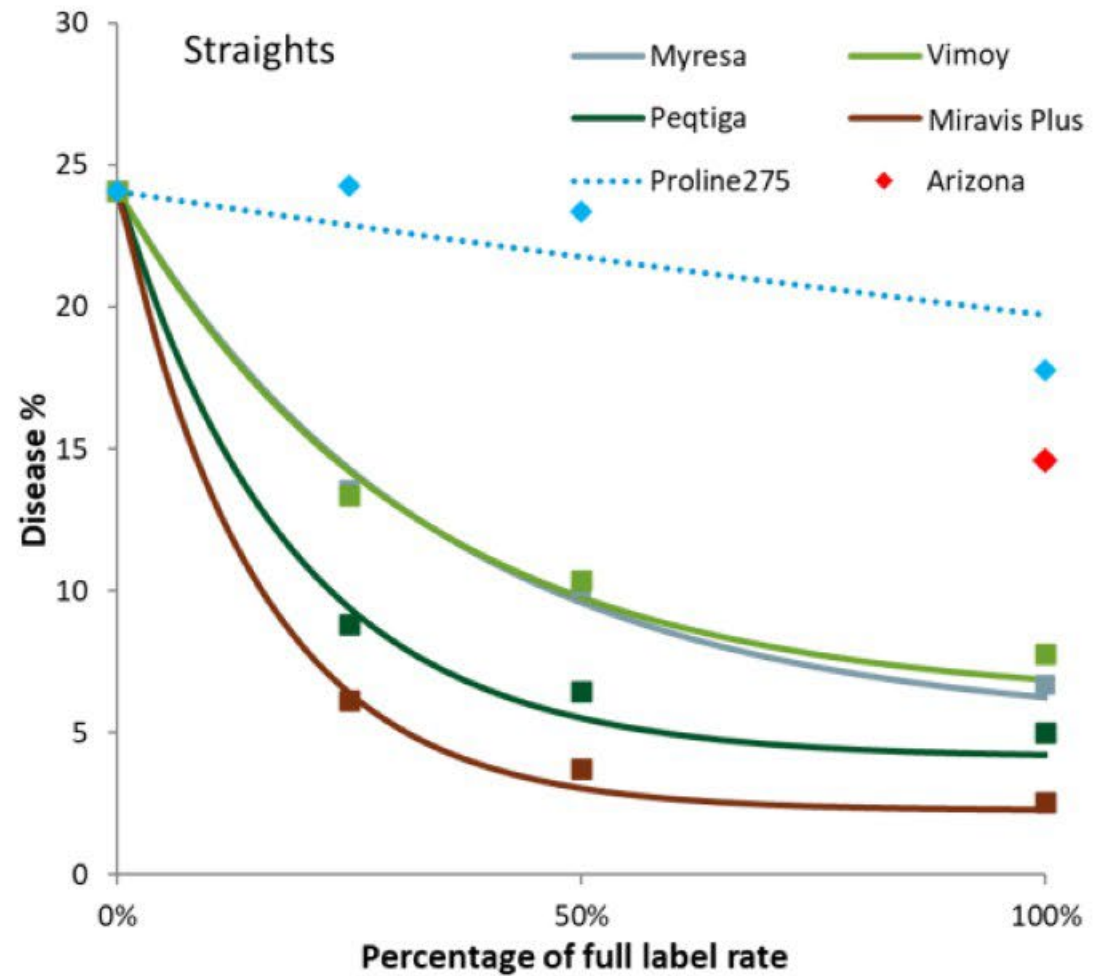
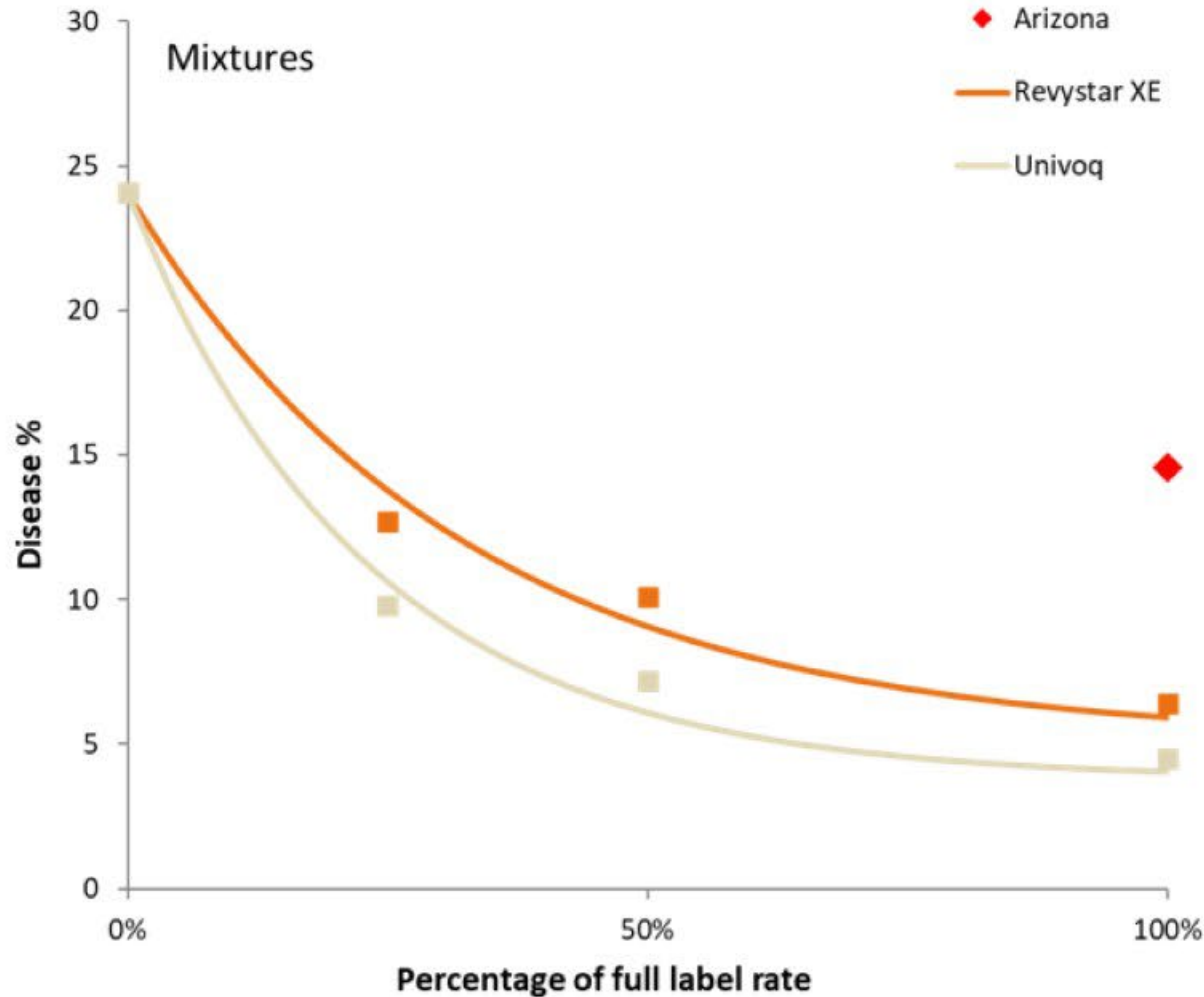


# Septoria mixed overtrial 2023 (3 trials)



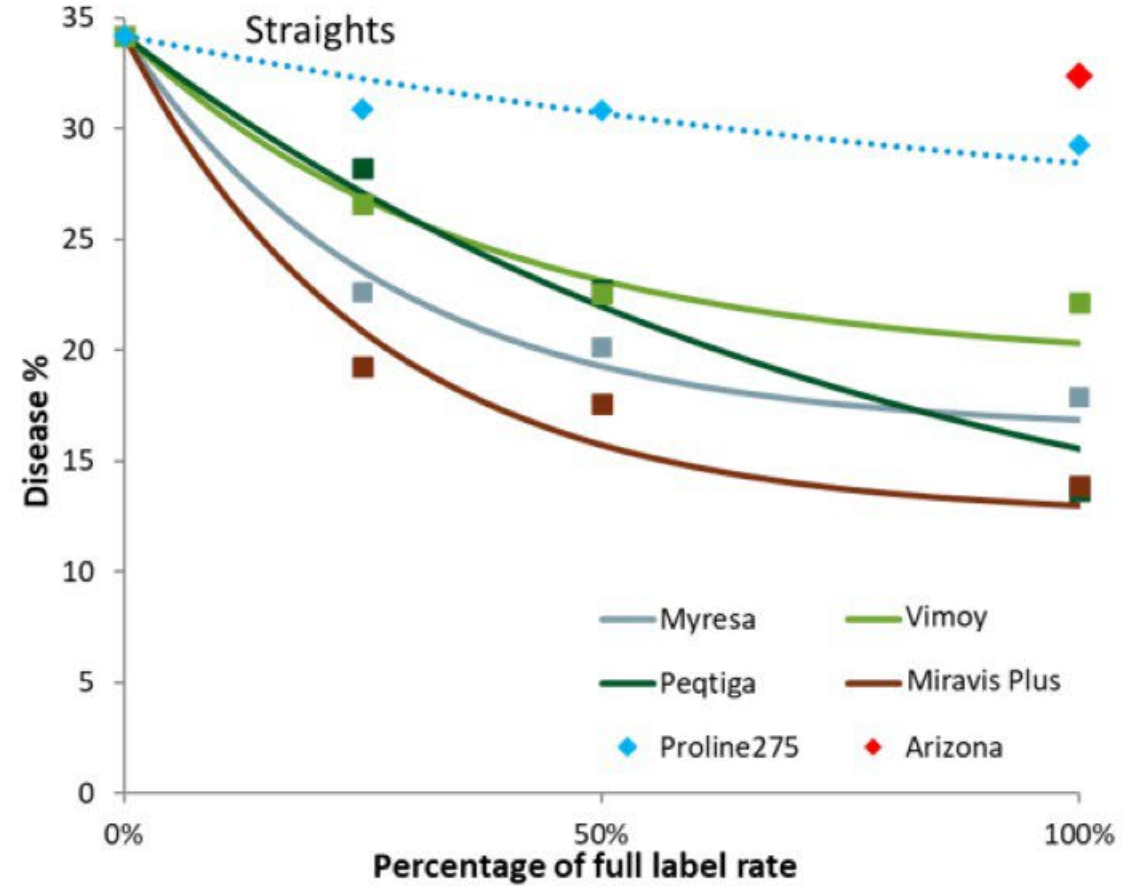
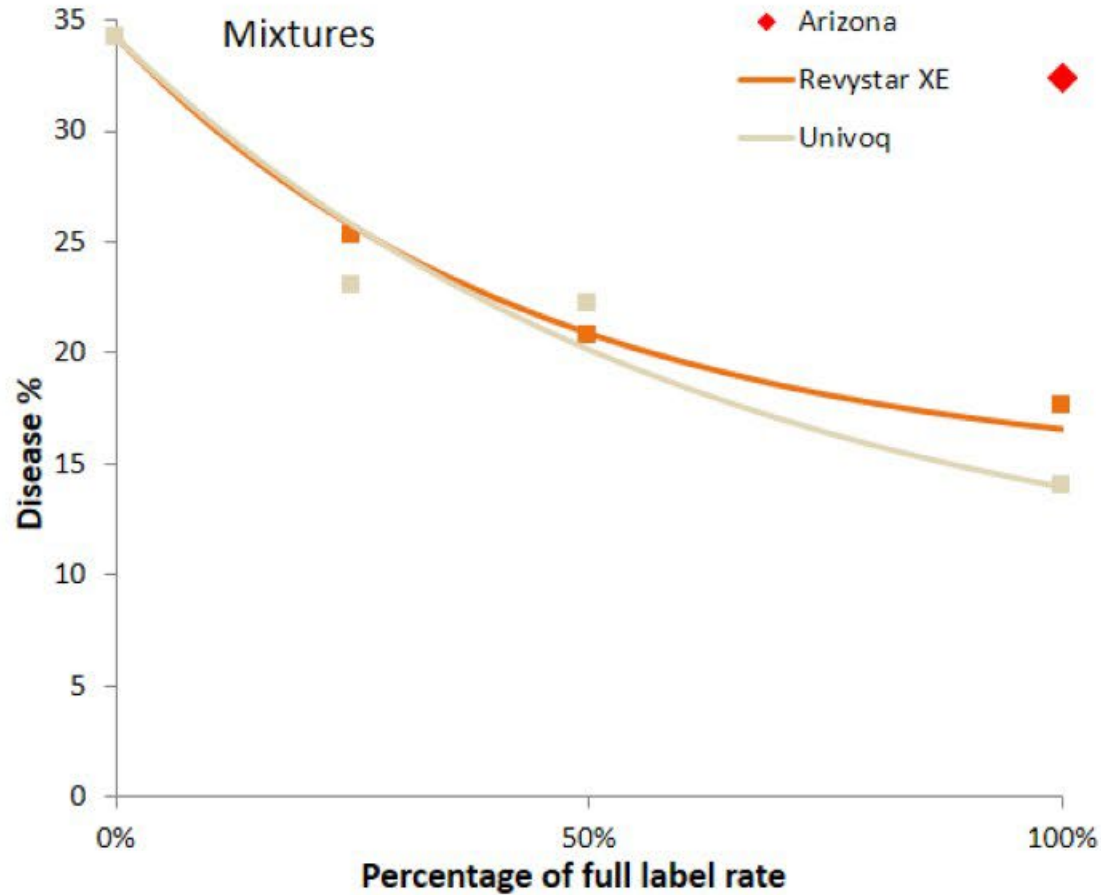


# Septoria protectant overyear 2021-23 (17 trials)

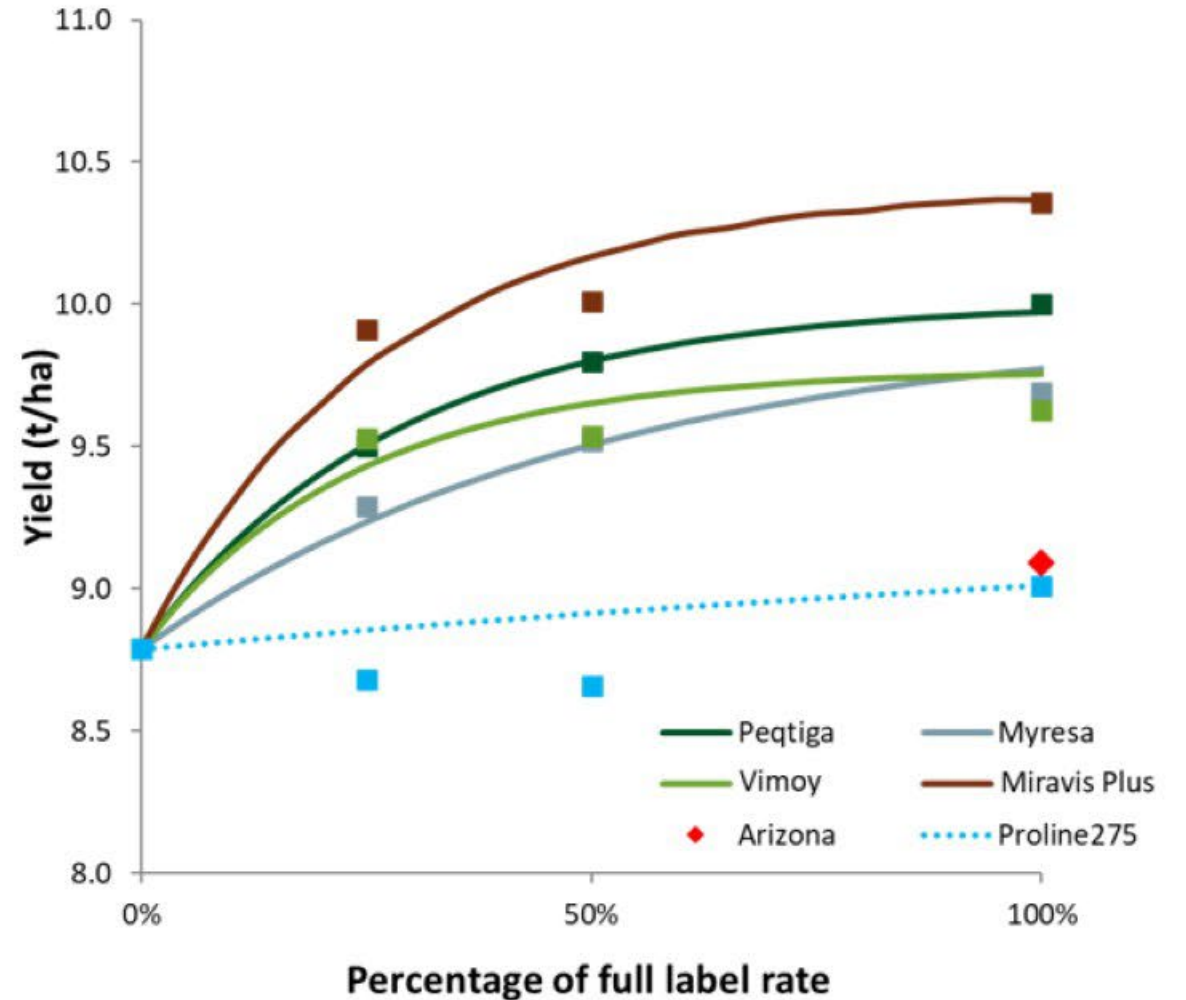
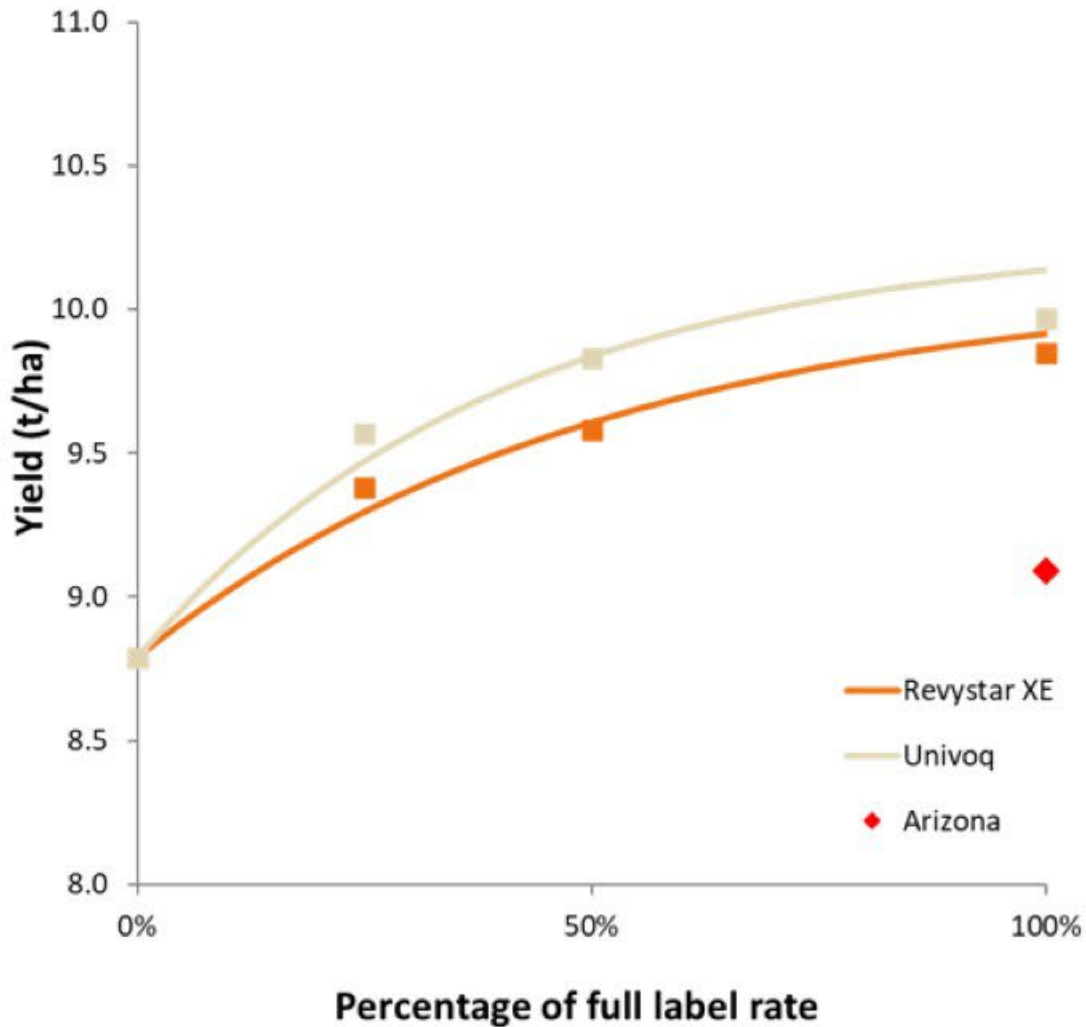




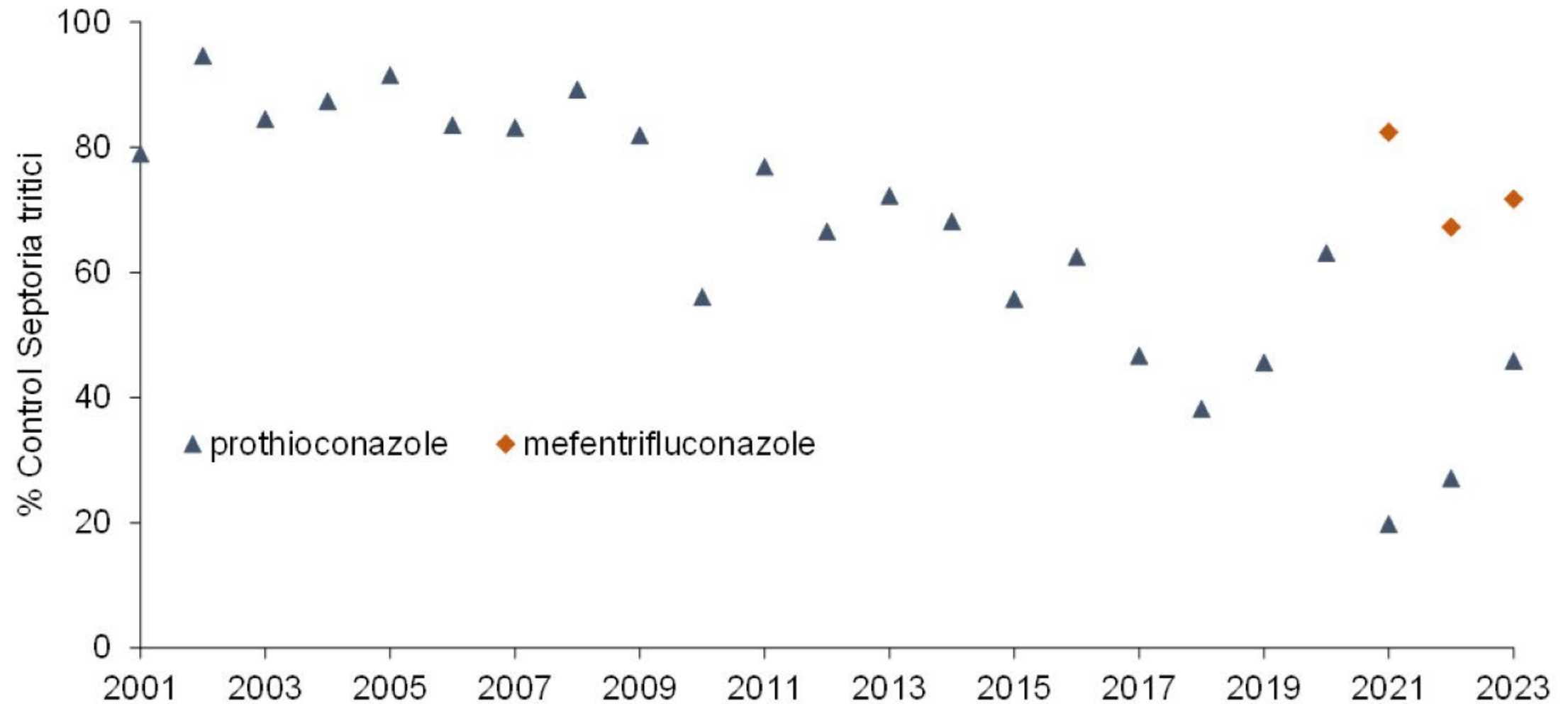
# Septoria eradicant overyear 2021-23 (7 trials)



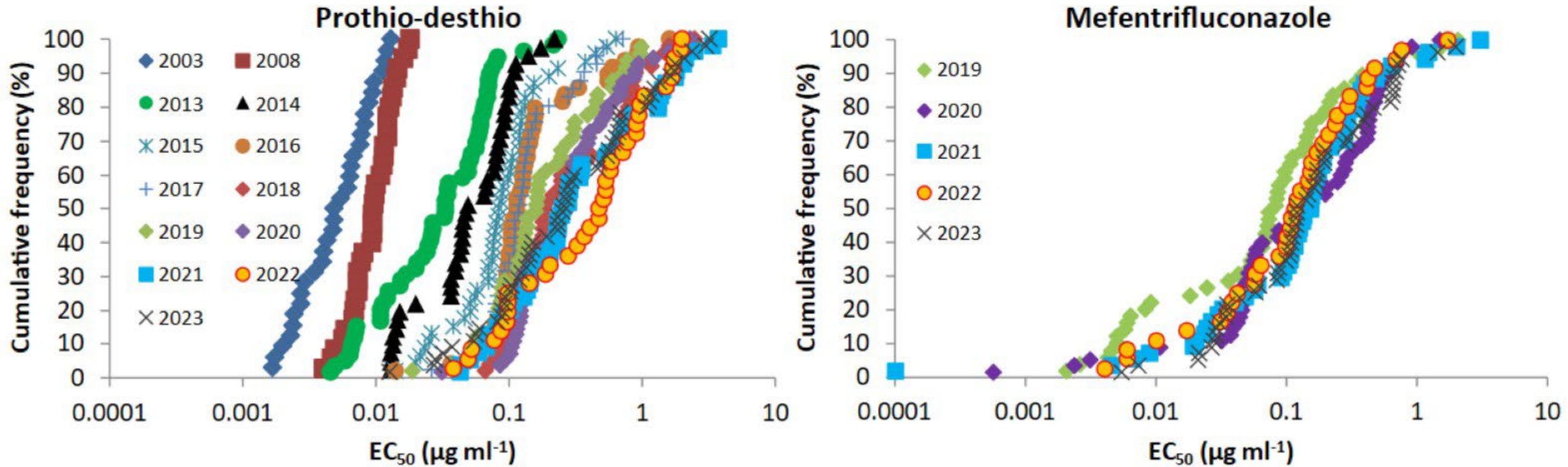
# Septoria yield overyear 2021-23 (19 trials)



# Changes in septoria protectant activity of Azoles (full label rates)

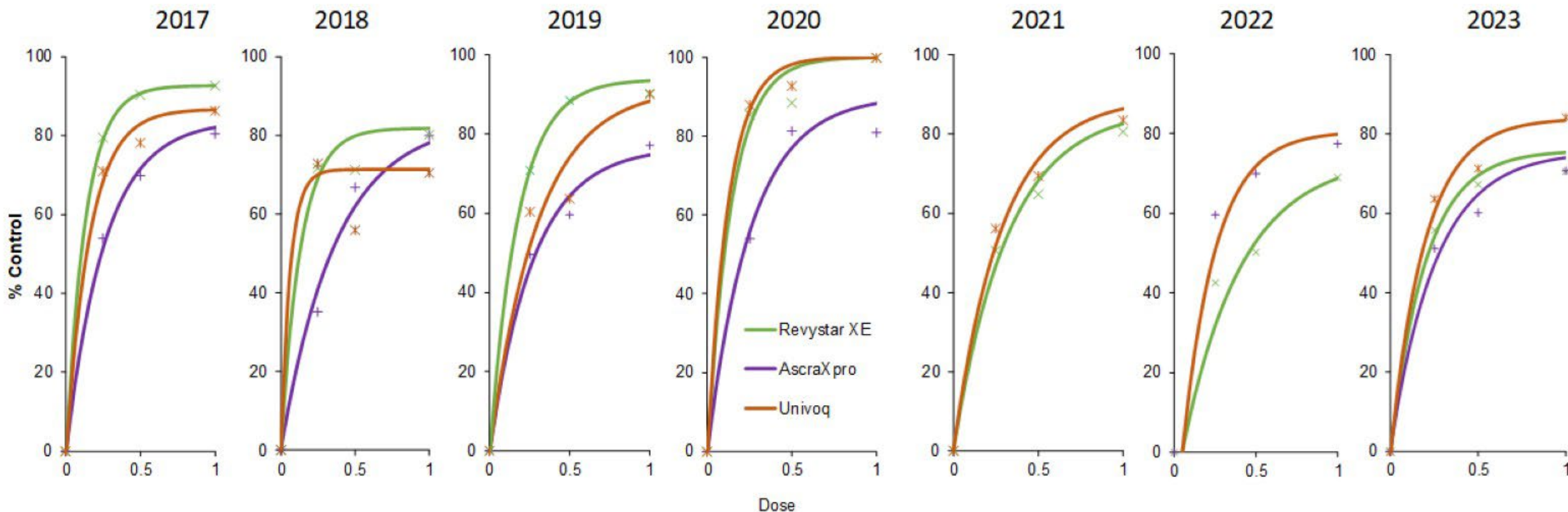


# Septoria sensitivity to azole fungicides over time (Rothamsted, early season)

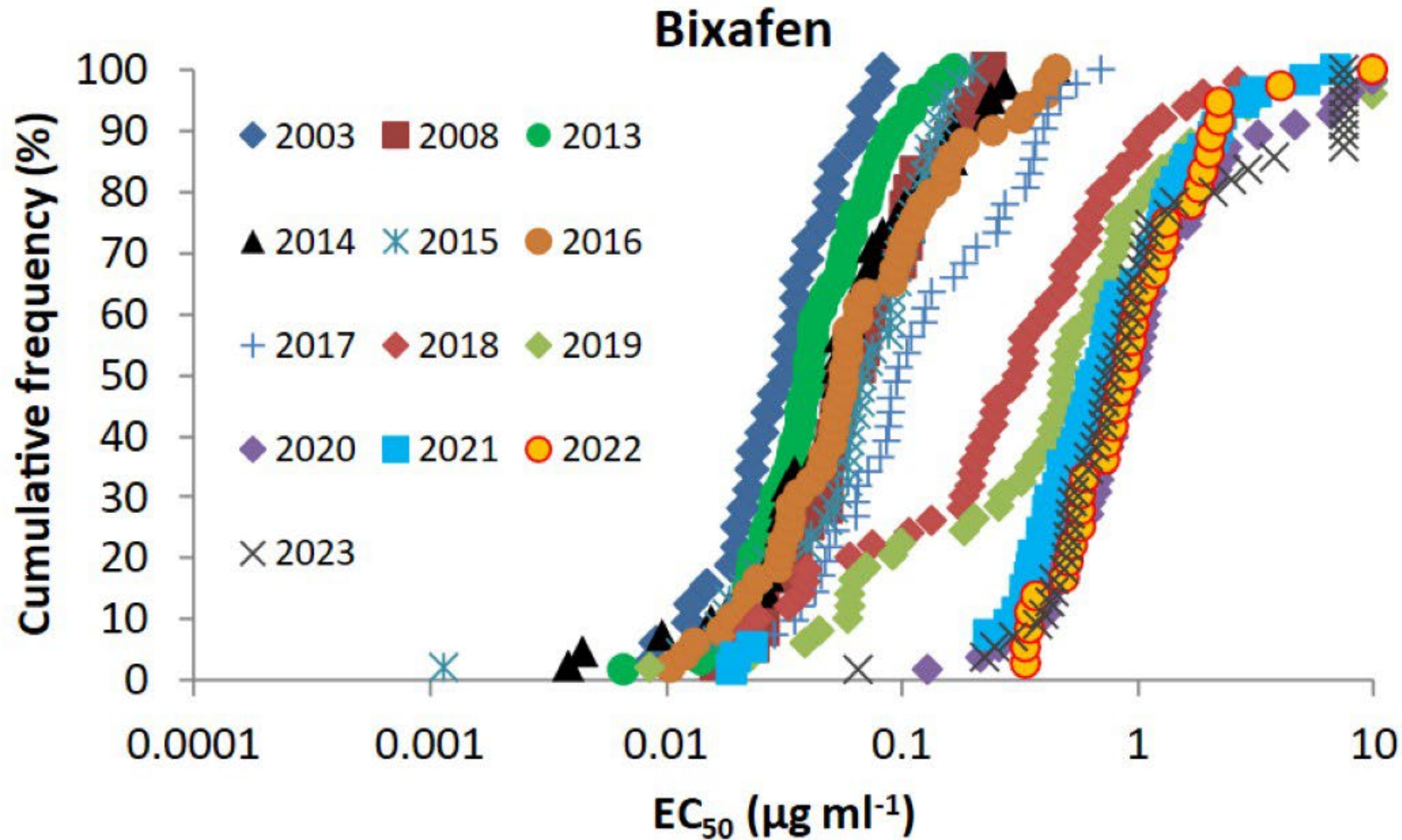




# Changes in septoria protectant activity of mixture products



# Septoria sensitivity to SDHI fungicide (bixafen) over time (Rothamsted, early season)



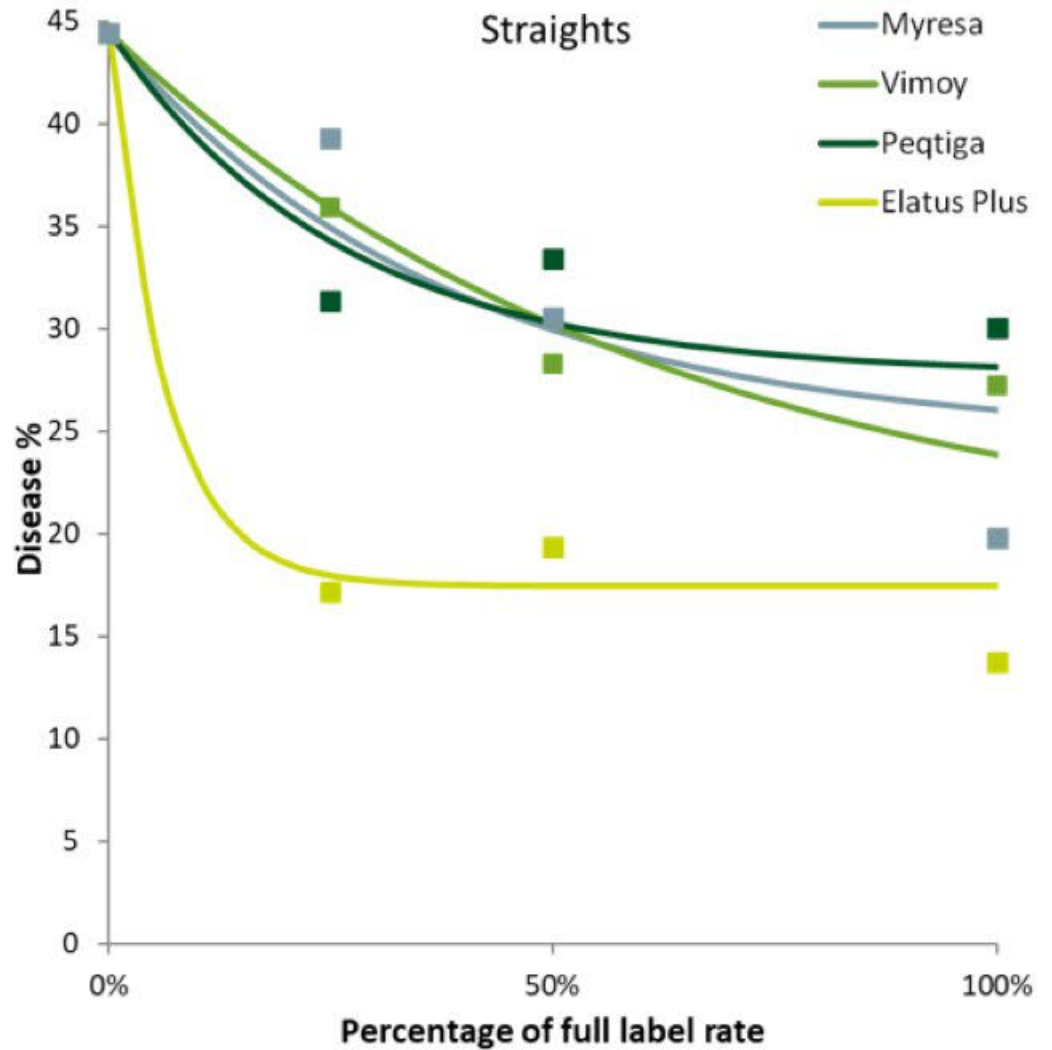
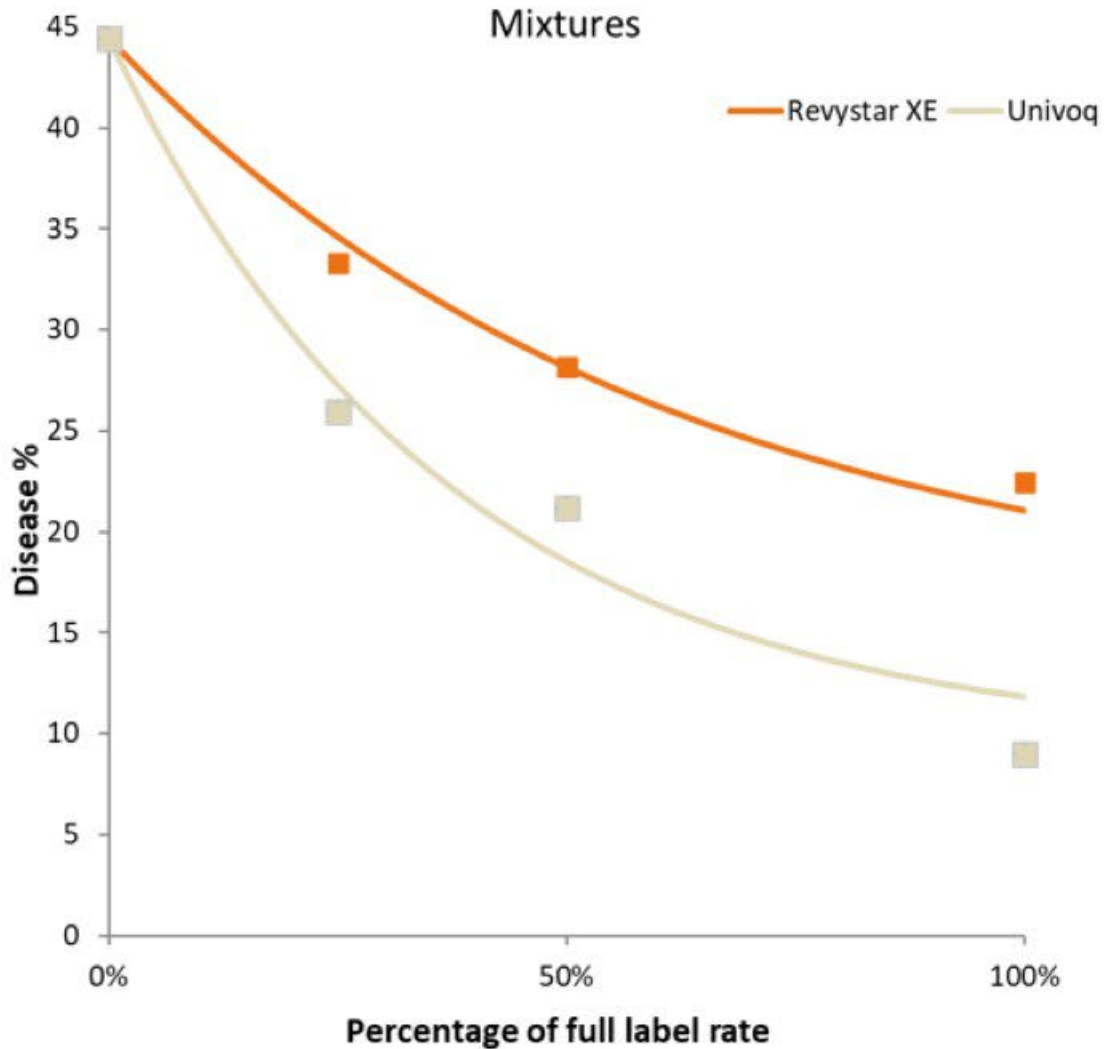


# Rust trial data in 2023

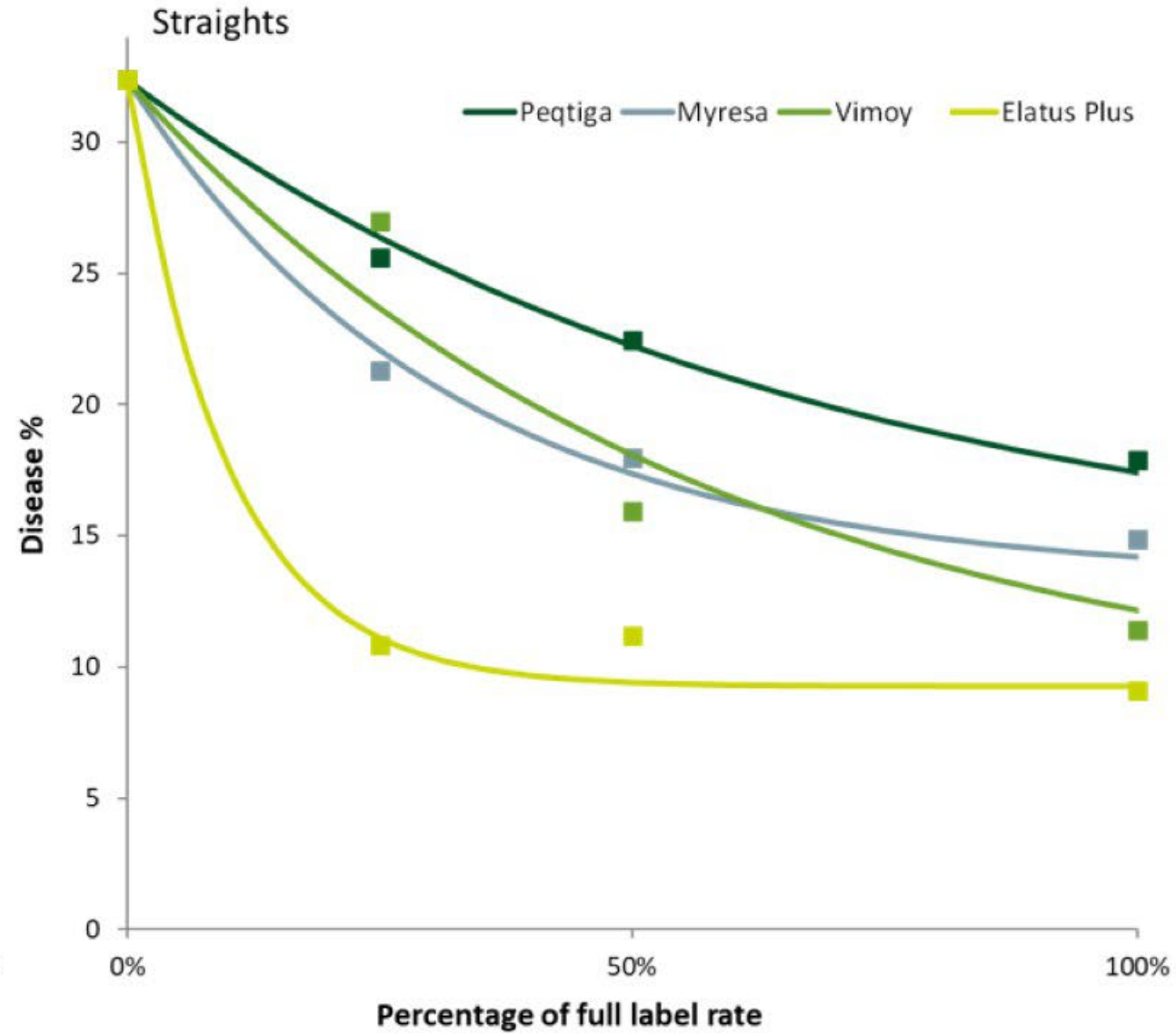
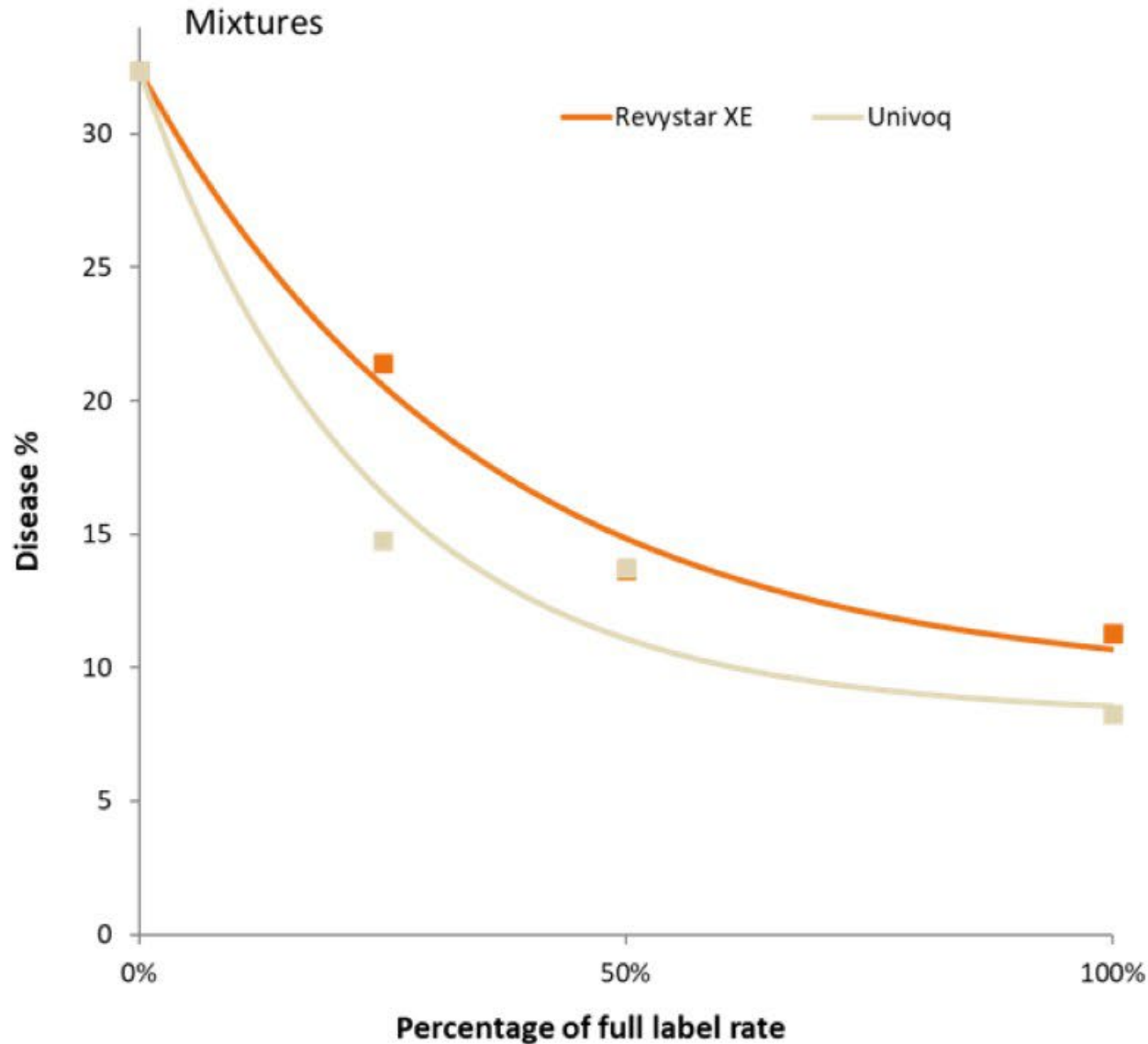
Site	Yellow rust	Brown rust	Yield
Terrington	x		x
Cambridge		x	x



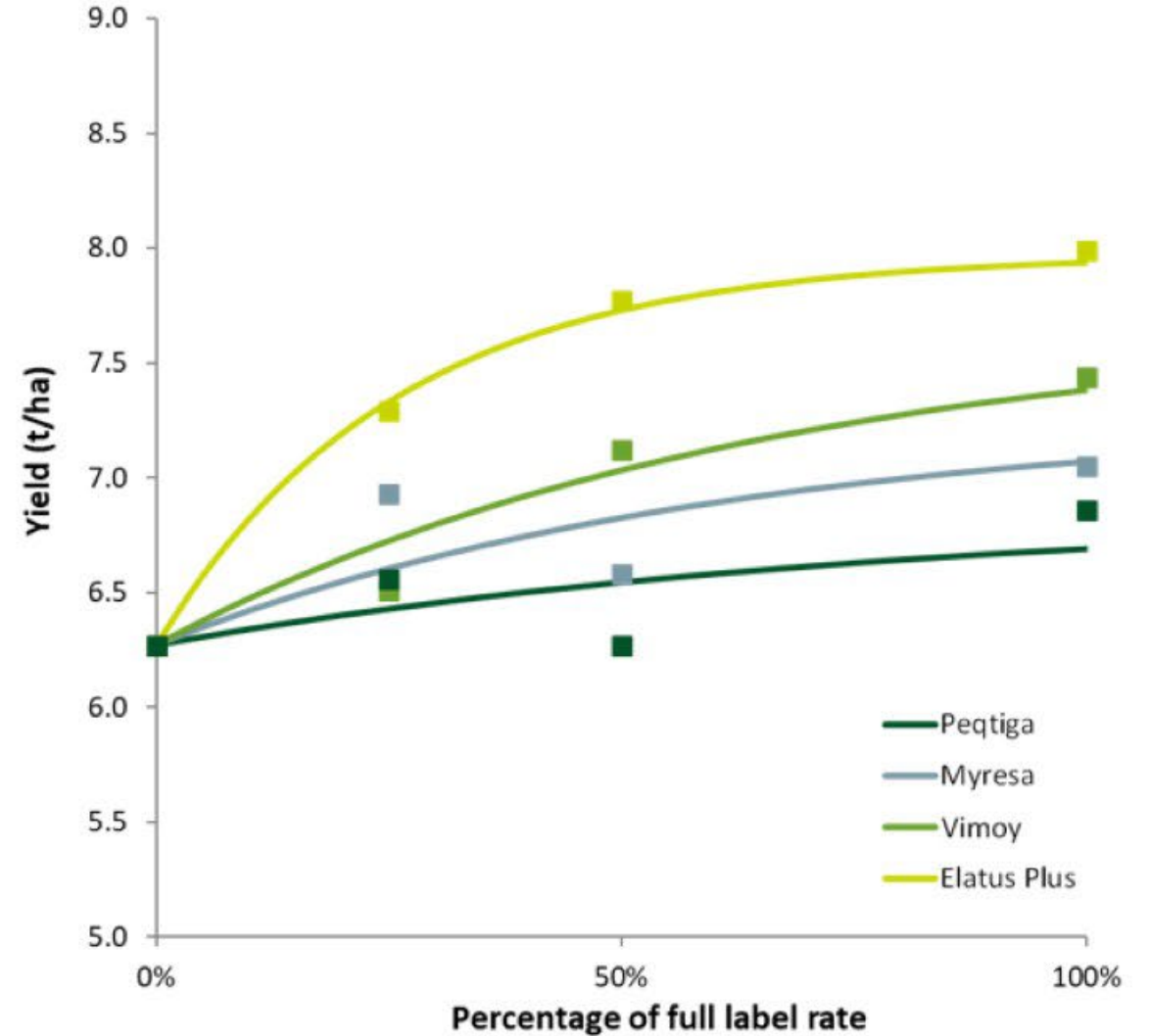
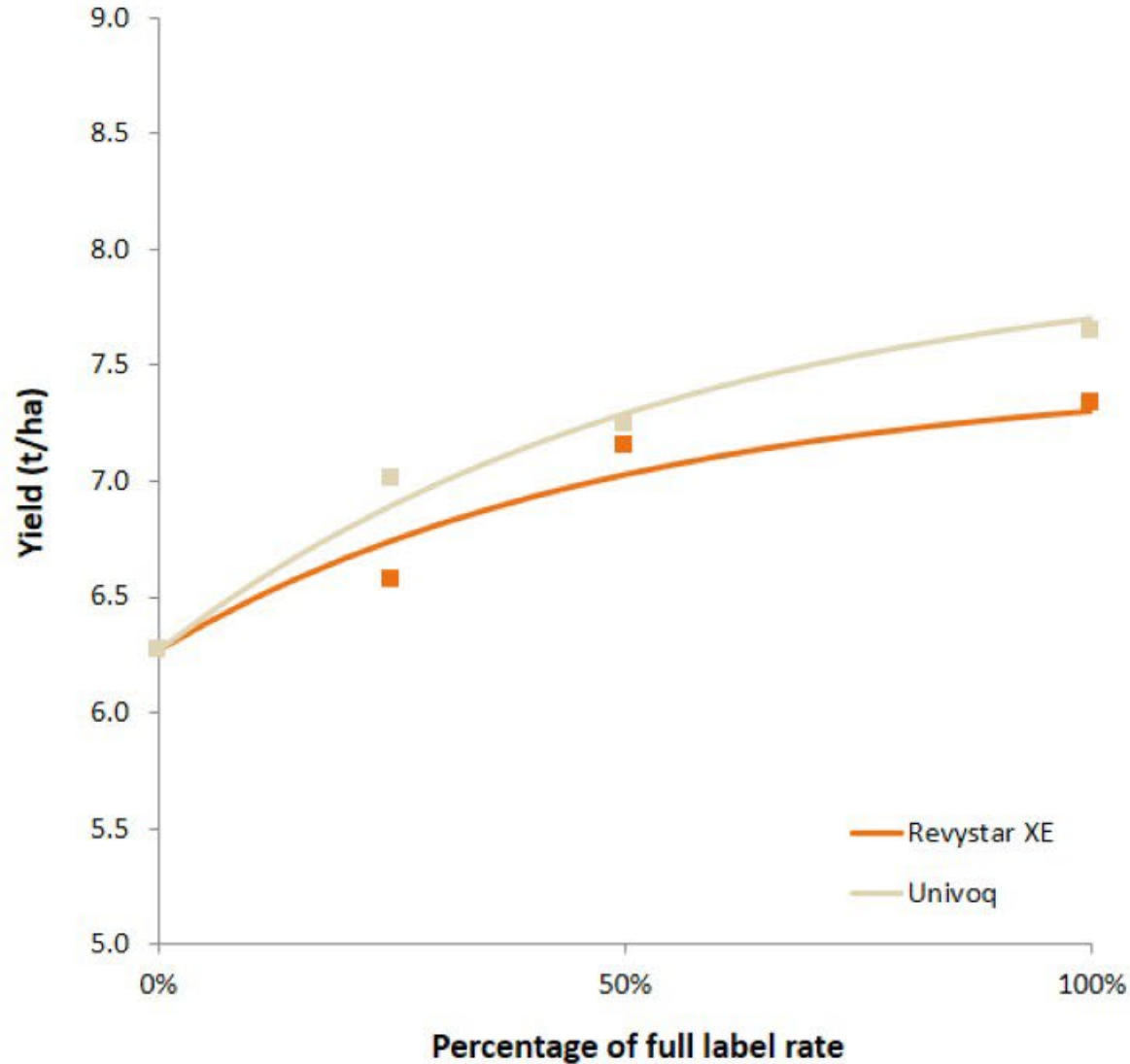
# Yellow rust 2023 (1 trial)



# Yellow rust overyear 2021-23 (3 trials)

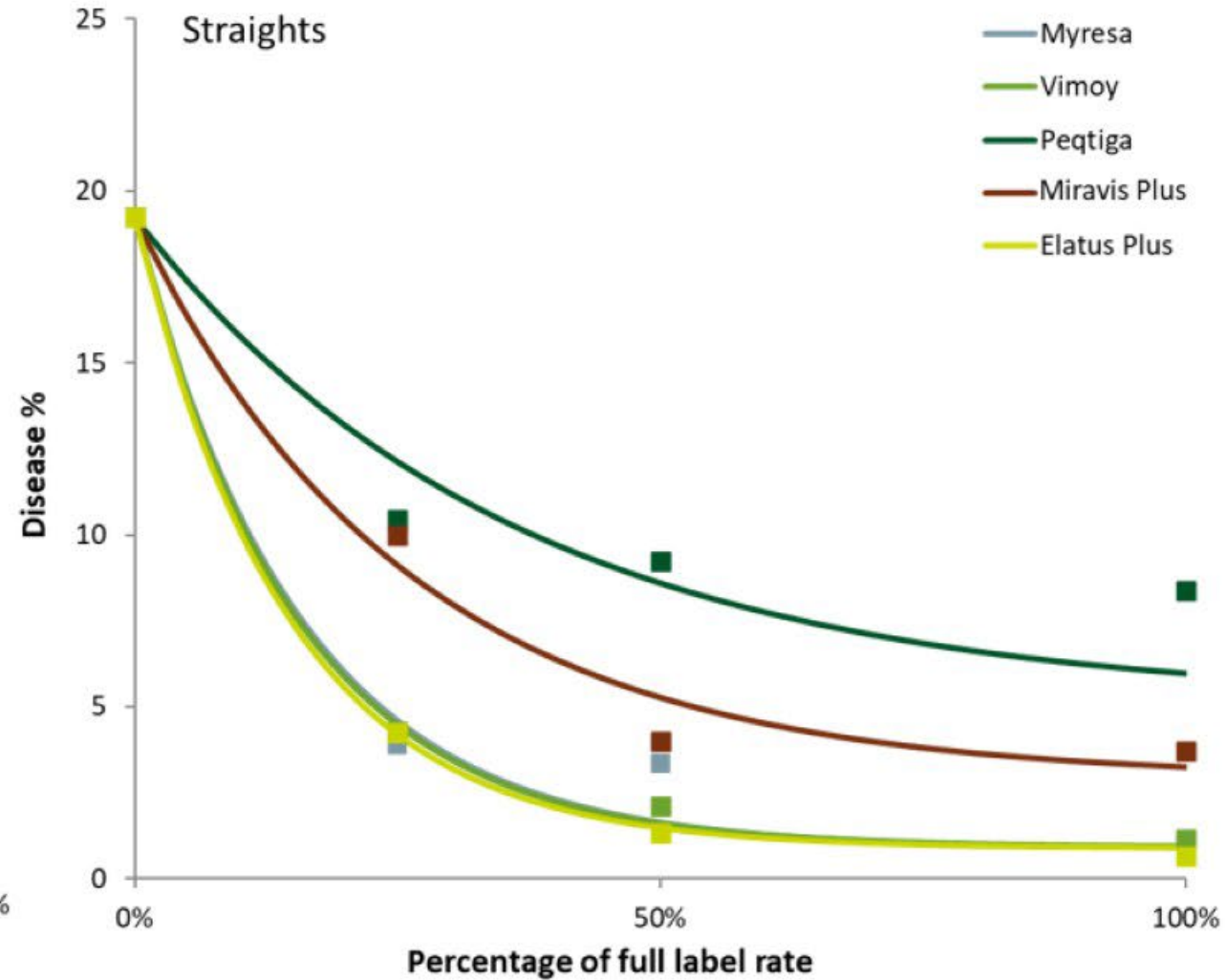
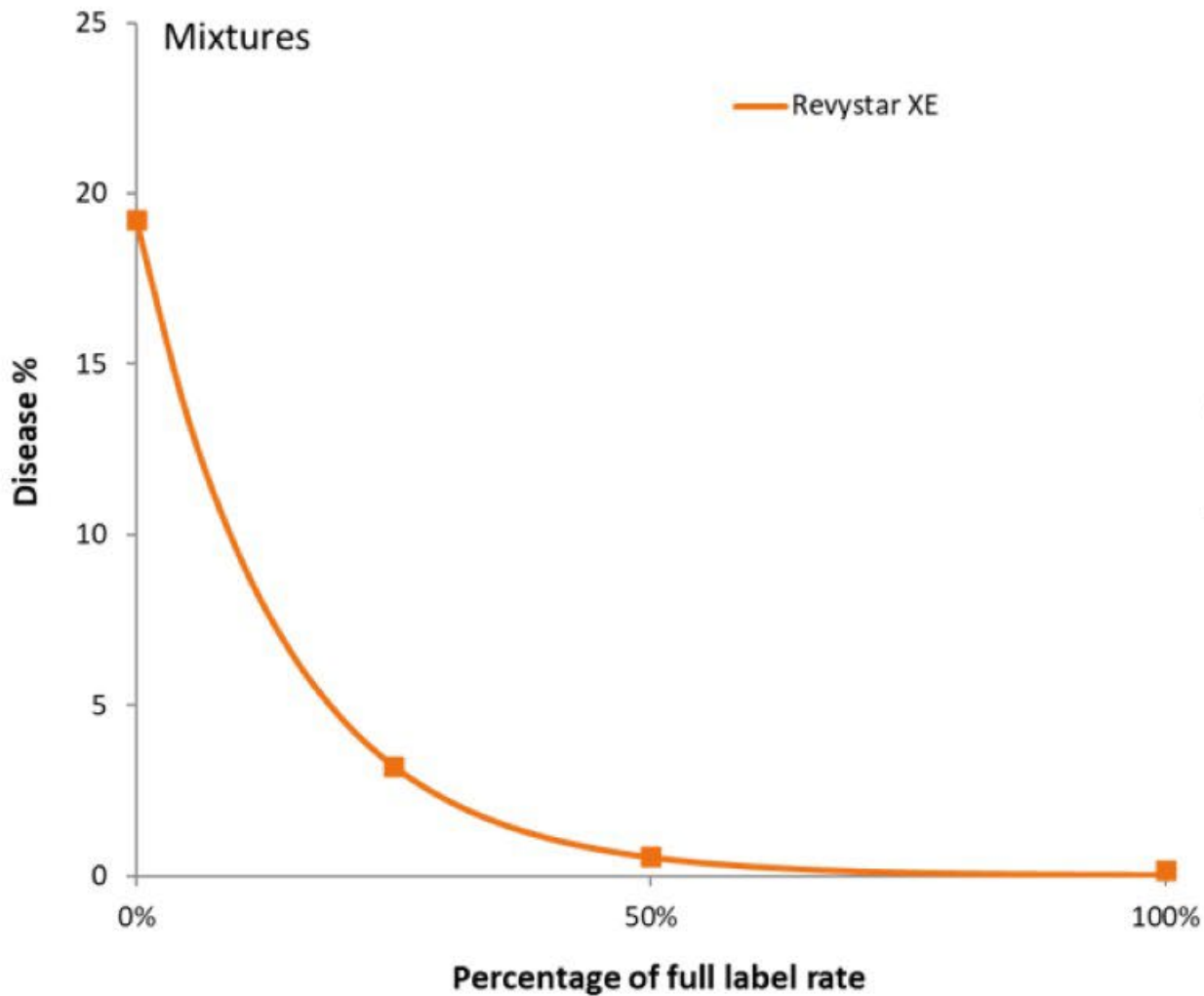


# Yellow rust yield overyear 2021-23 (3 trials)

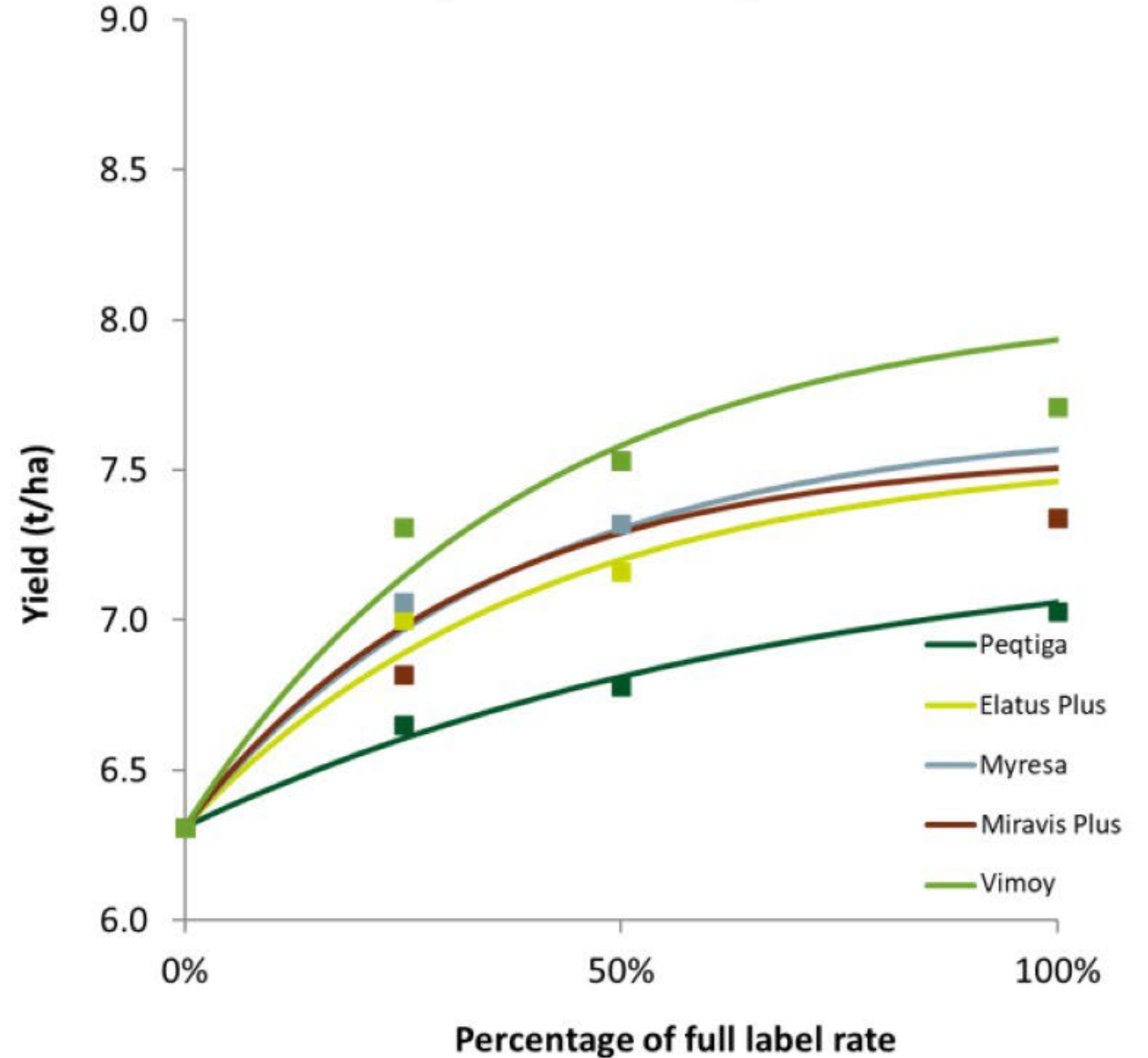
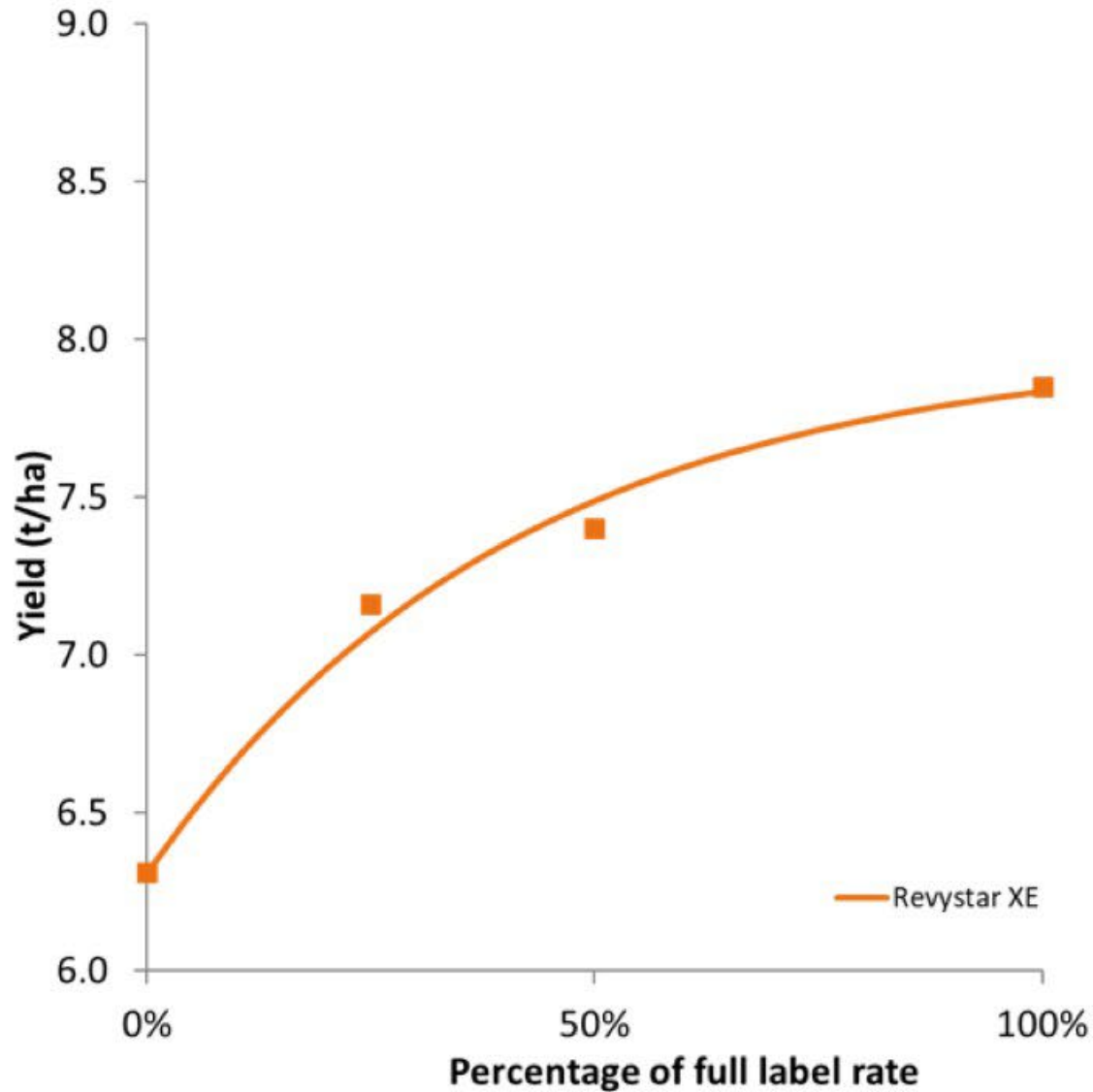




# Brown rust overyear 2021-23 (3 trials)

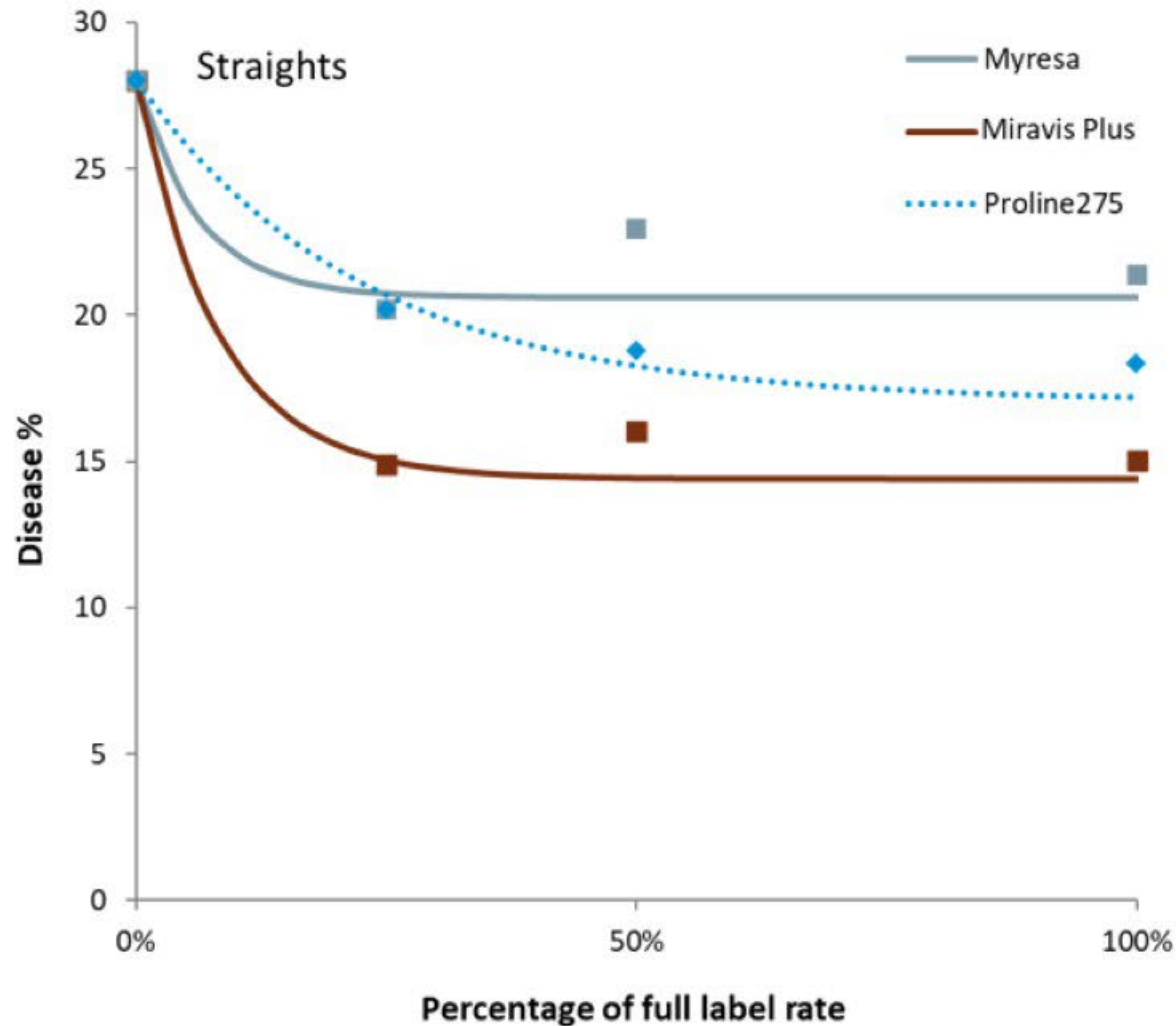


# Brown rust yield overyear 2021-23 (3 trials)





# Fusarium overyear 2021-23 (3 trials)



No new data on mycotoxin (DON) levels in 2023

# Wheat summary

- Of the approved actives tested, pydiflumetofen (Miravis Plus) and fenpicoxamid (Peqtiga) have given the highest levels of septoria control. Isoflucypram (Vimoy) and mefentrifluconazole (Myresa) also have good activity, especially as protectants
- Mixtures (Univoq, Revystar XE) give more robust control than the straights
- Good yellow rust control from isoflucypram and mefentrifluconazole, but benzo-vindiflupyr (Elatus Plus) and mixtures (Univoq, Revystar XE) are most effective
- Isoflucypram and mefentrifluconazole are both highly active against brown rust, with useful activity from pydiflumetofen
- Pydiflumetofen has shown very good activity against fusarium compared to the azole standard prothioconazole
- No major shifts in fungicide sensitivity seen in pathogen populations in 2023
- In programmes, use a combination of septoria-active fungicide groups to reduce the risk of resistance development

# Barley trial sites in 2023

	Site	Spray Timing	Target disease	Diseases Present	Variety
1	Lanark	T1	Rhynchosporium	Rhynchosporium, Ramularia	LG Mountain
3	Cardigan	T1	Rhynchosporium	Net blotch, Rhynchosporium, Brown rust	Bordeaux
4	High Mowthorpe	T2	Net blotch	Mildew, Net blotch, Rhynchosporium	LG Dazzle
5	Newton Abbot	T2	Net blotch	Septoria nodorum, Net blotch, Rhynchosporium	LG Dazzle
6	Midlothian	T2	Ramularia	Ramularia	Laureate
7	Carlow	T1.5	Rhynchosporium	Rhynchosporium	KWS Cassia
8	Carlow	T2	Ramularia	Ramularia	Pixel

# Barley – registered products

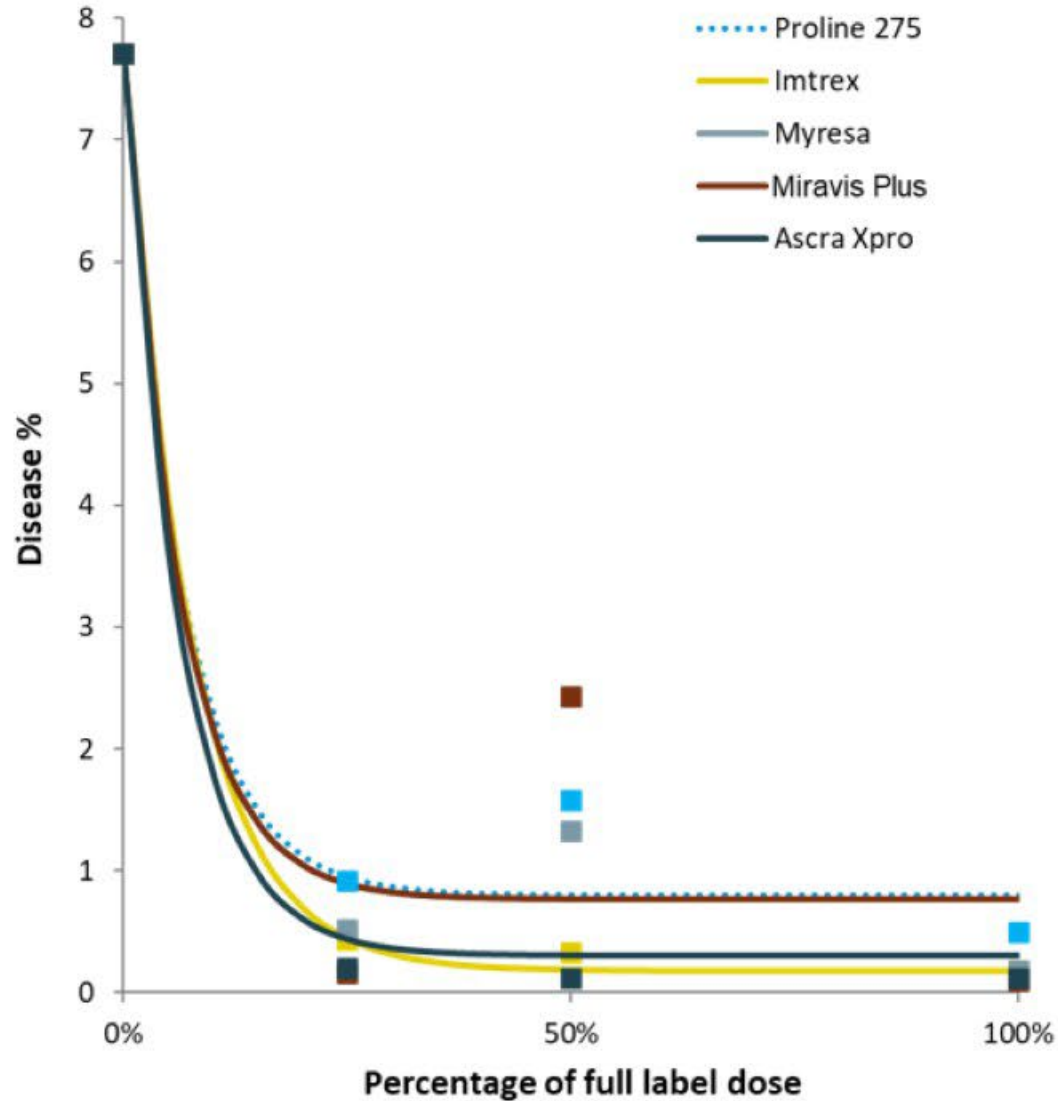
New

Product	Active(s)	Mode of Action
Proline 275	prothioconazole	DMI (azole)
Myresa	mefentrifluconazole (revysol)	DMI (azole)
Comet 200	pyraclostrobin	QoI (strobilurin)
Imtrex	fluxapyroxad	SDHI
<b>Miravis Plus</b>	<b>pydiflumetofen</b>	<b>SDHI</b>
Ascra Xpro	bixafen + fluopyram + prothioconazole	SDHI + SDHI + DMI (azole)
Revystar XE	fluxapyroxad + mefentrifluconazole	SDHI + DMI (azole)

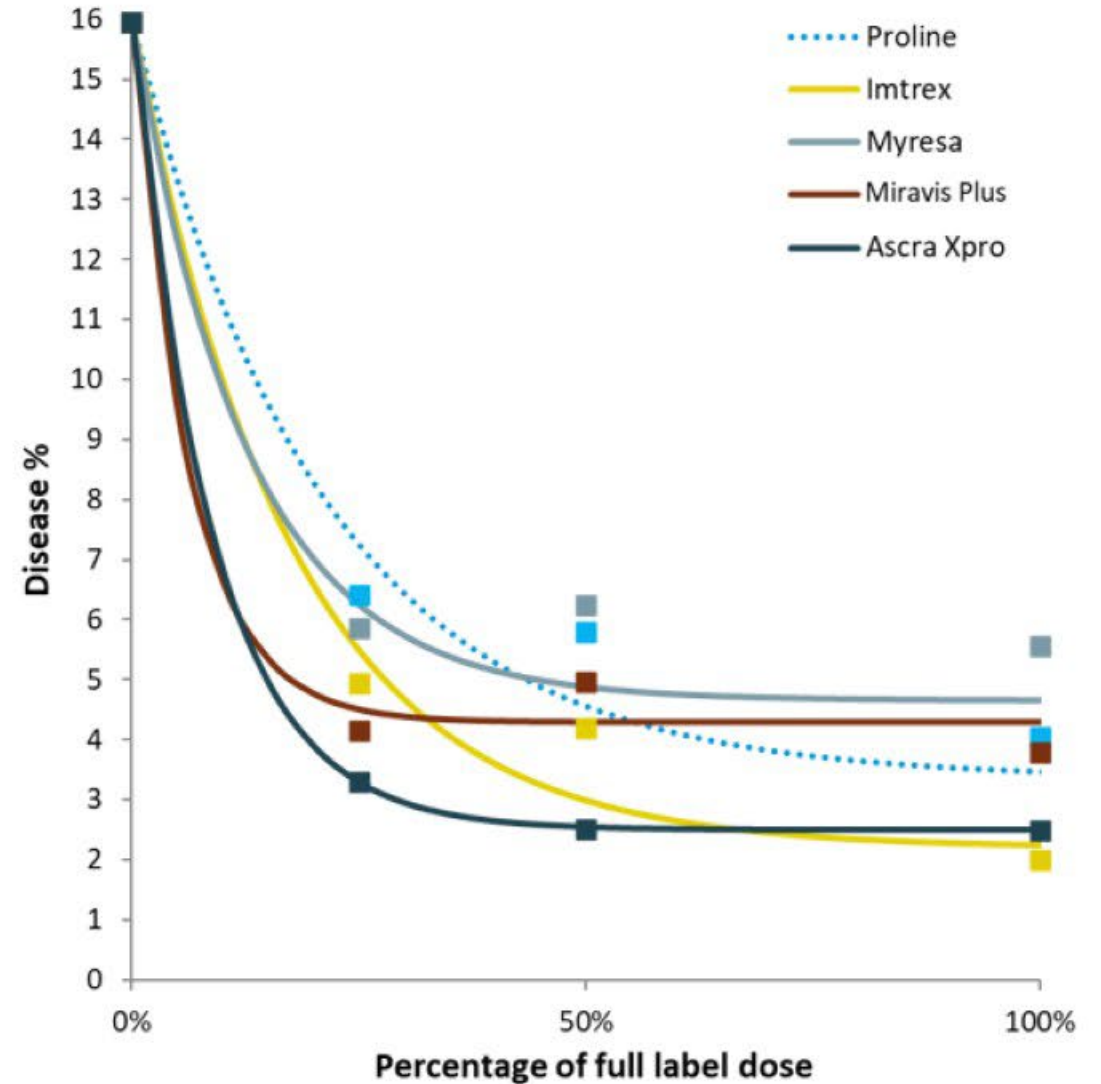
A further five unregistered products were tested in 2023.  
Data on these will be released upon registration.

Check labels prior to use: Comet, Imtrex, Myresa 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

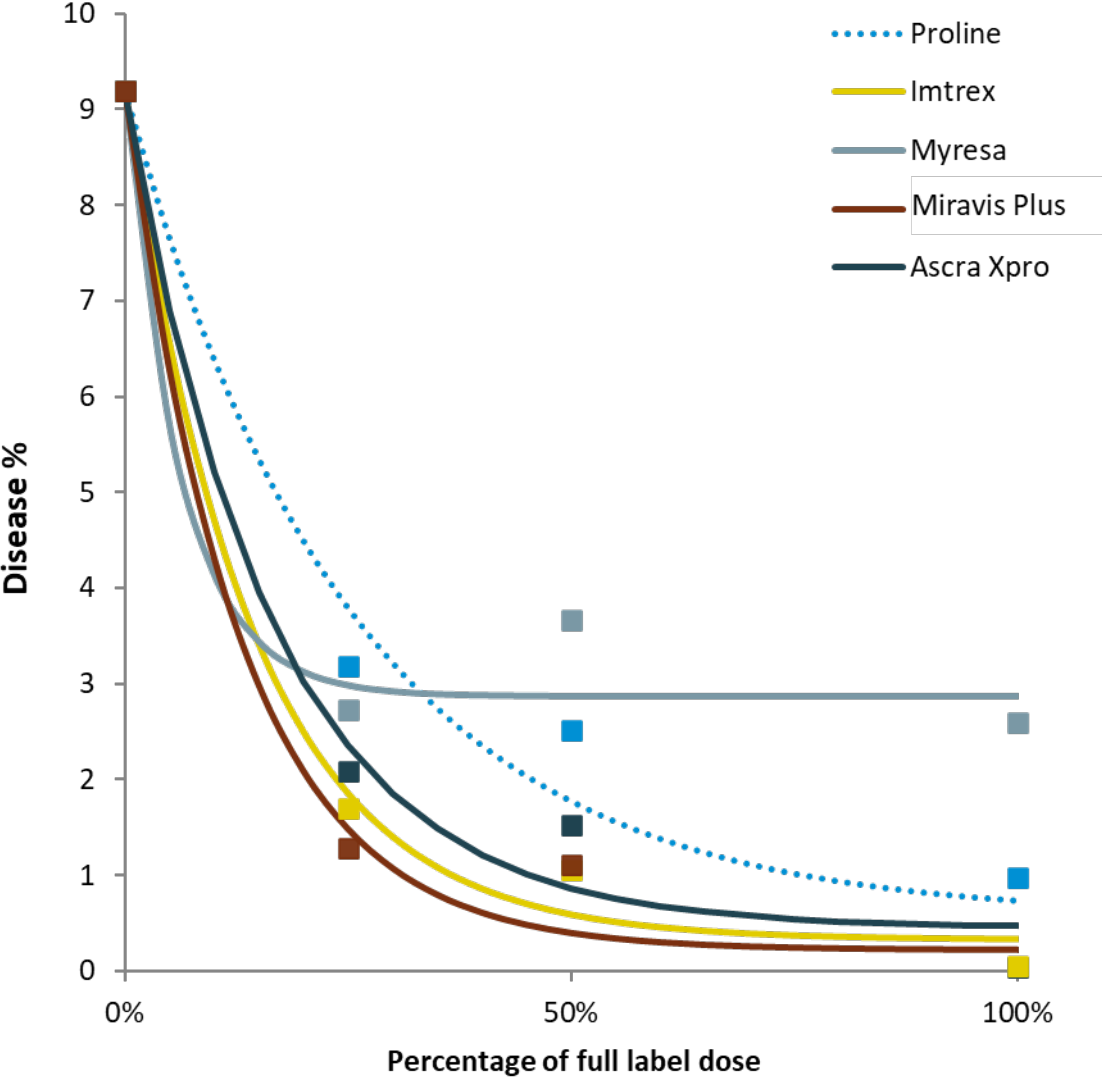
# Rhynchosporium protectant 2023 (1 trial)



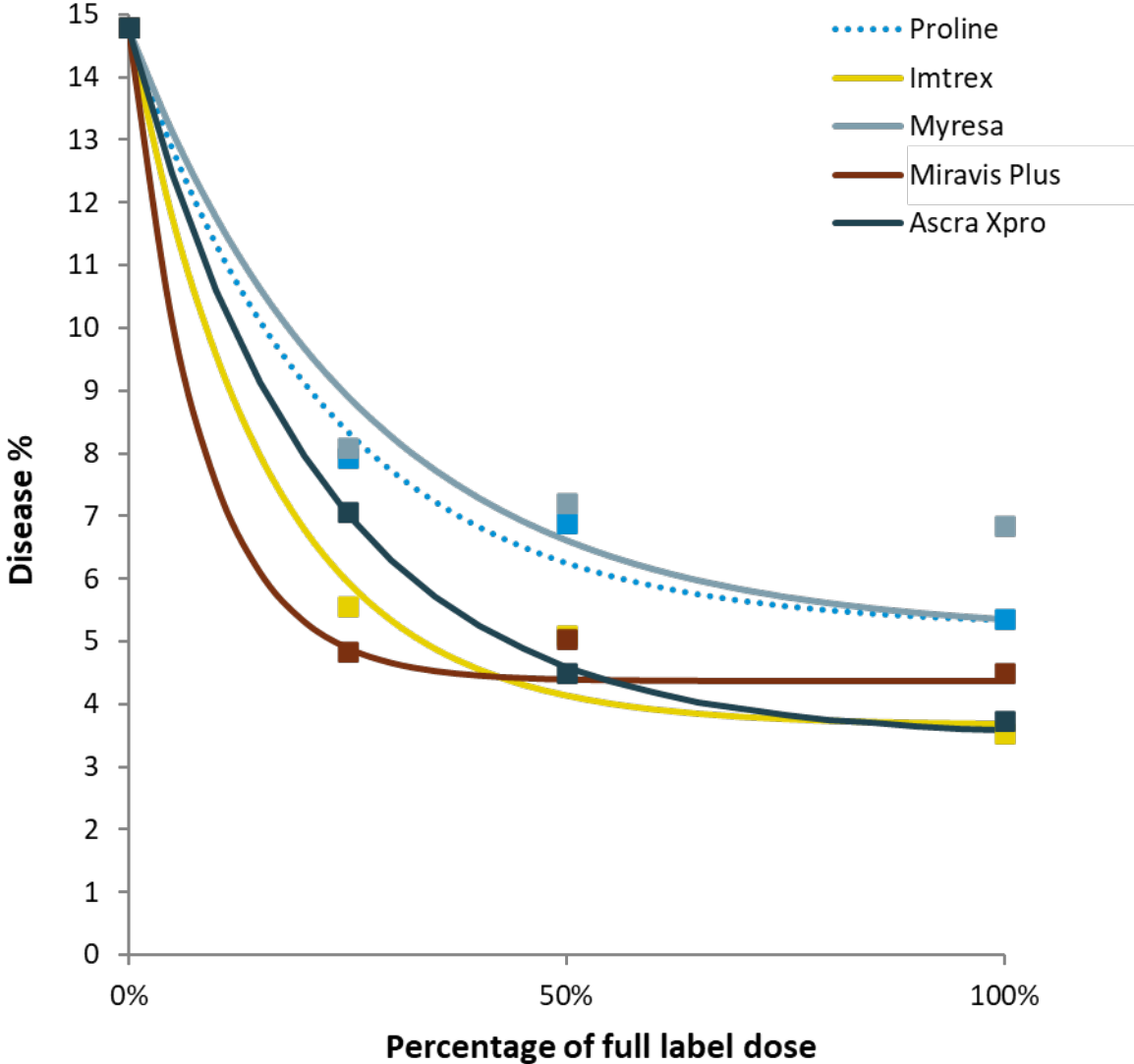
# Rhynchosporium eradicator 2023 (2 trials)



# Rhynchosporium protectant overyear 2021-23 (5 trials)

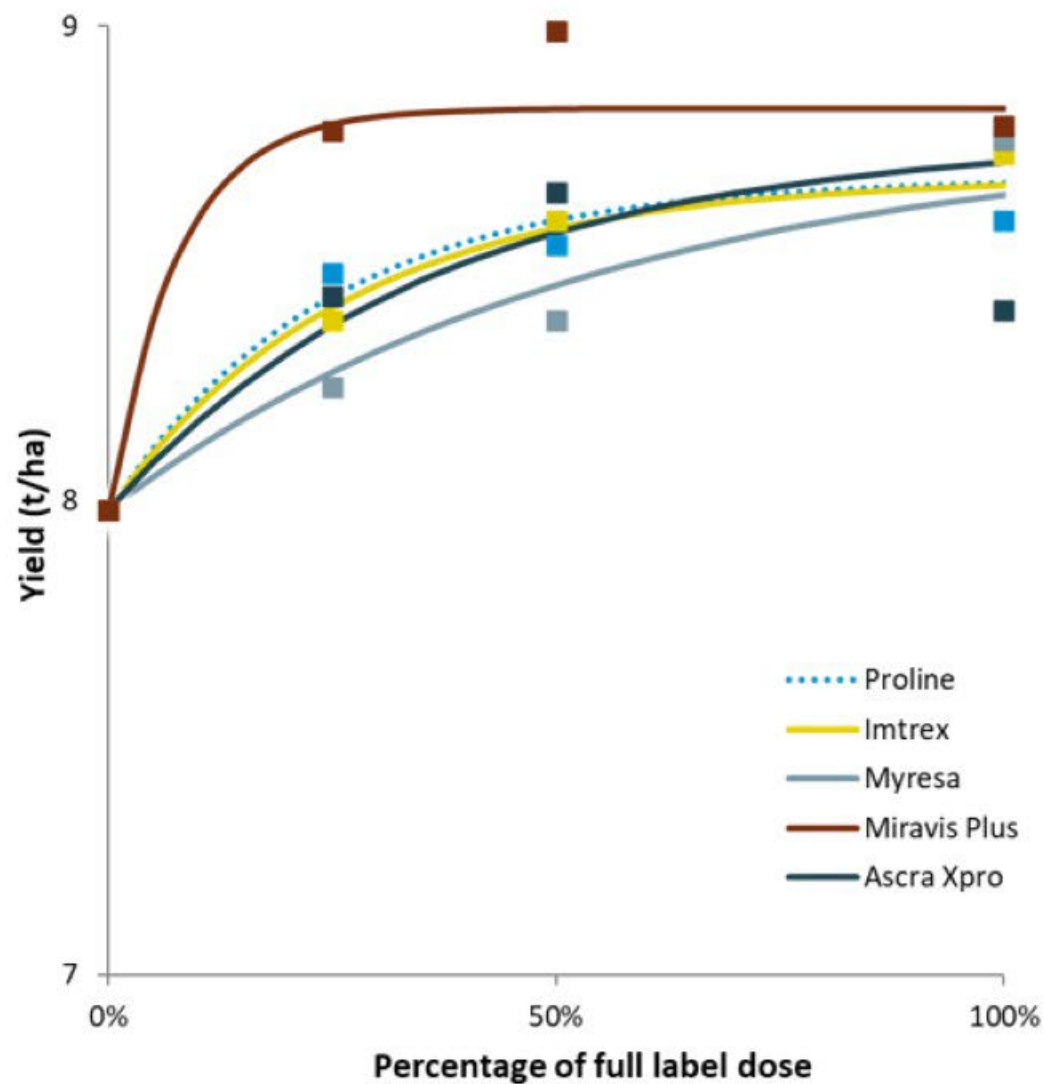


# Rhynchosporium eradicant overyear 2021-23 (6 trials)

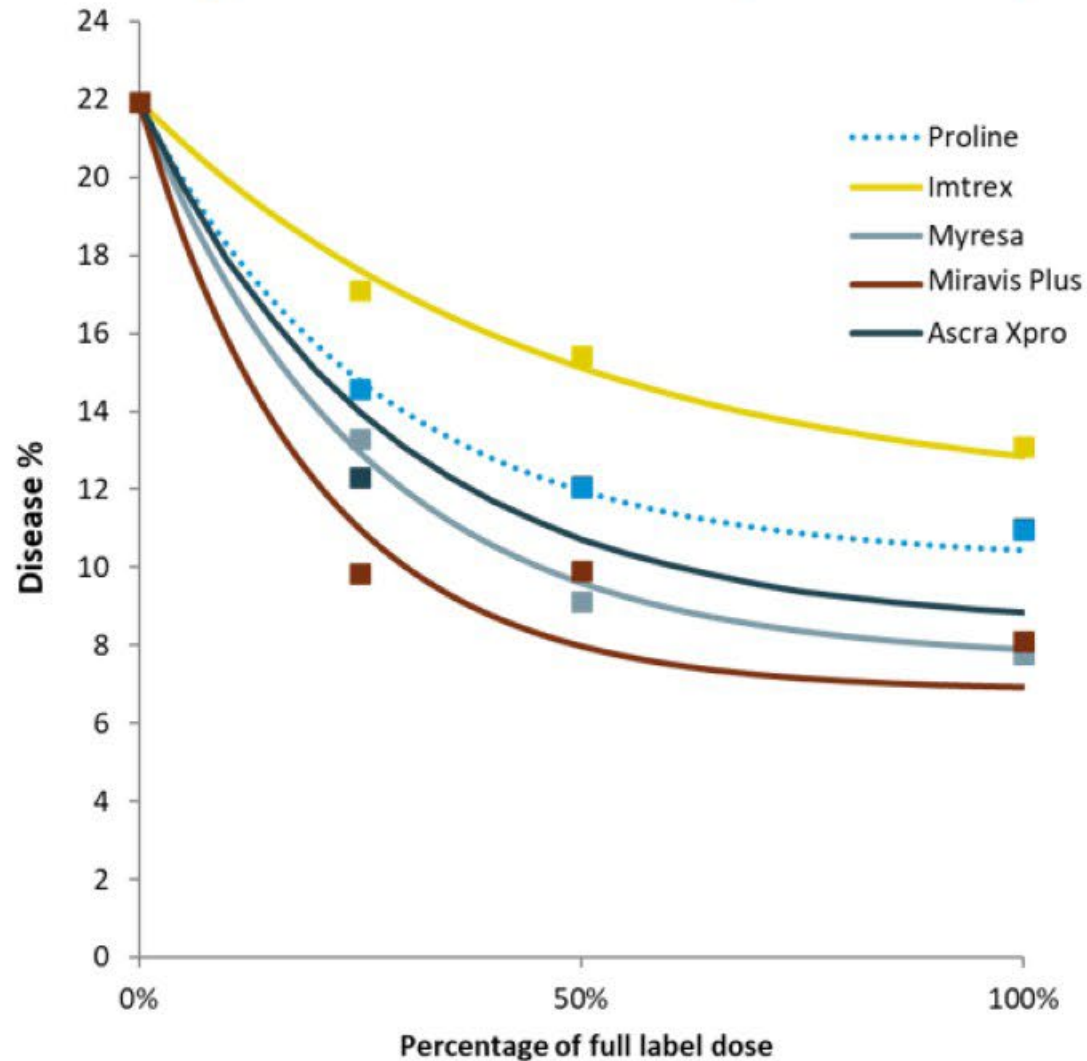




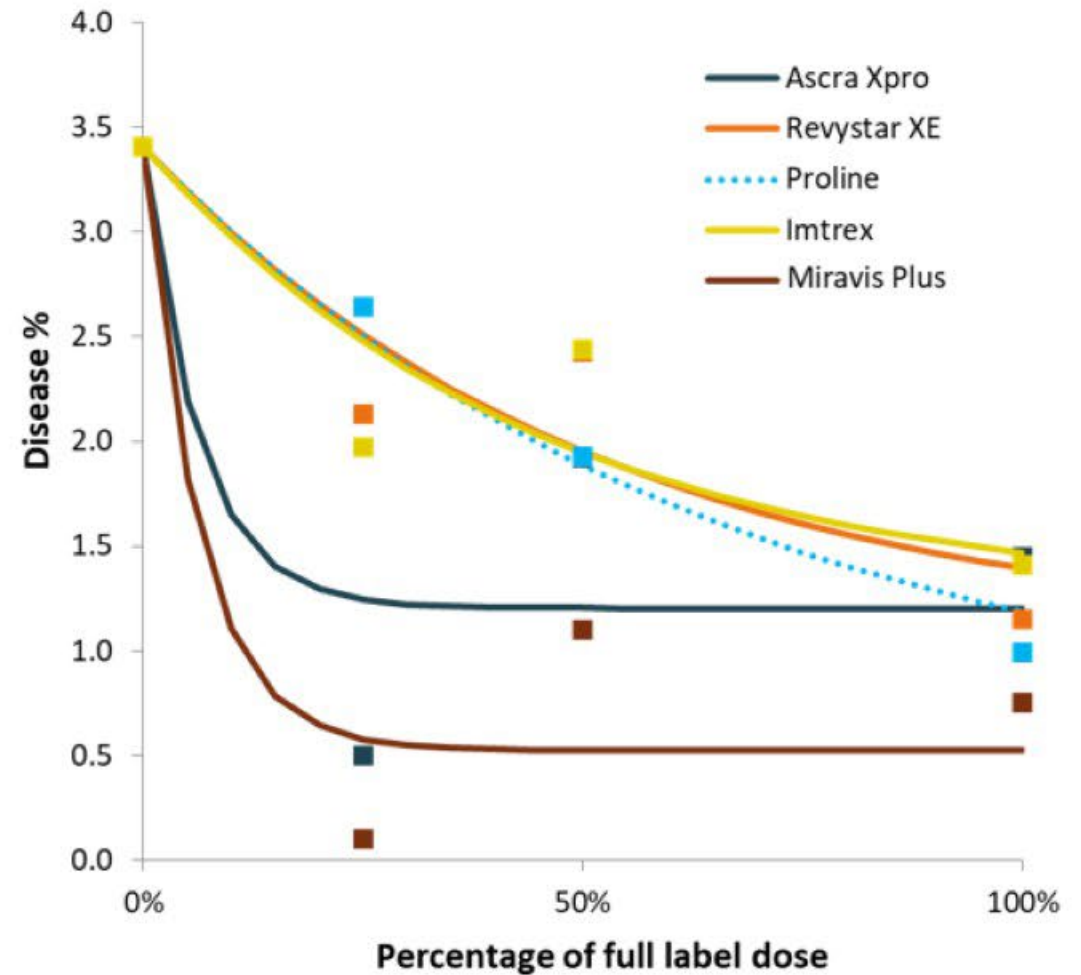
# Rhynchosporium yield overyear 2021-22 (5 trials)



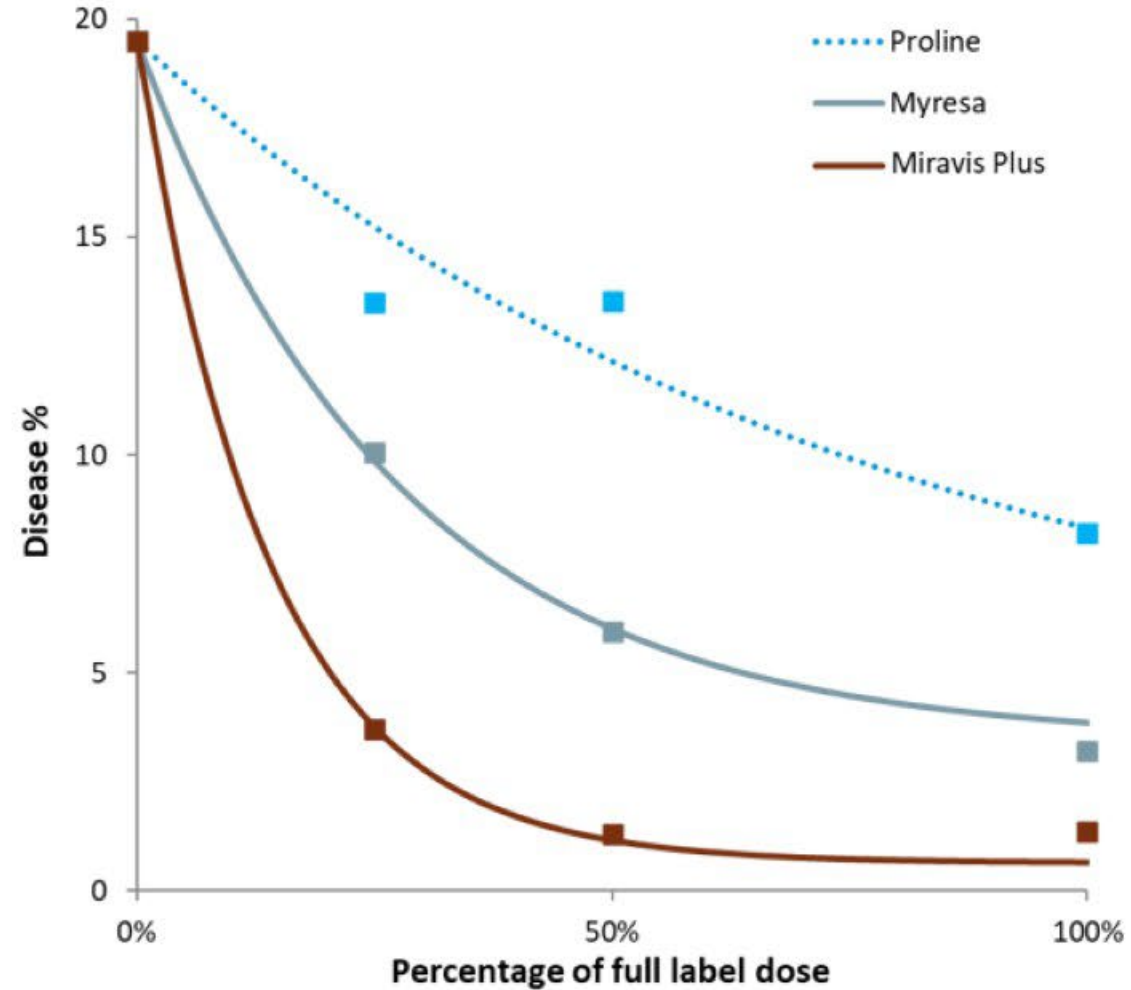
# Net blotch protectant overyear 2022-23 (2 trials)



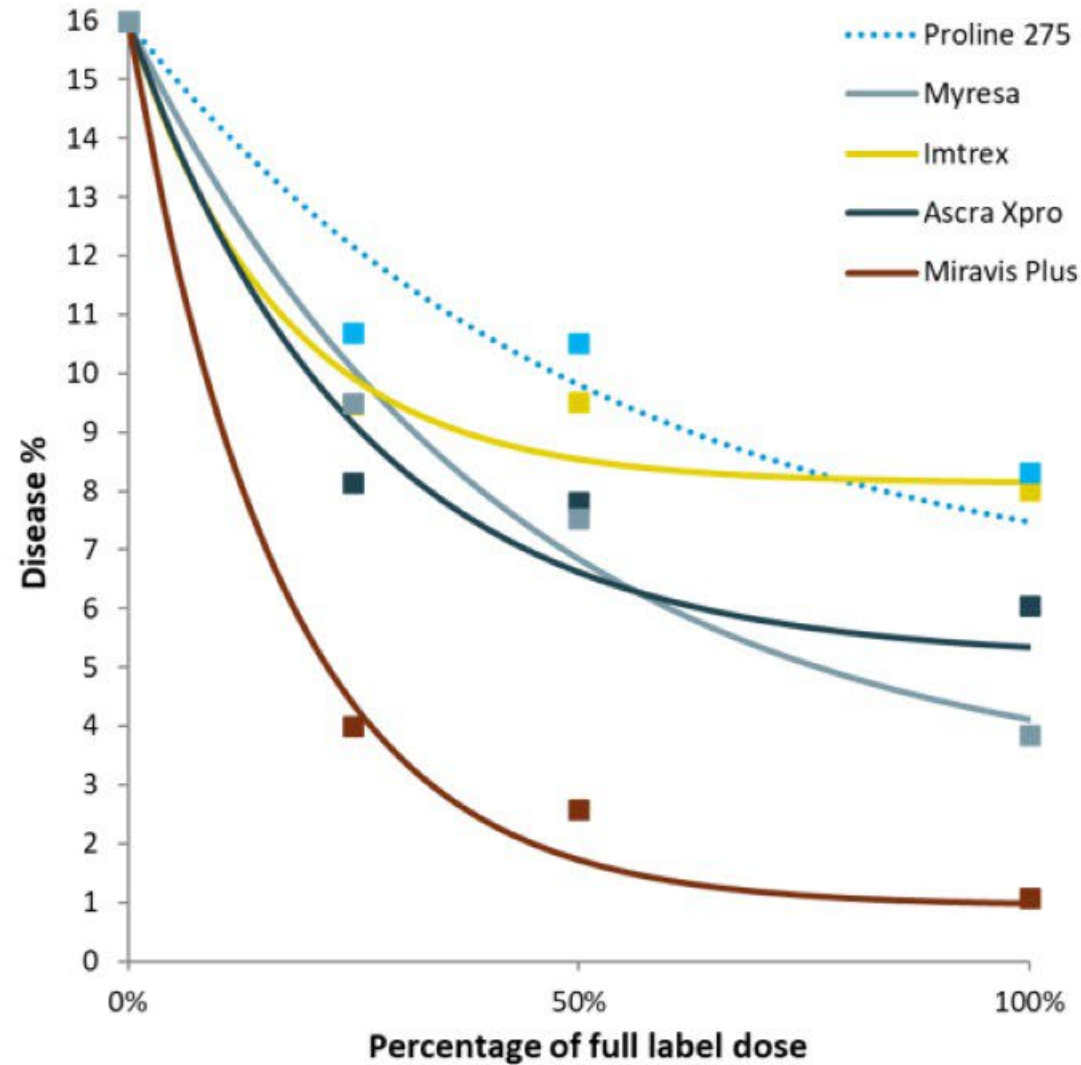
# Net blotch eradicator overyear 2020-22 (3 trials)



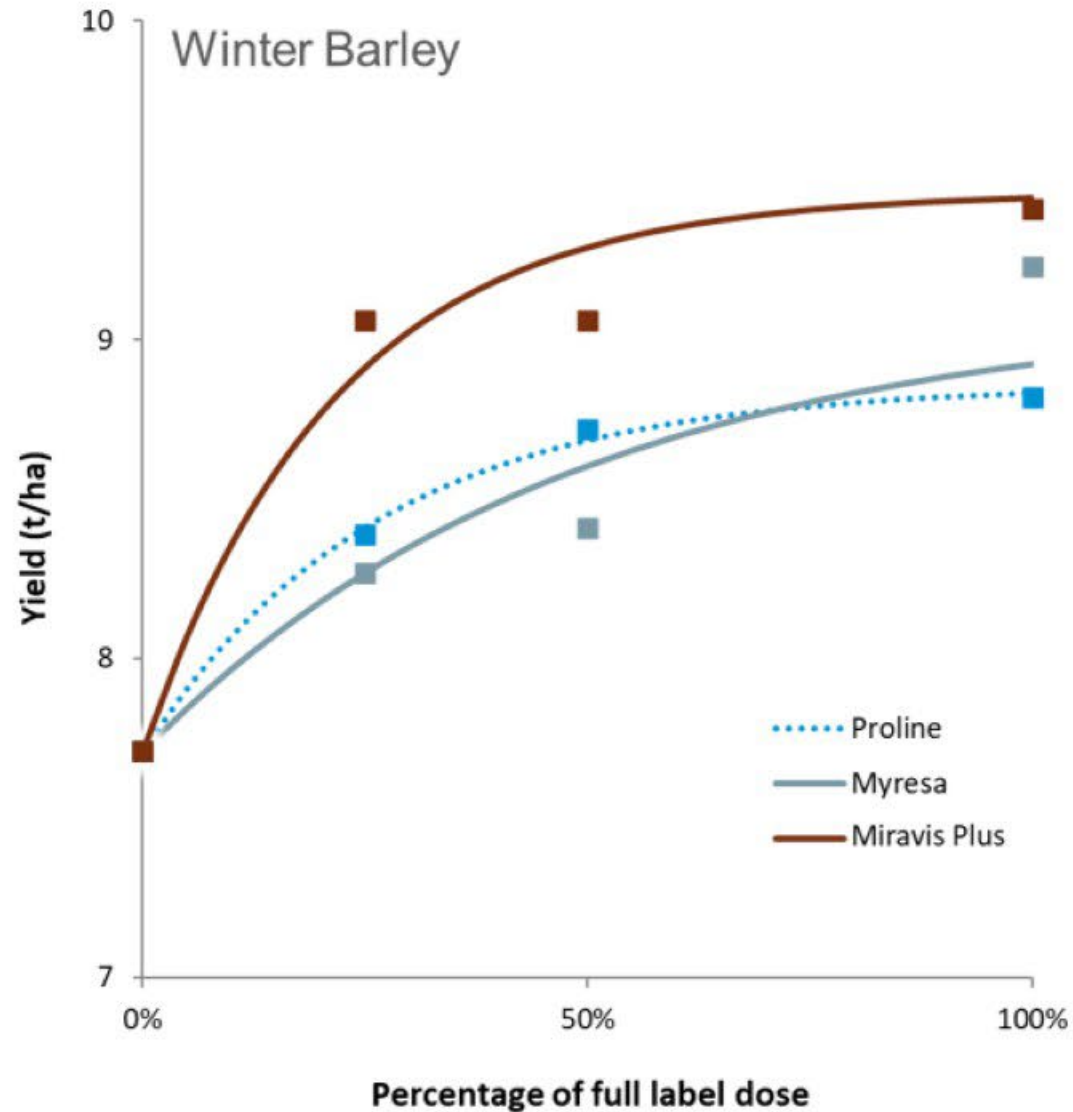
# Ramularia protectant 2023 (2 trials)



# Ramularia protectant overyear 2021-23 (10 trials)



# Ramularia yield overyear 2021-23 (3 trials)





# Barley summary

- SDHI products Ascra Xpro and Imtrex (fluxapyroxad) still very effective against rhynchosporium. Miravis Plus (pydiflumetofen) is also very effective. Azoles prothioconazole (Proline) and mefentrifluconazole (Myresa) are also active
- On net blotch, azoles (prothioconazole and mefentrifluconazole) and mixtures containing them (Ascra Xpro and Revystar XE) gave good control. Stronger control was achieved with Miravis Plus (pydiflumetofen)
- Miravis Plus (pydiflumetofen) is very effective for protectant control of ramularia, and more effective than other options. Mefentrifluconazole gives good protectant control, with some useful activity from prothioconazole and SDHIs (fluxapyroxad, and in Ascra Xpro)
- Prothioconazole continues to be effective against mildew
- Mixture products give the broadest spectrum and most robust control



A vibrant landscape of a green field at sunset. The sun is low on the horizon, casting a warm glow over the scene. The sky is filled with colorful clouds, and the field is lush and green. A path leads from the foreground towards the horizon. In the foreground, there are several thin, white, wavy lines that appear to be part of a decorative graphic.

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