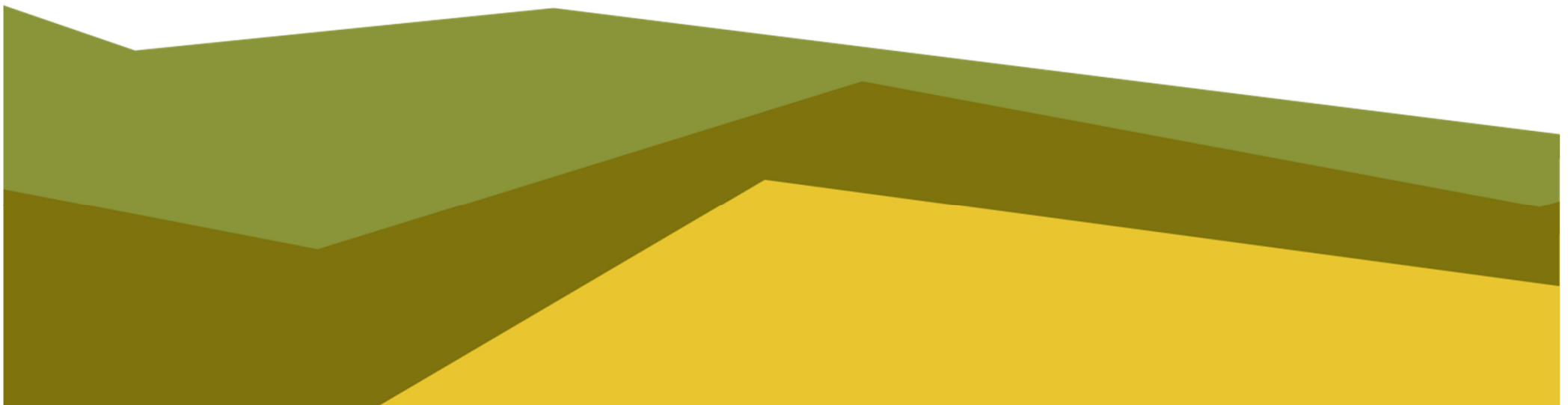
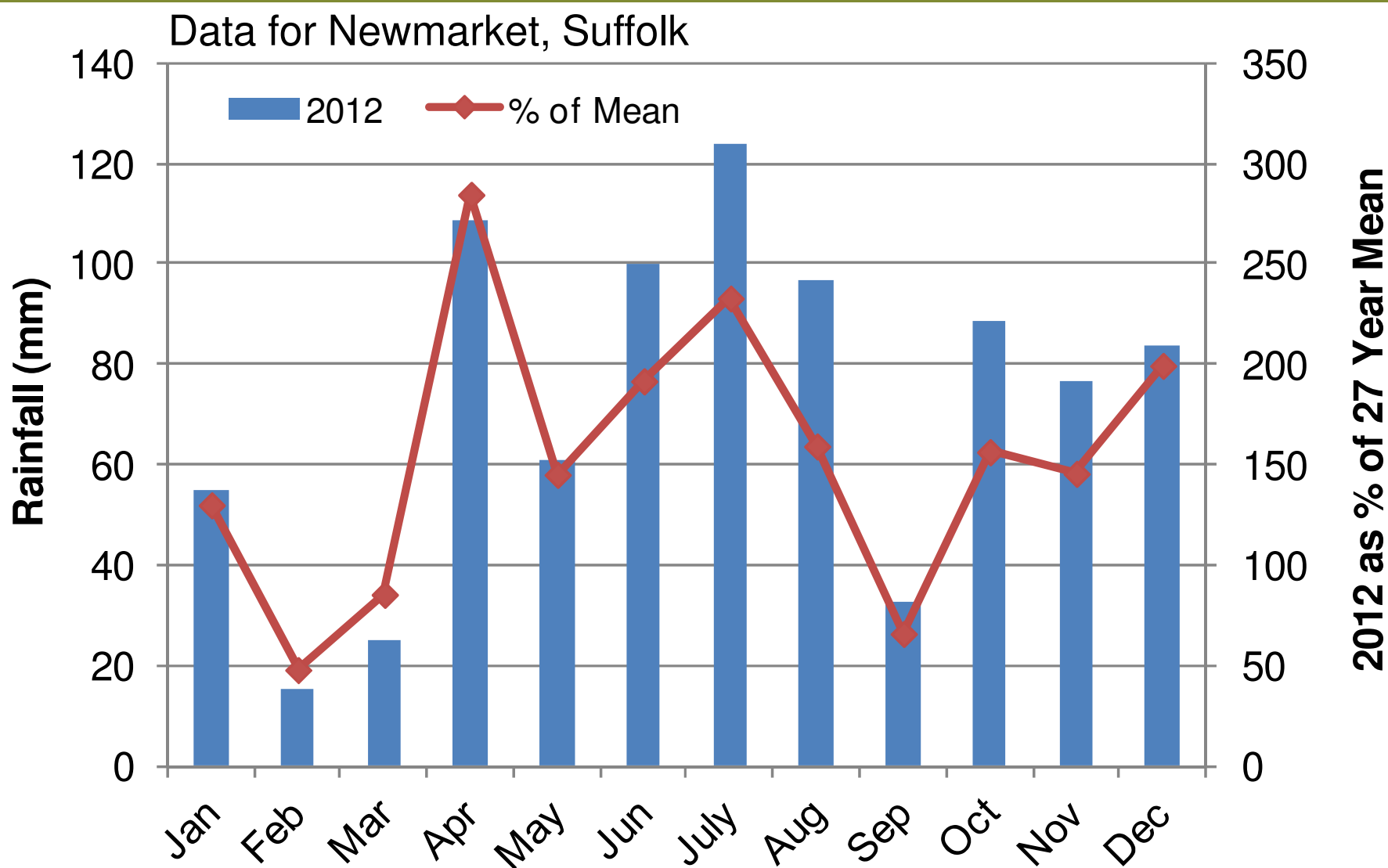


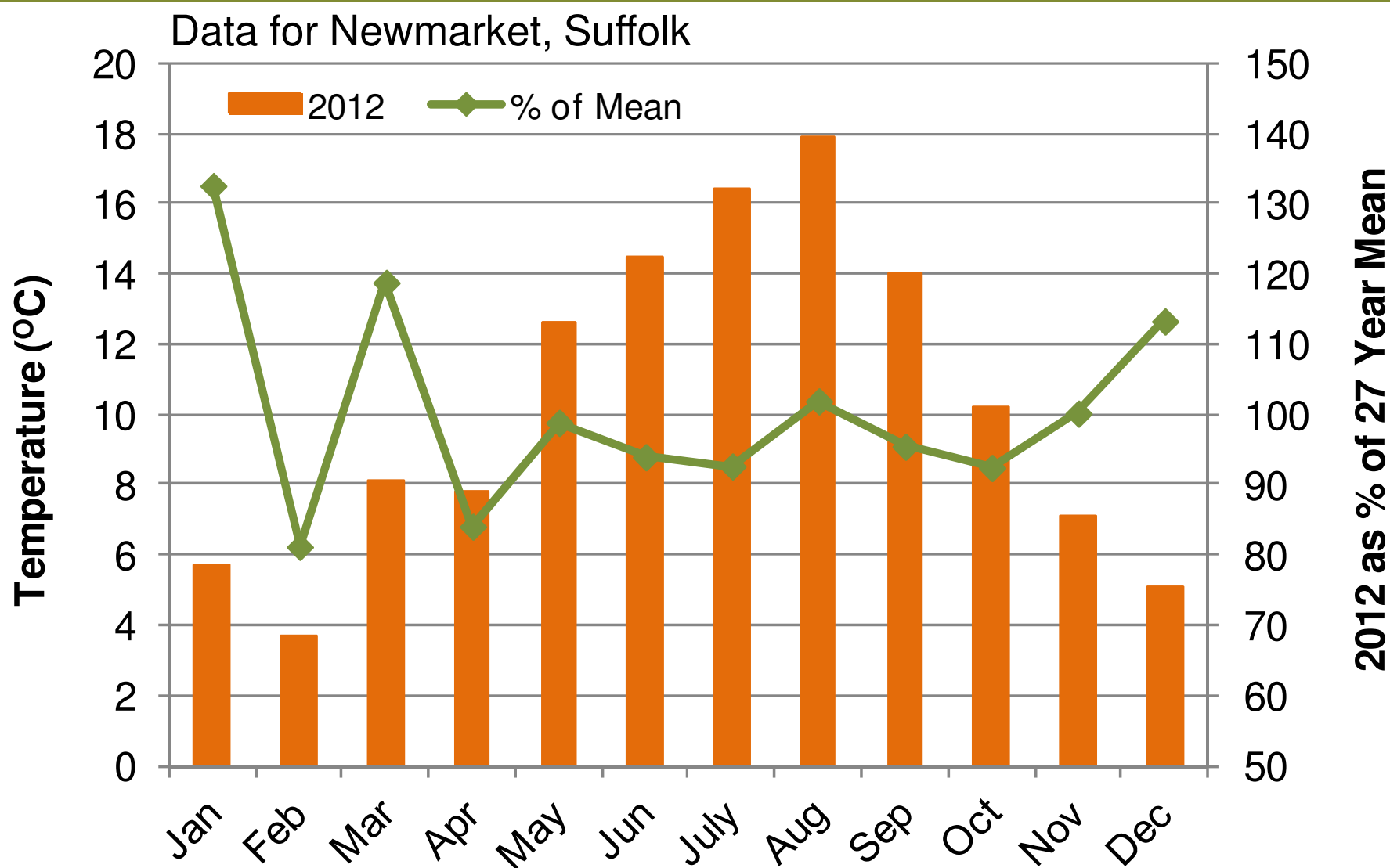
Fungicide performance in wheat 2012 - 13



Weather: 2012 monthly rainfall totals (mm)



Weather: 2012 average temperatures (°C)

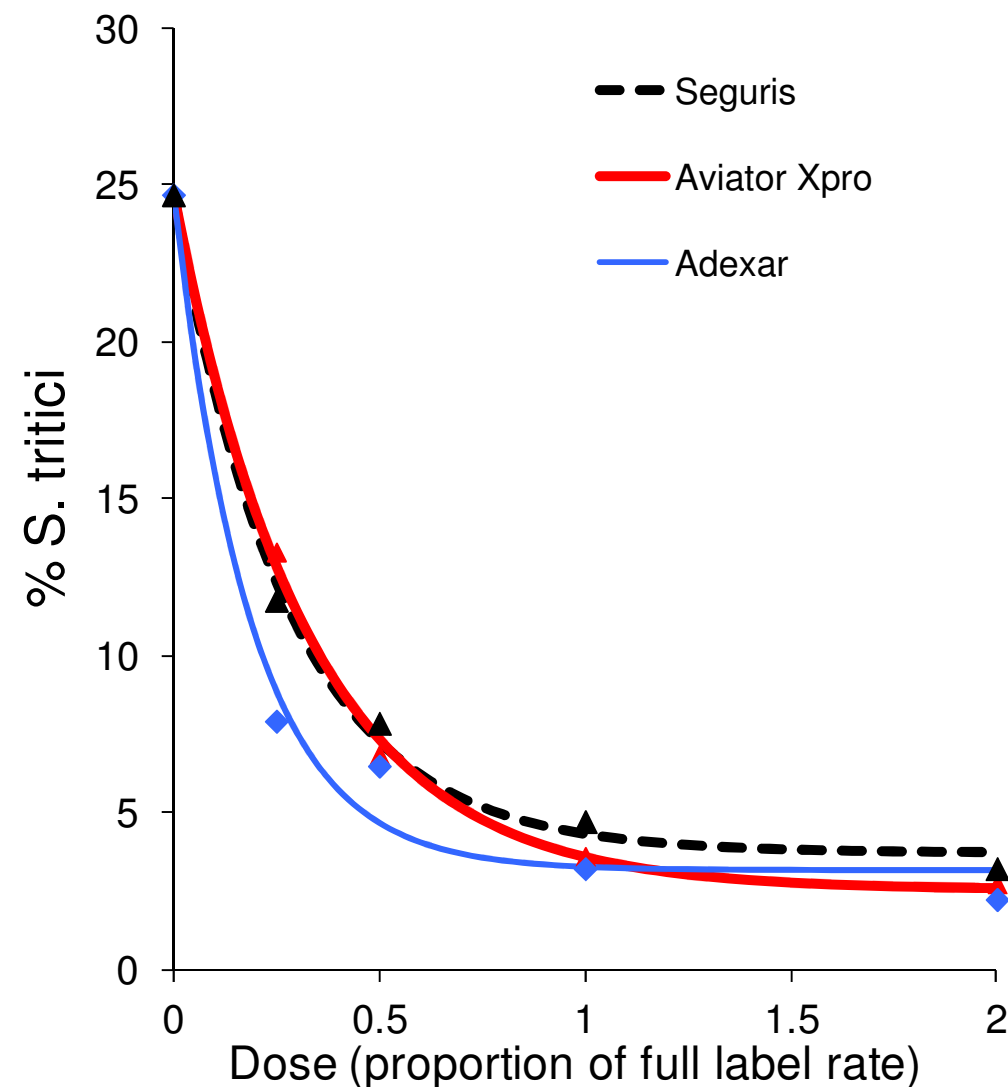
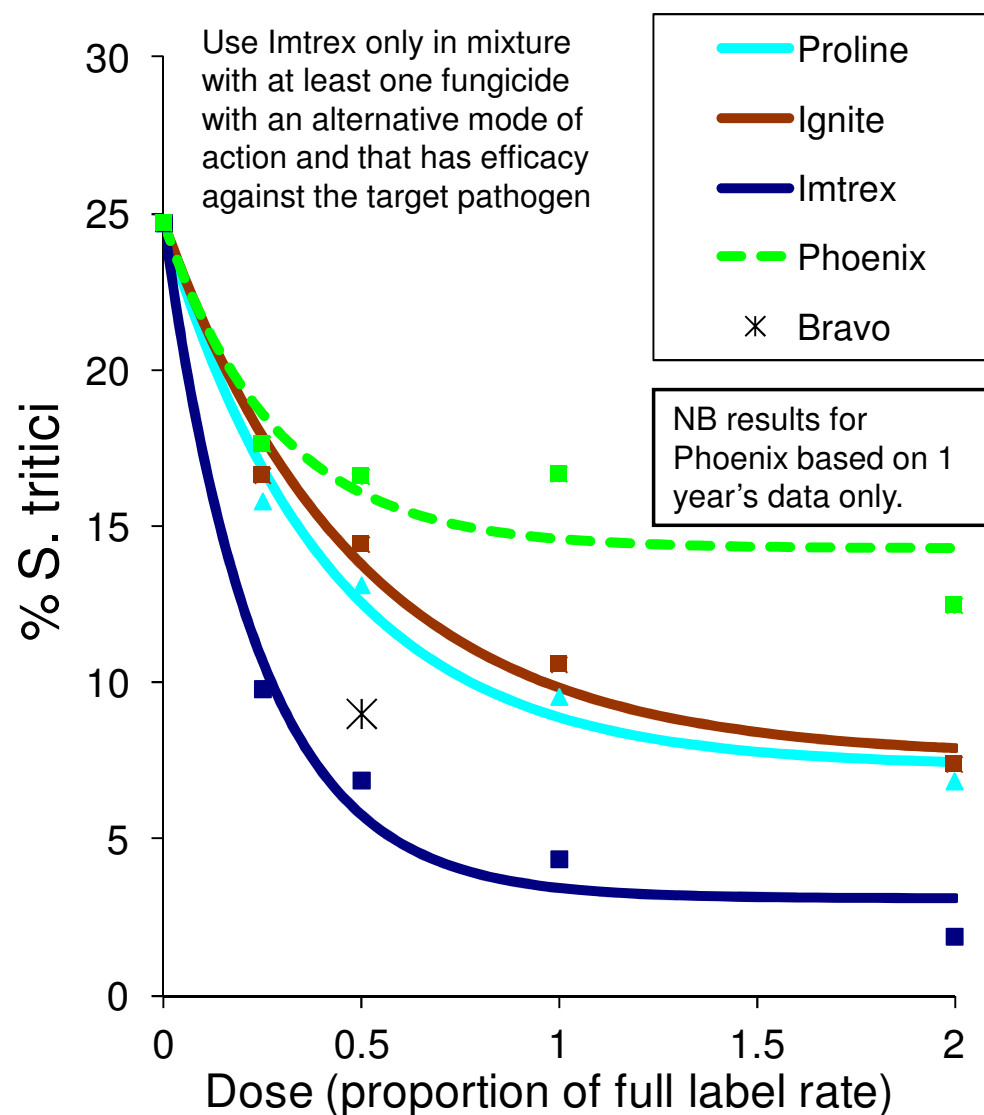


Septoria tritici trials: 2012 products & sites

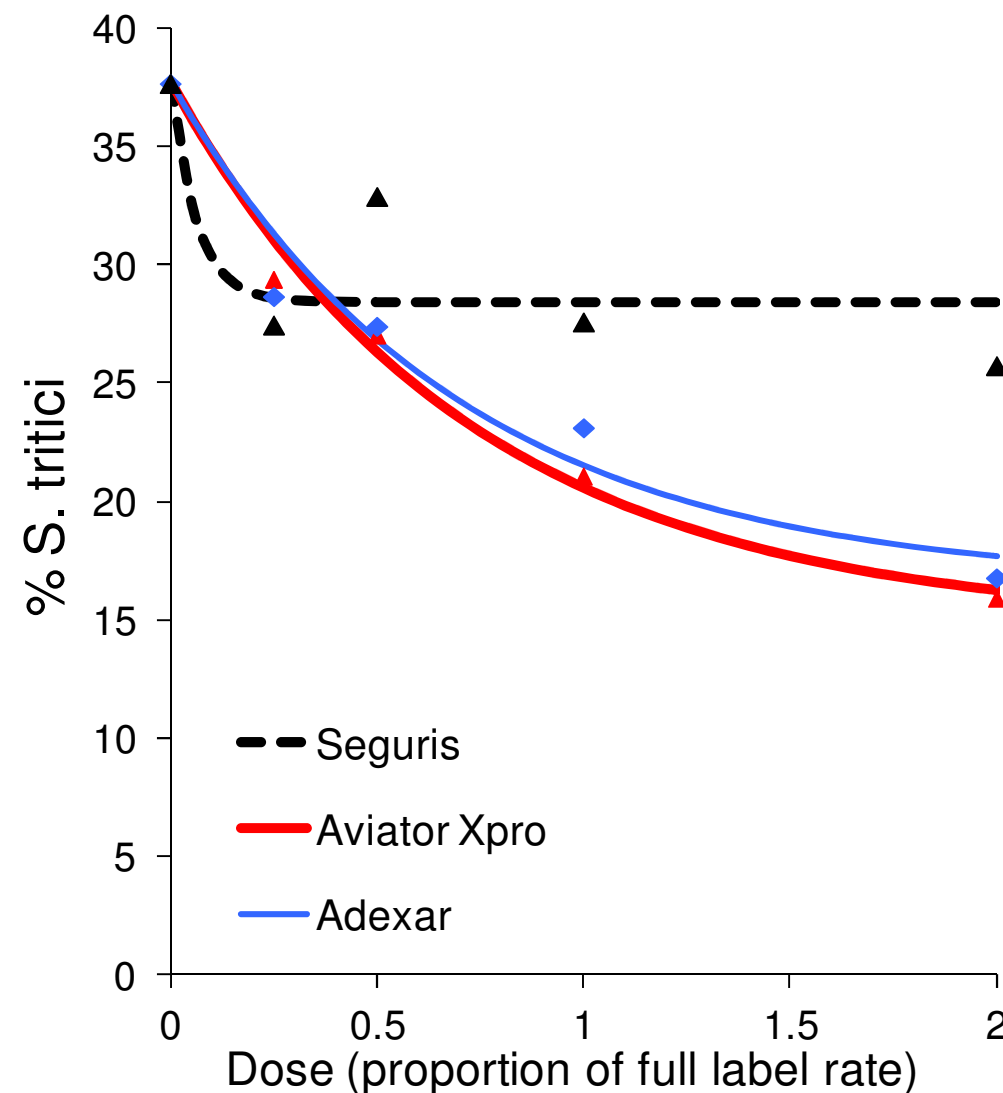
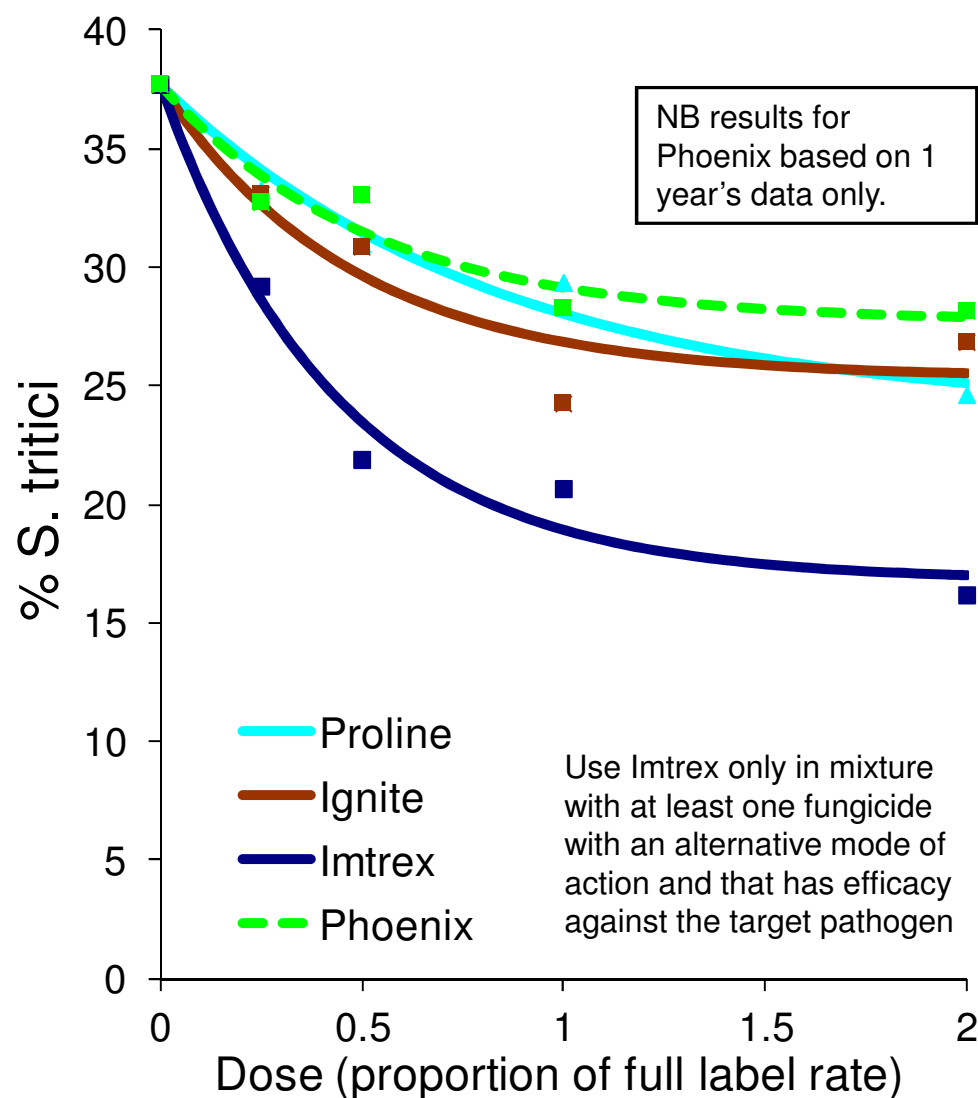


Product	Actives	Rosemaund	SRUC	NIAB TAG	Teagasc
Bravo	chlorothalonil	0.5 only	0.5 only	0.5 only	0.5 only
Phoenix	folpet		✓	✓	✓
Ignite	epoxiconazole (epx)	✓	✓	✓	✓
Proline	prothioconazole (ptz)	✓	✓	✓	✓
Imtrex	fluxapyroxad	✓	✓	✓	✓
Aviator	bixafen + ptz	✓ 235	✓ 235	✓ 235	✓ 225
Adexar	fluxapyroxad + ep	✓	✓	✓	✓
Seguris	isopyrazam + ep (0.8)	✓	✓	✓	✓

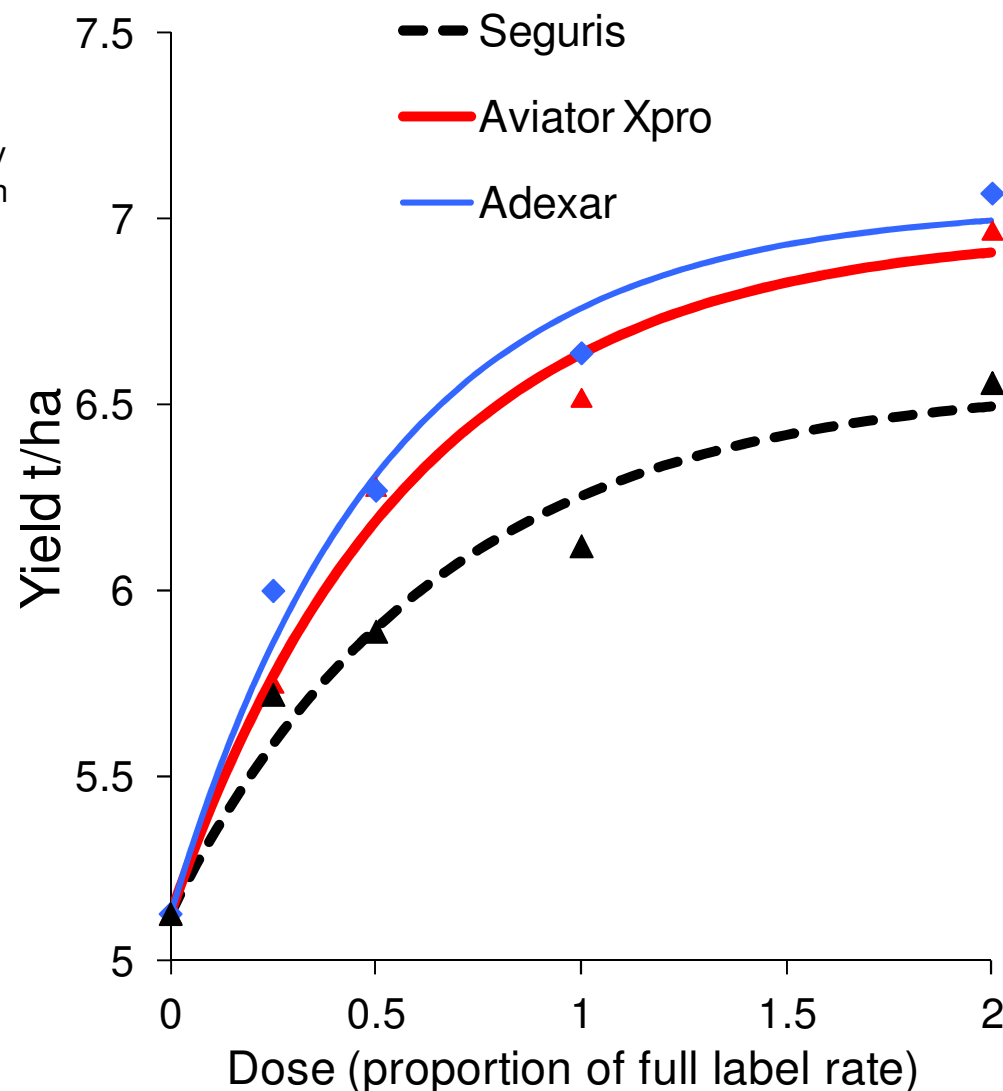
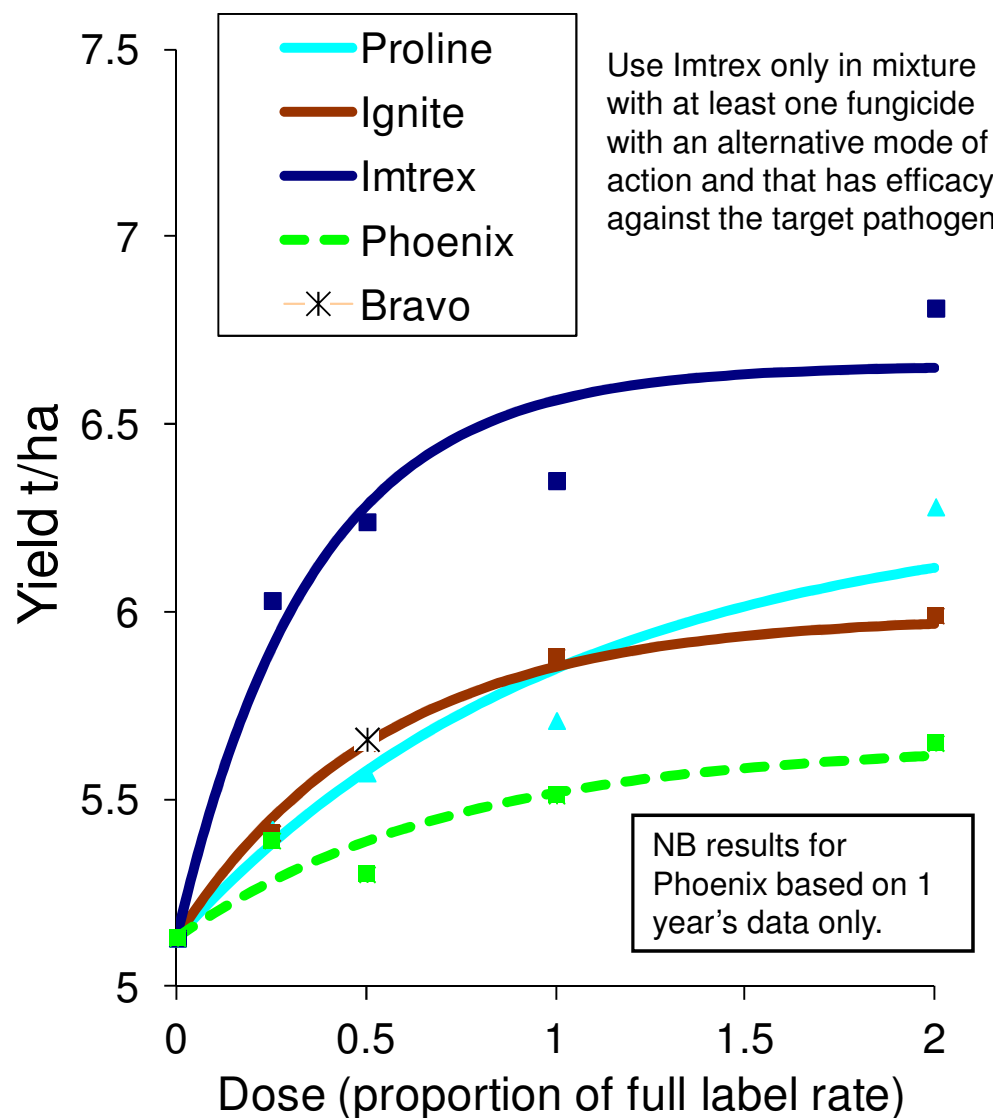
Septoria tritici protectant 2012 (N=6)



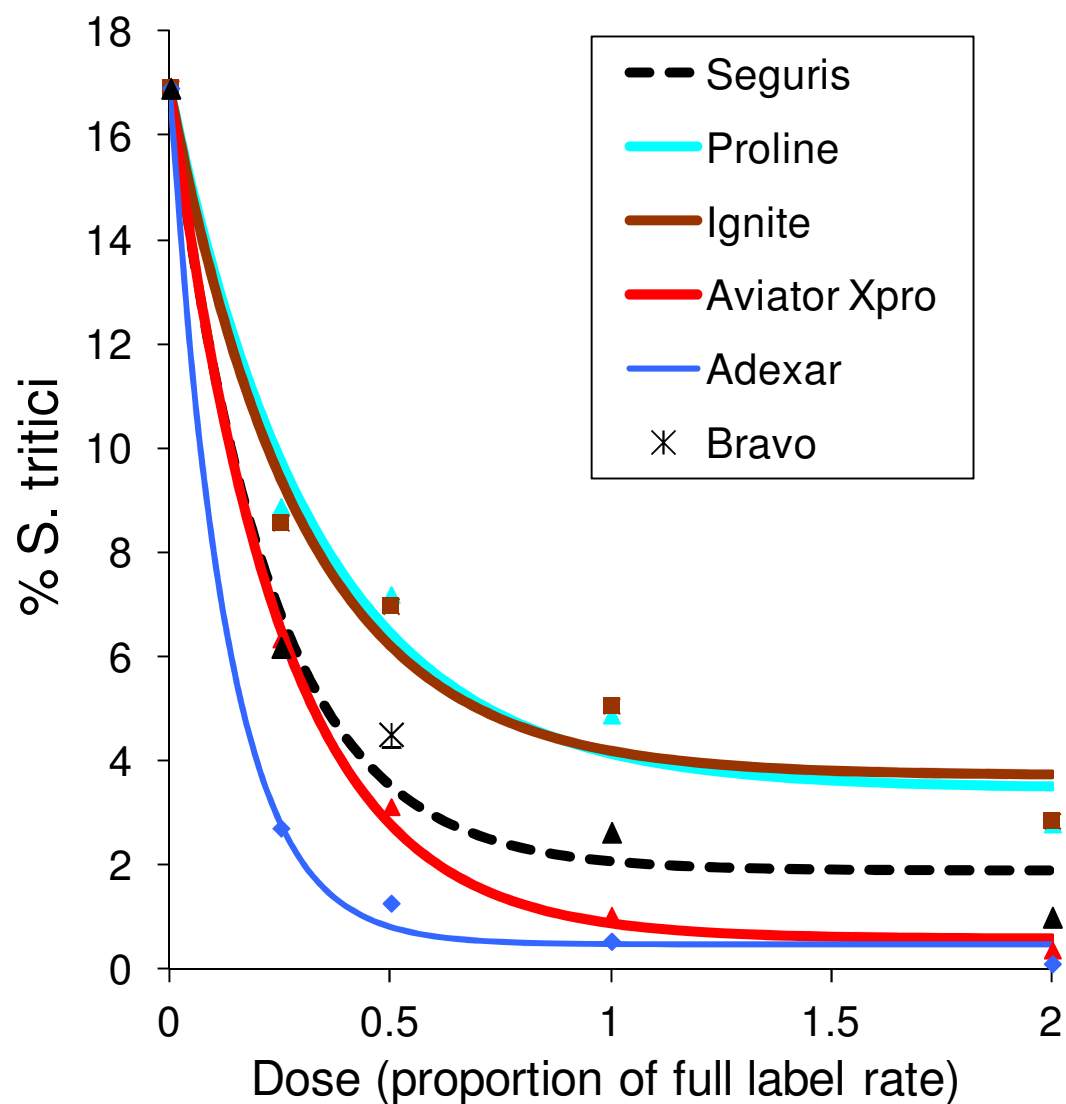
Septoria tritici eradicator 2012 (N=4)



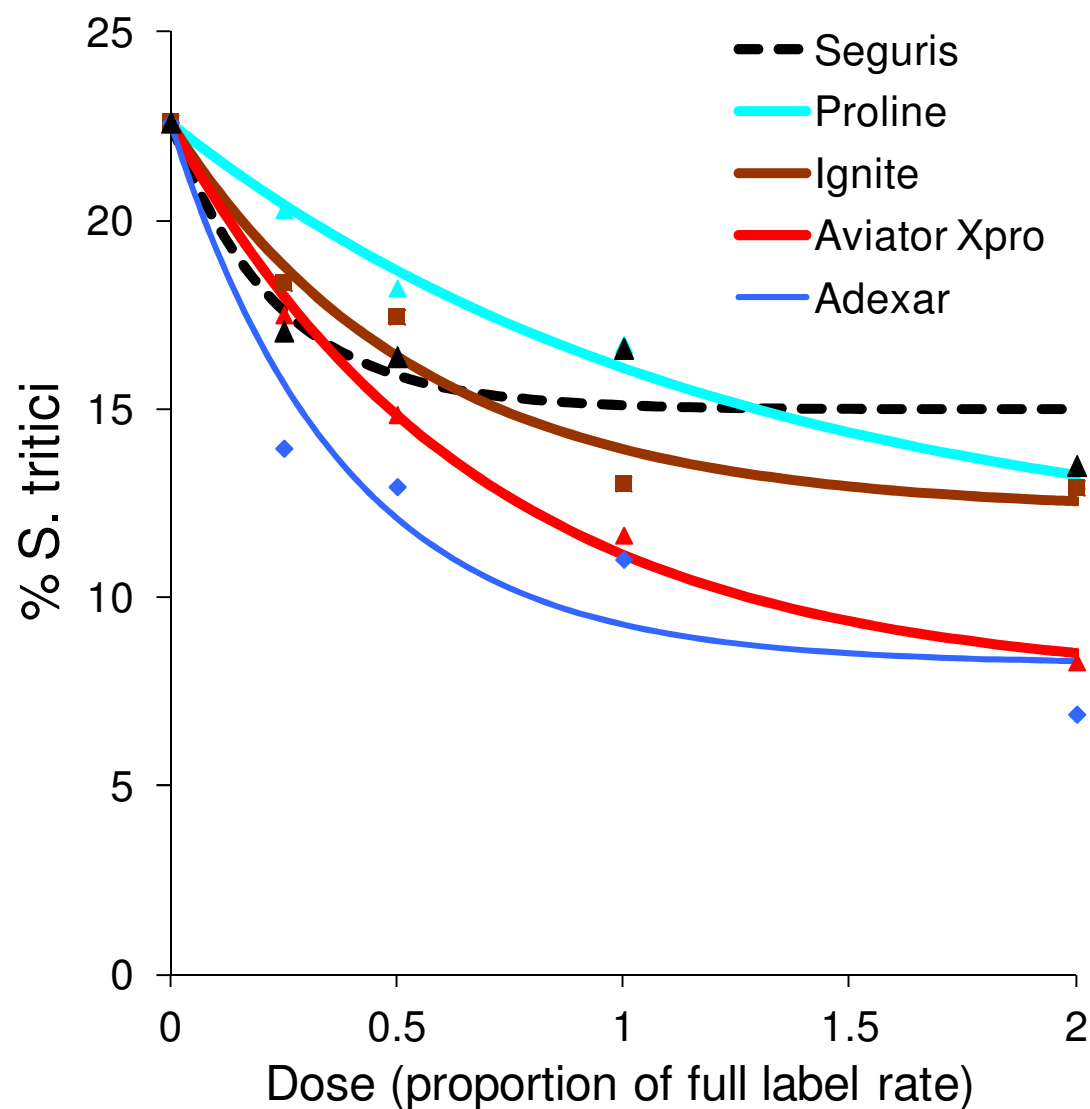
Septoria tritici trial yields 2012 (N=6)



Septoria tritici protectant 2010-12 (N=16)



Septoria tritici eradicator 2010-12 (N=10)



Rusts

Yellow rust

- Significant early yellow rust epidemics in 2012, especially in Oakley
- Other susceptibles include: Solstice, Gallant, Torch, Viscount, KWS Santiago, KWS Kielder



Brown rust

- Despite early observations, unfavourable conditions and delayed epidemics in 2012
- Half of RL varieties rated 5 or less for brown rust

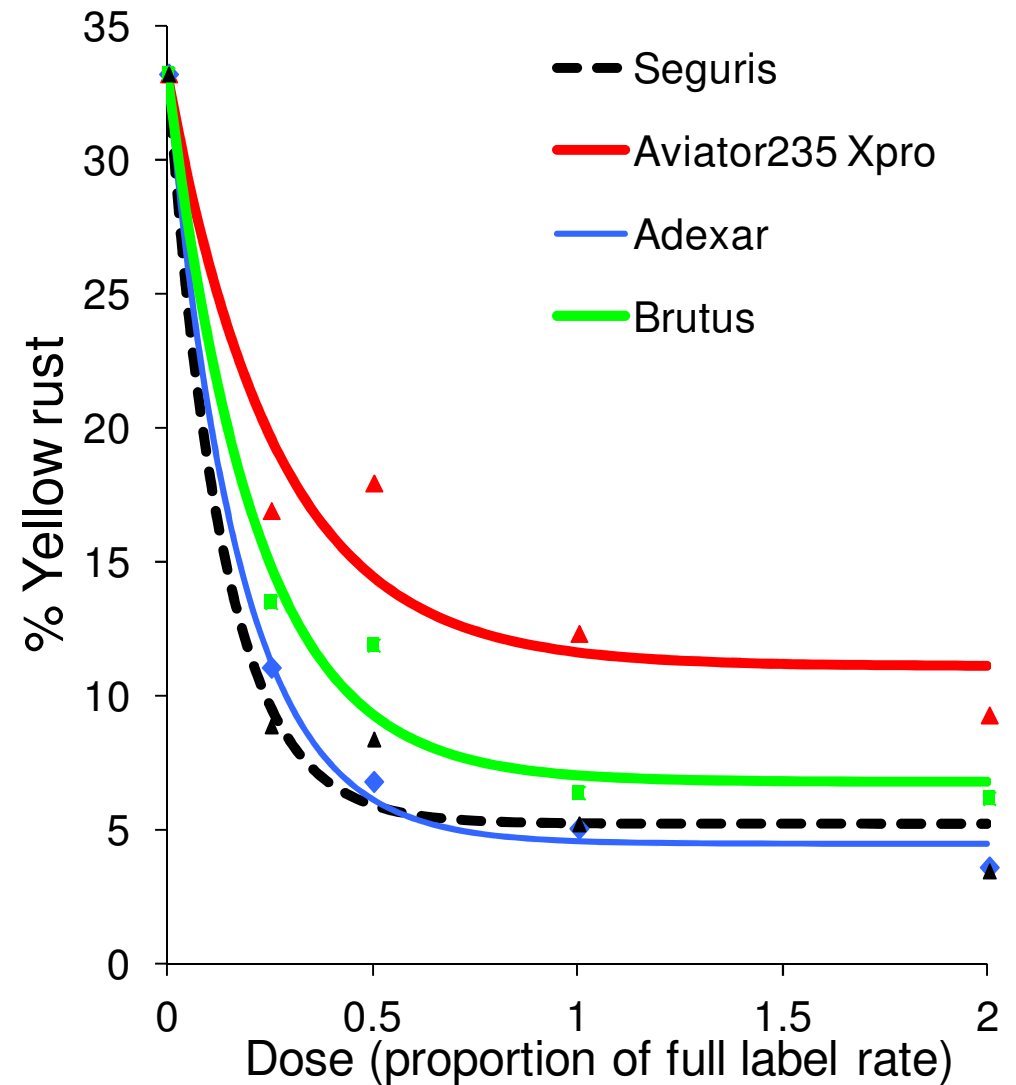
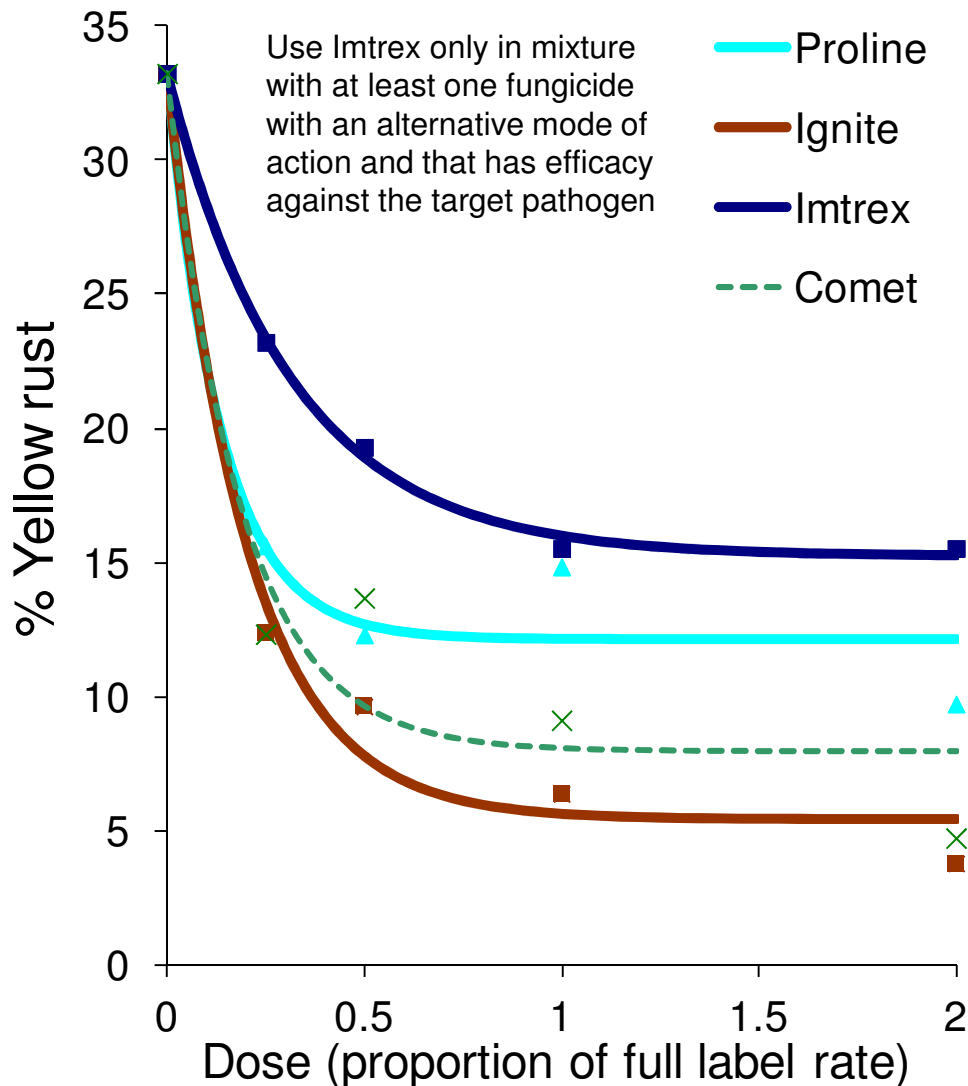


2013

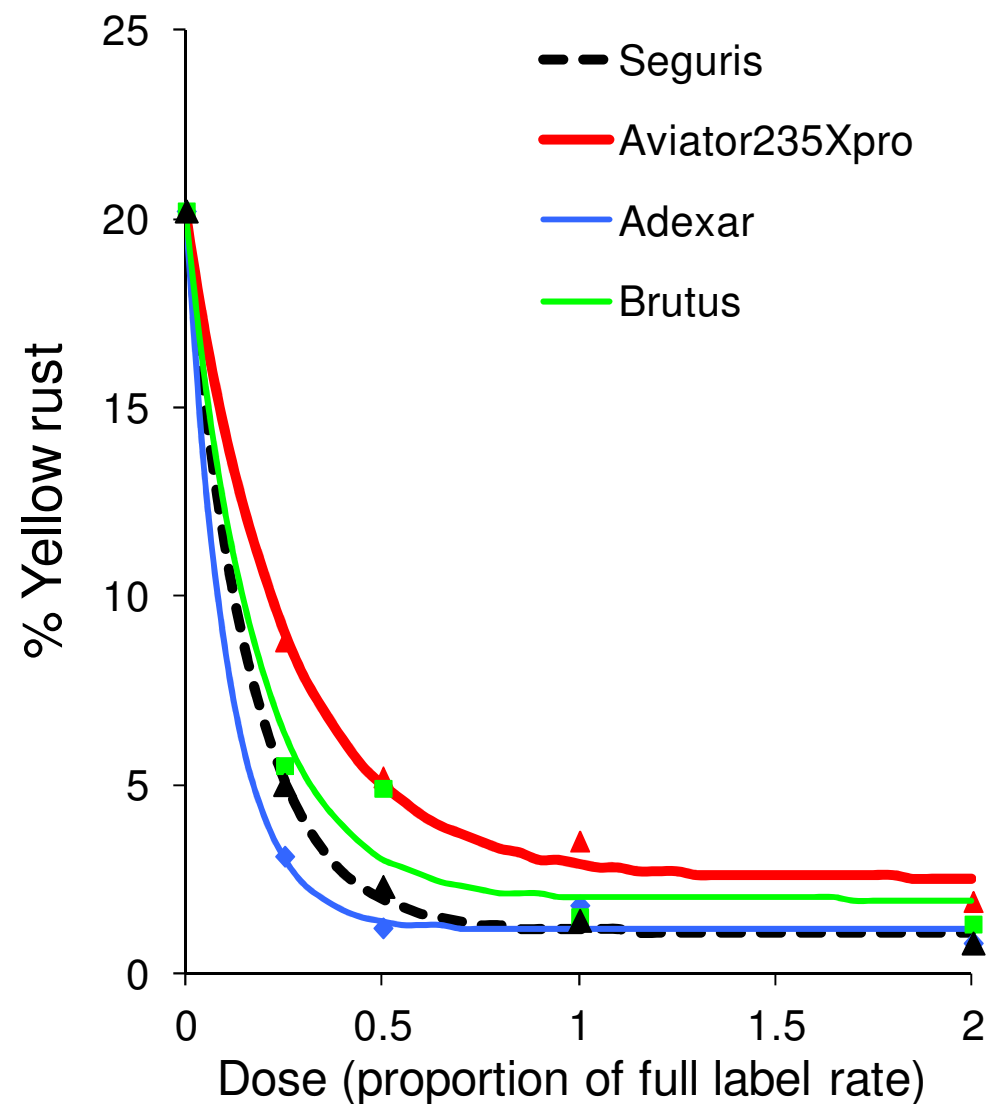
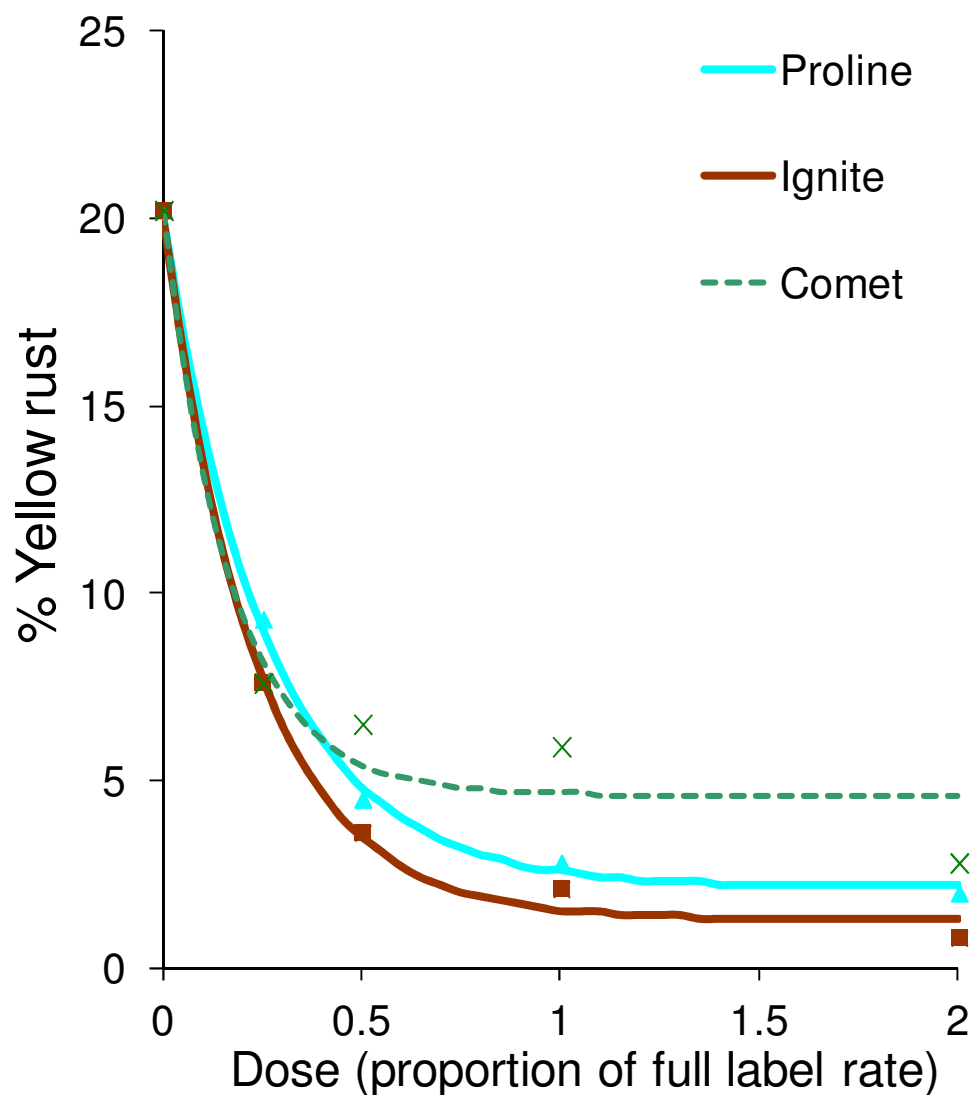
- Effects of late sowing, frosts (-5°C), snow...

Yellow rust 2012

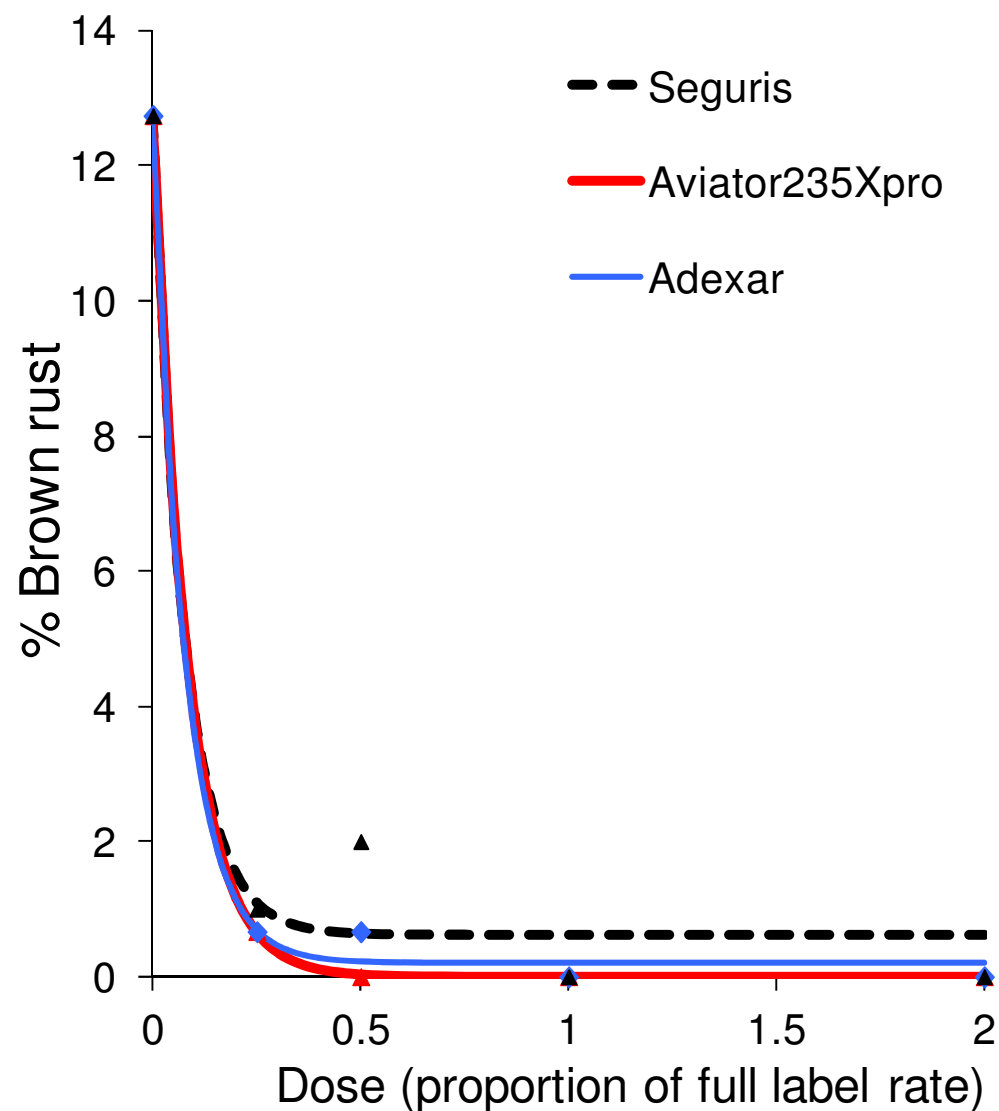
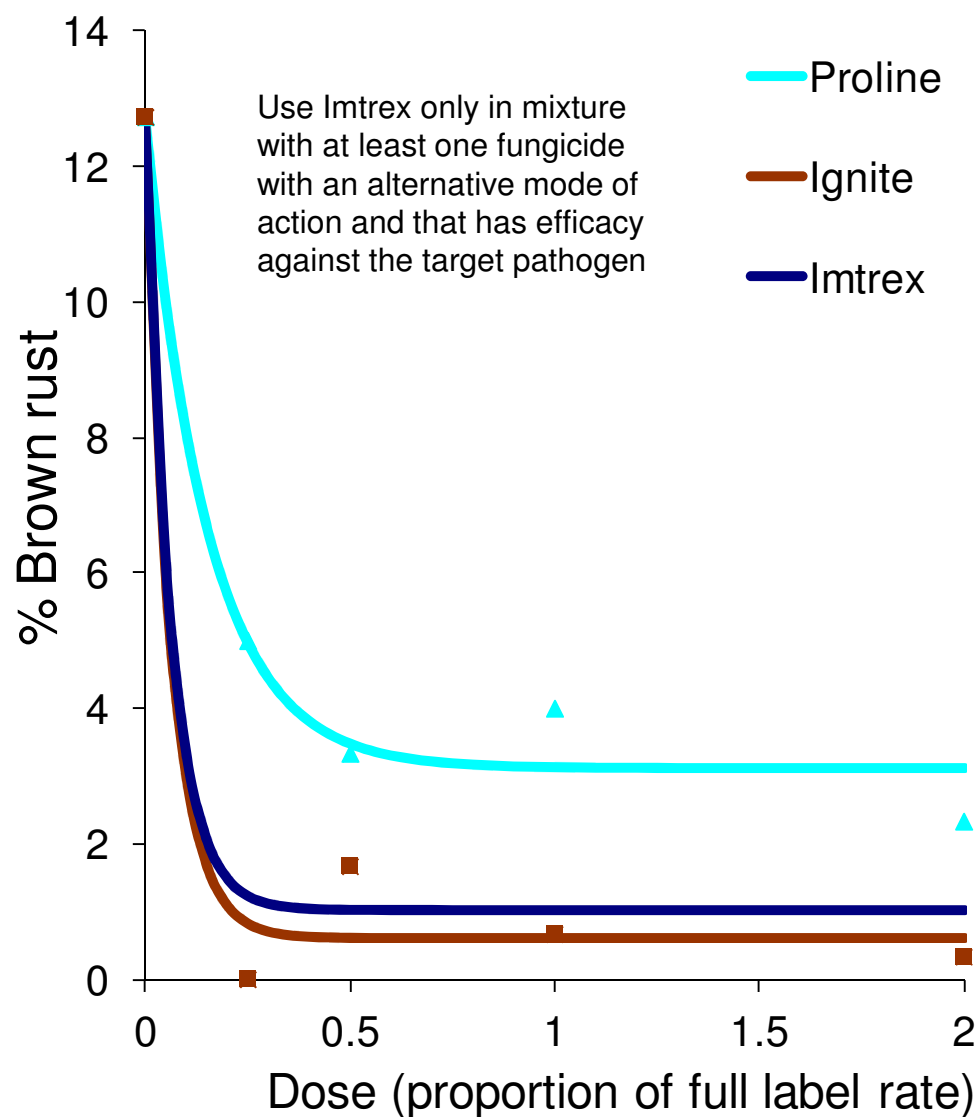
3% yellow rust on last leaf to emerge (leaf 3) at the time of application



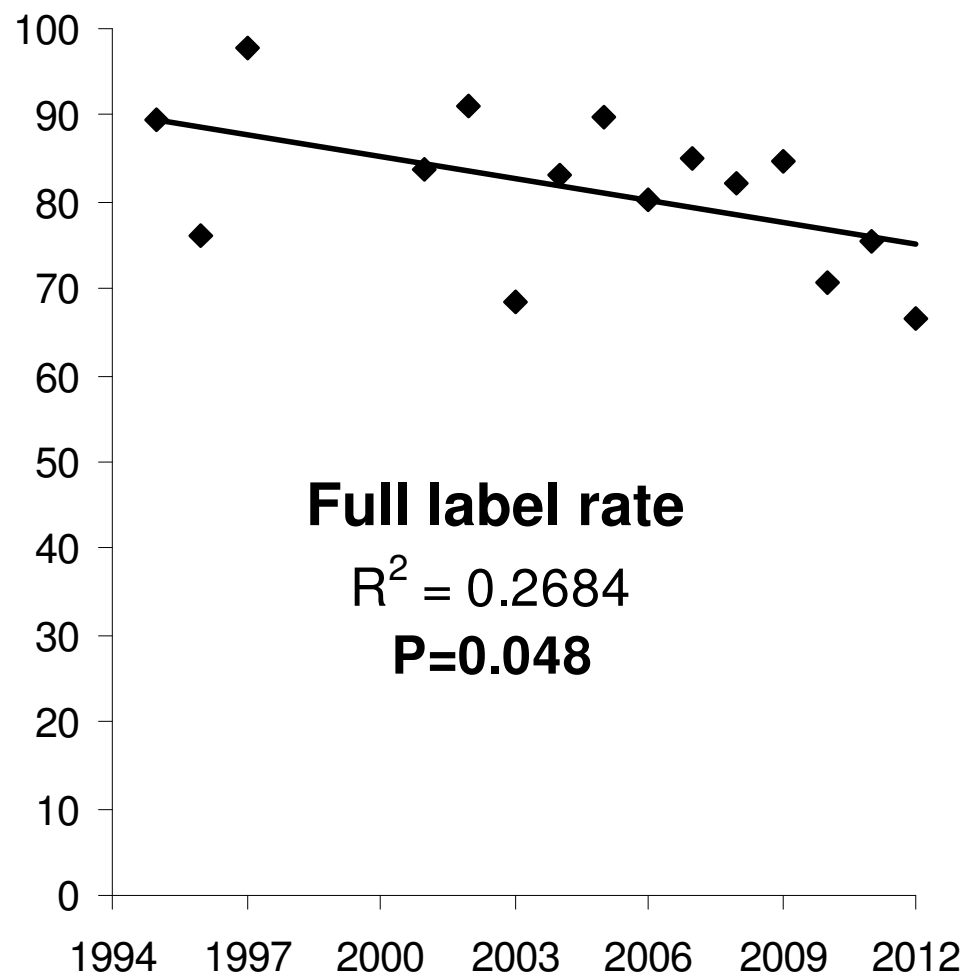
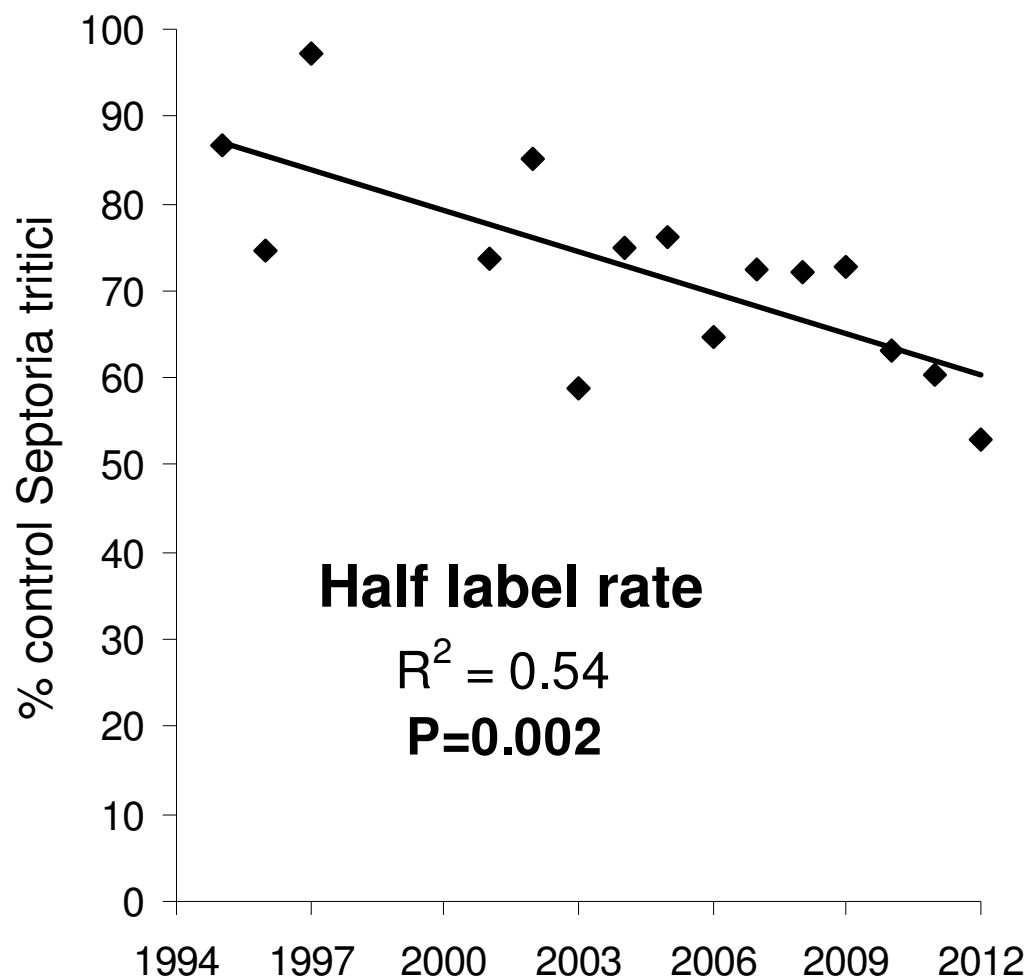
Yellow rust 2011-12 (N=2)



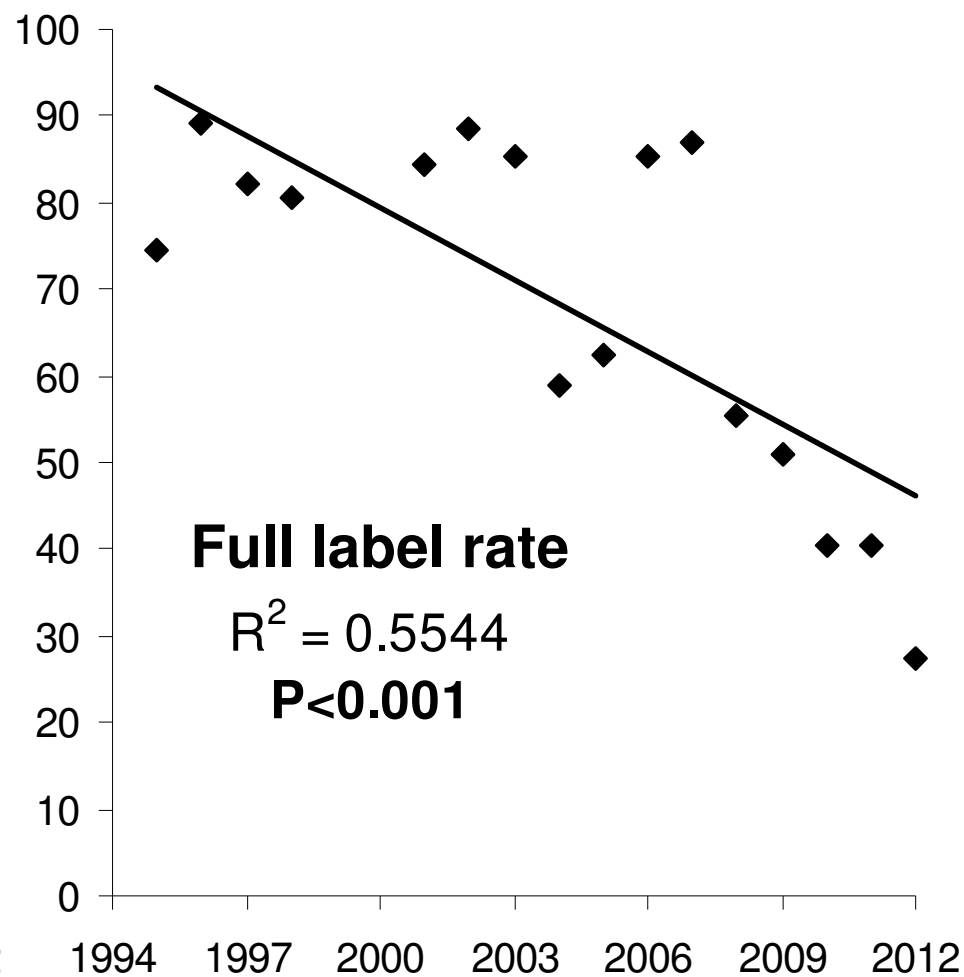
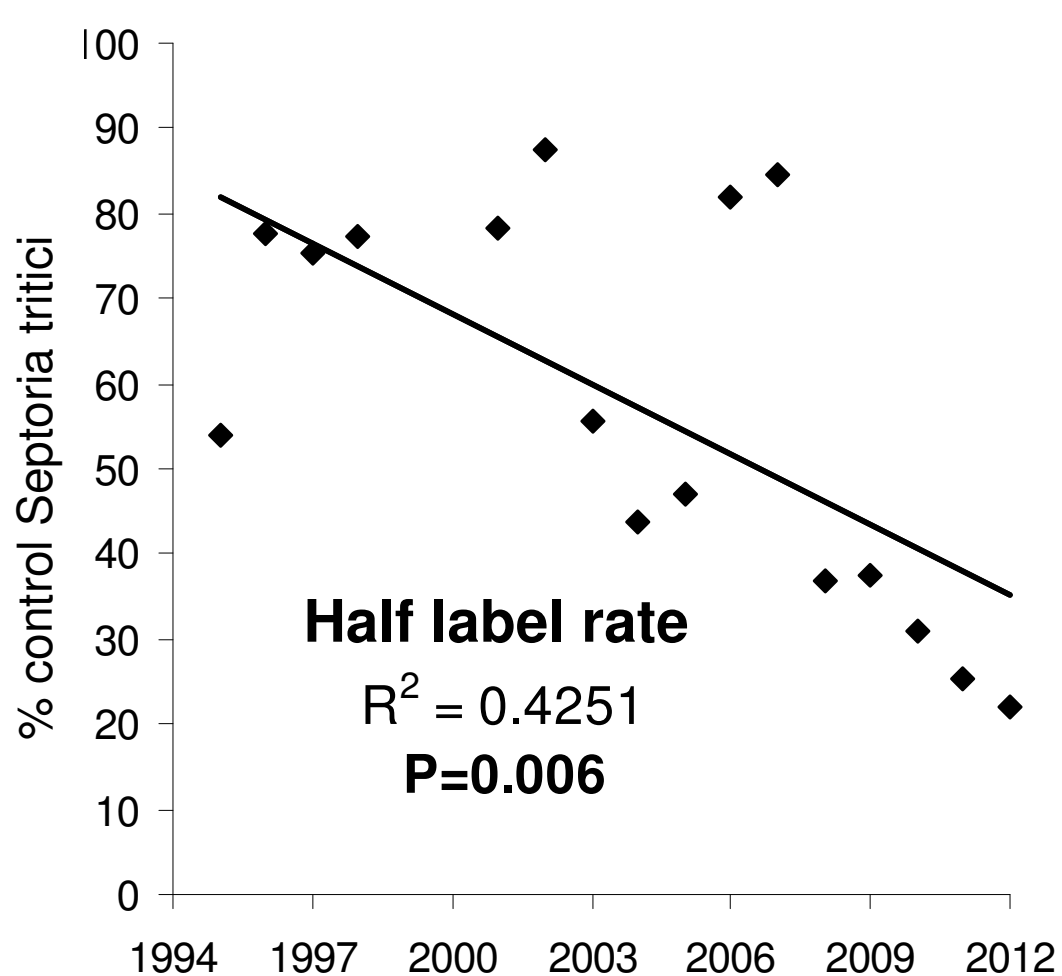
Brown rust 2012



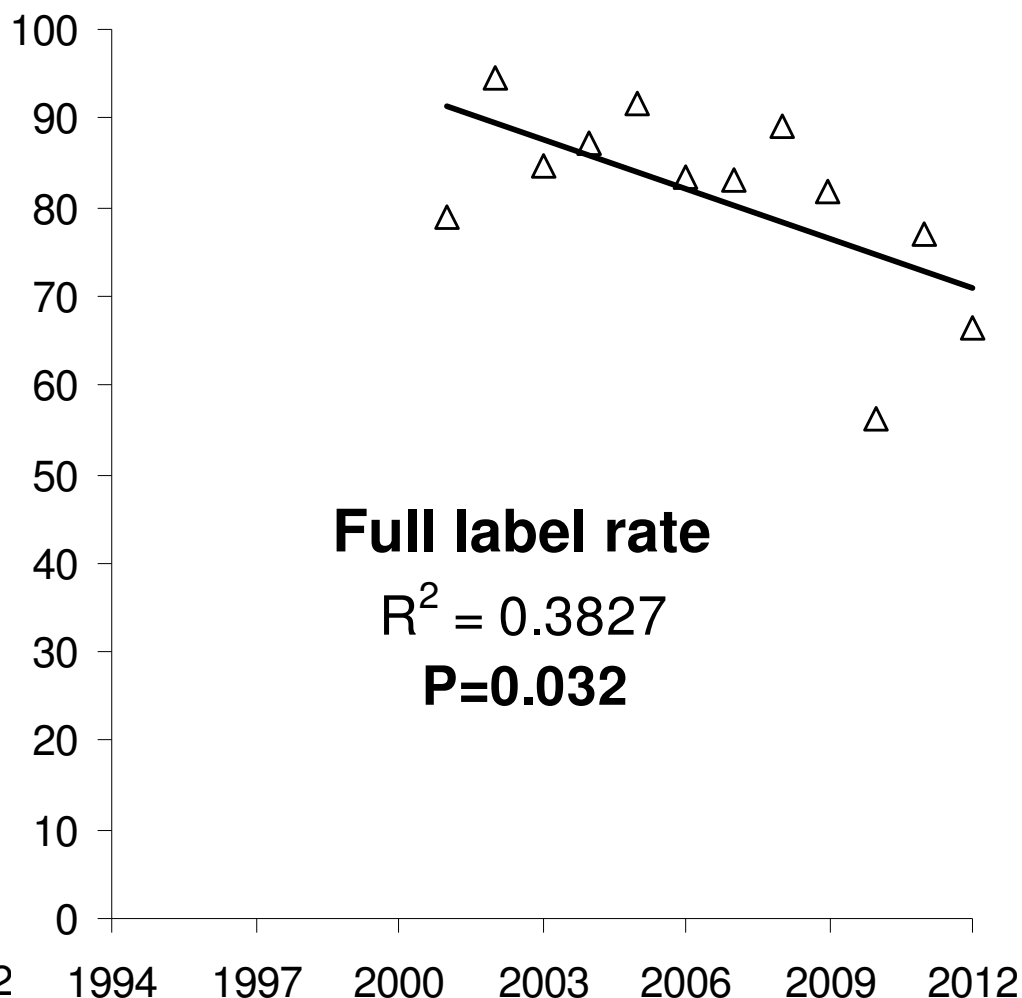
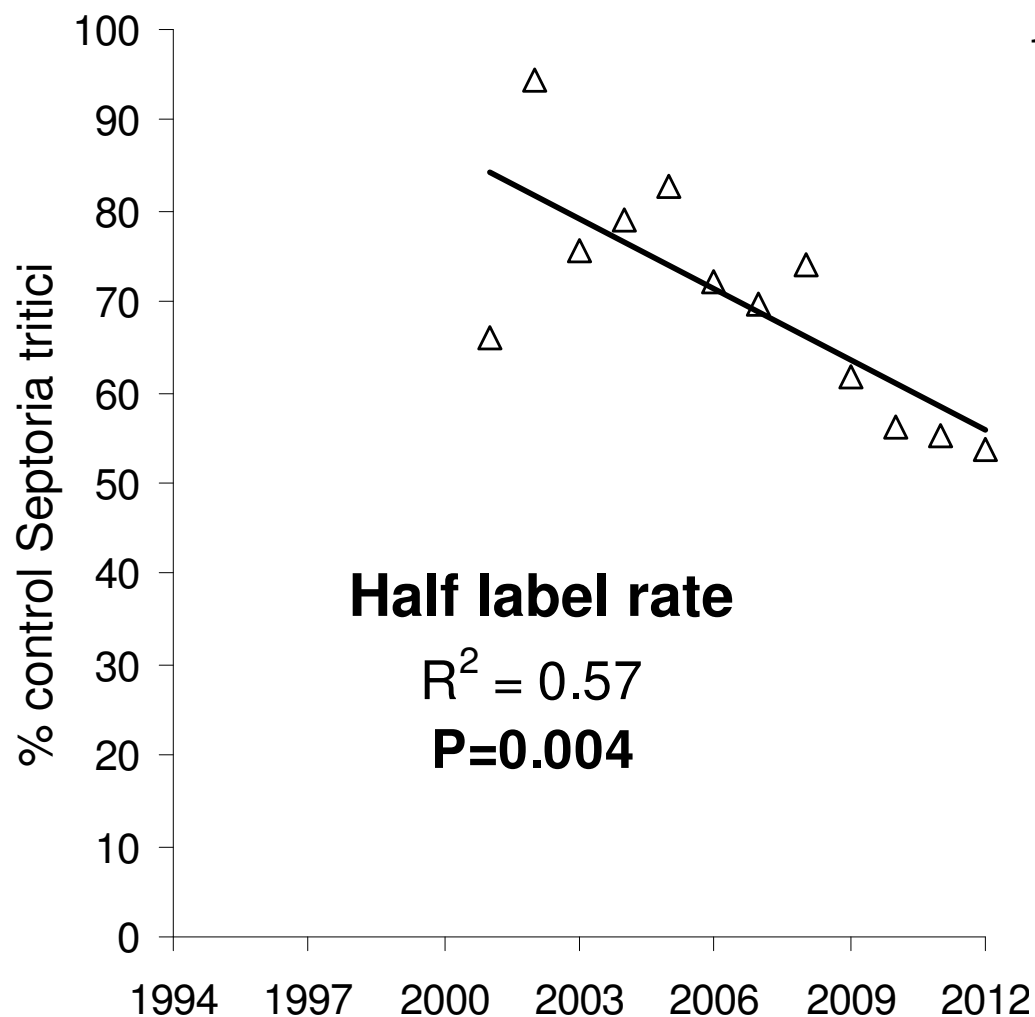
% *Septoria tritici* control with epoxiconazole Historical trends (1995-2012): Protectant



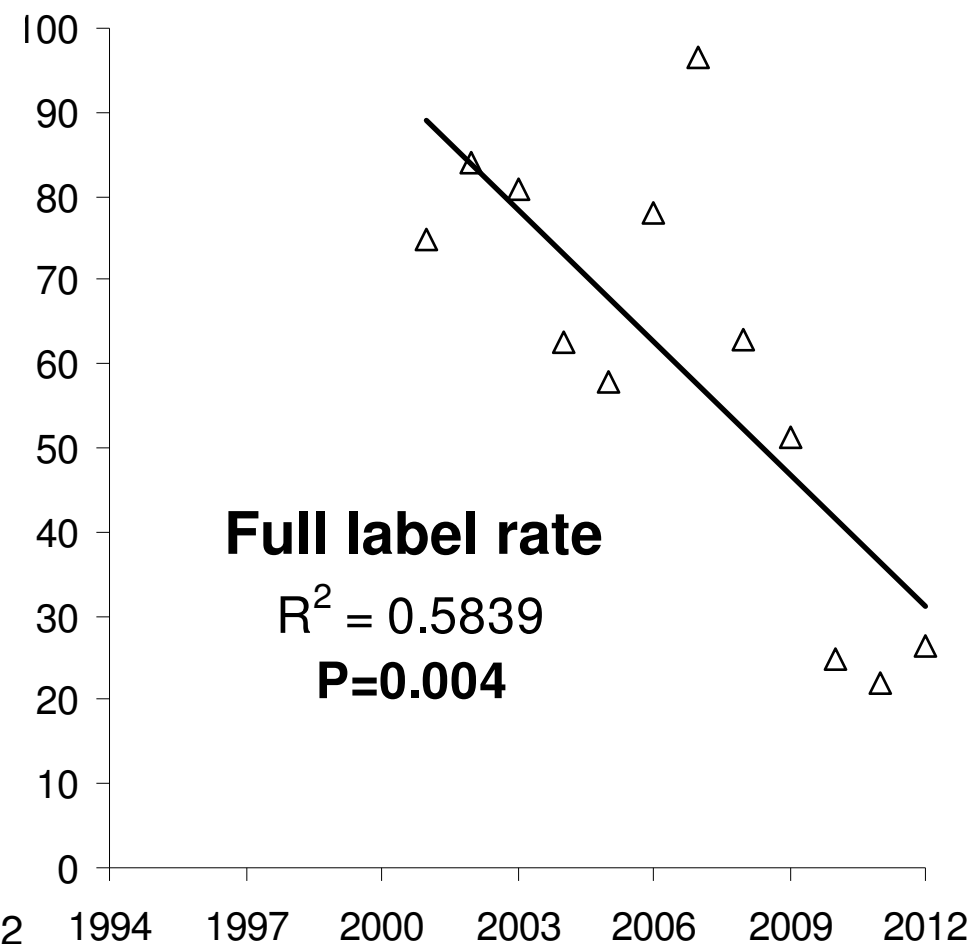
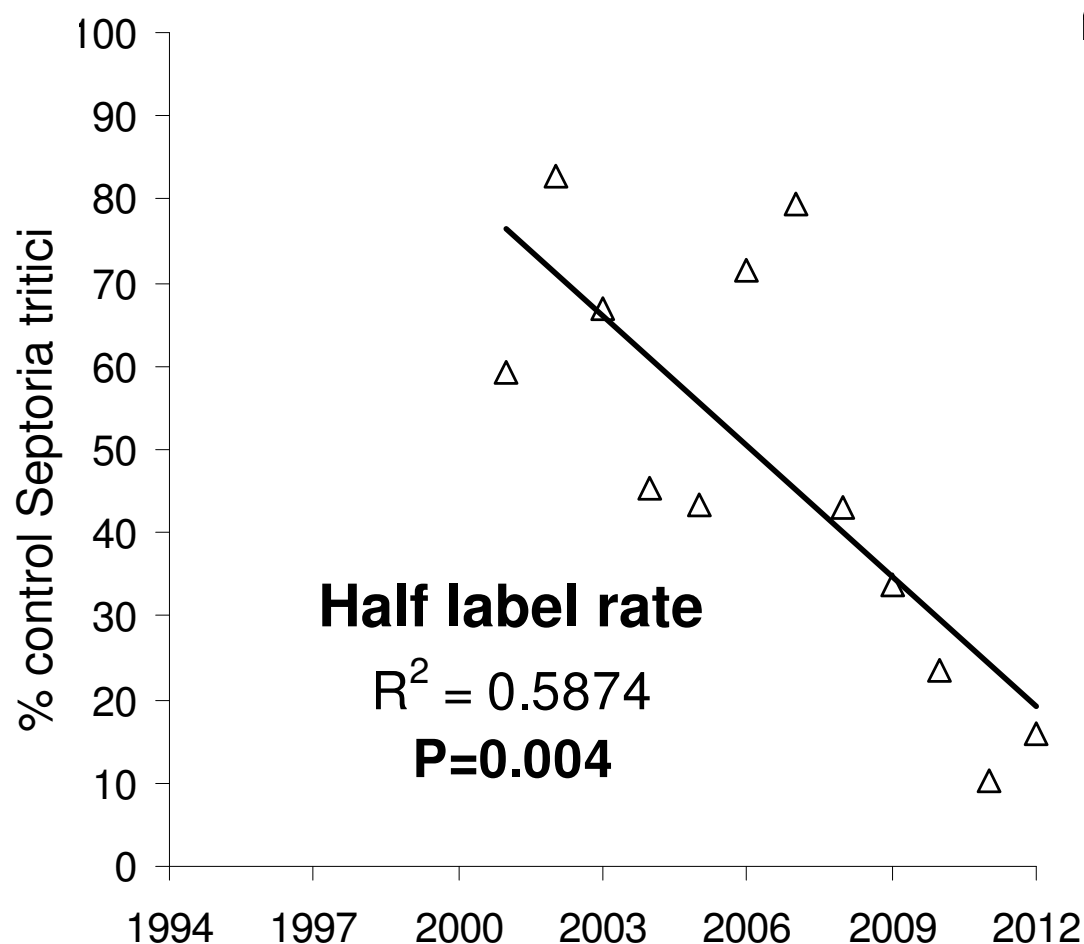
% *Septoria tritici* control with epoxiconazole Historical trends (1995-2012): Eradicant



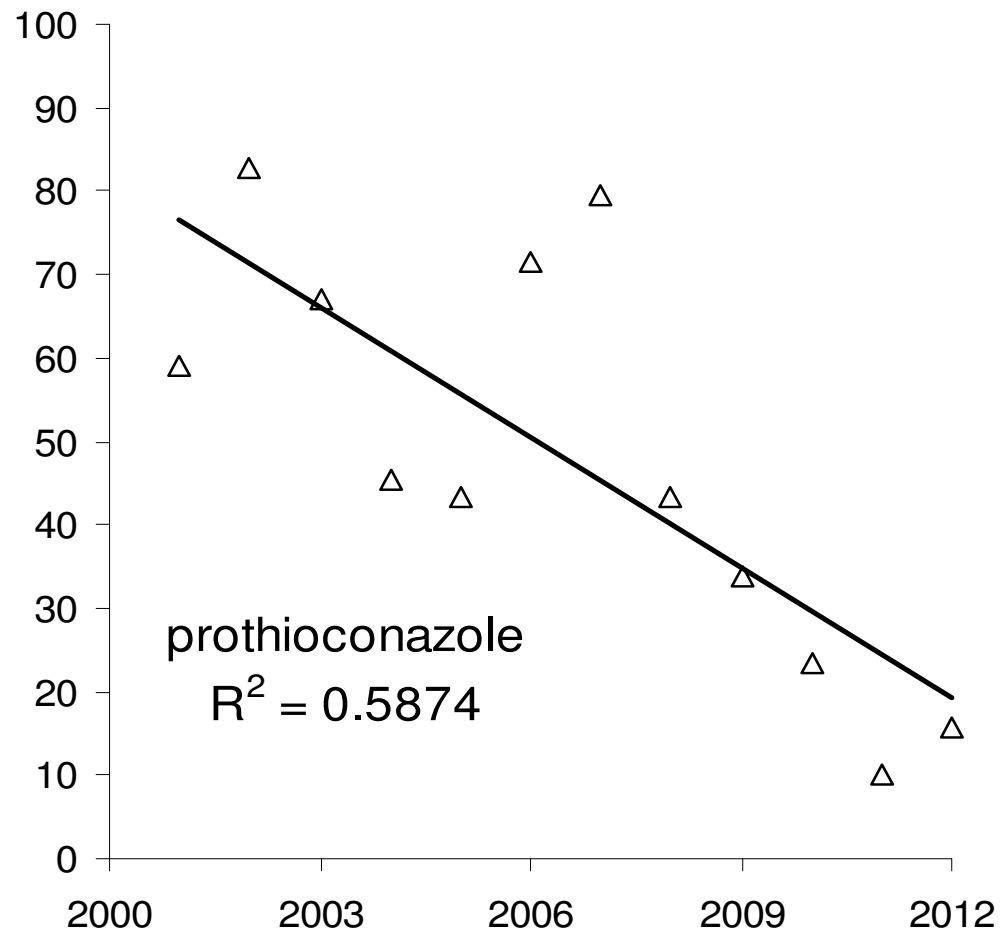
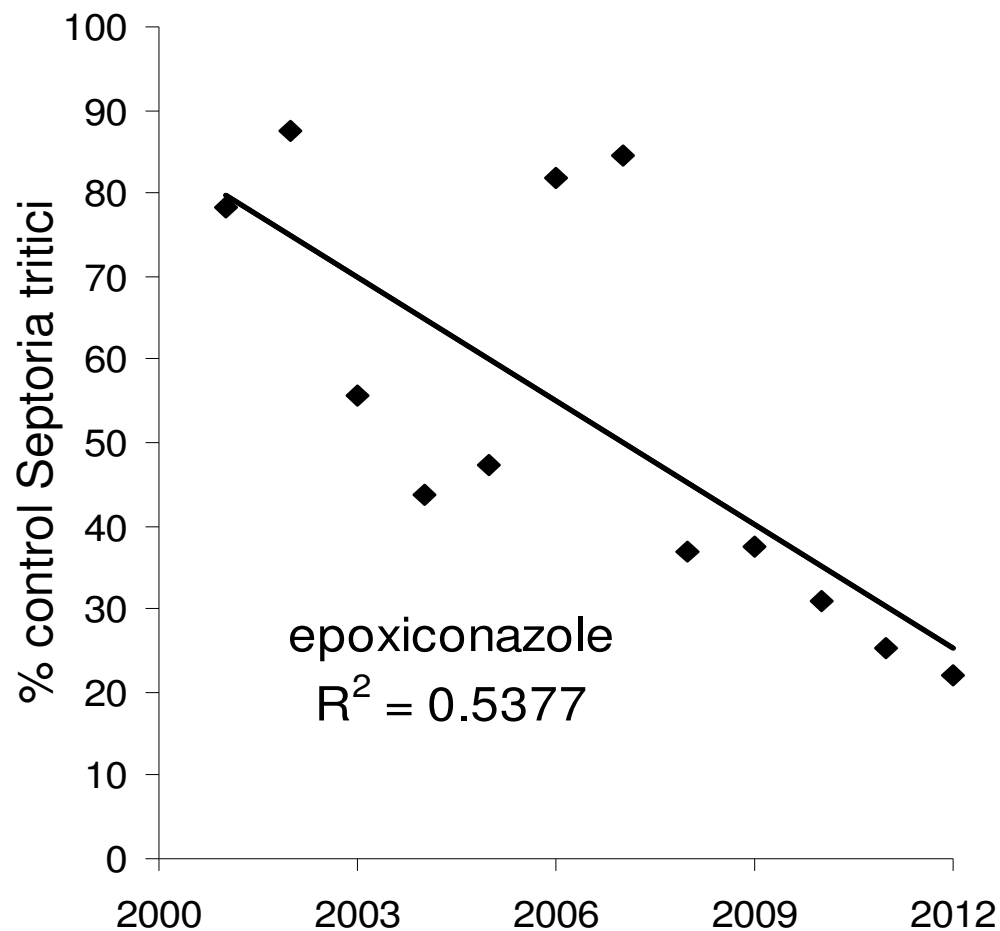
% *Septoria tritici* control with prothioconazole Historical trends (2001-2012): Protectant



% *Septoria tritici* control with prothioconazole Historical trends (2001-2012): Eradicant

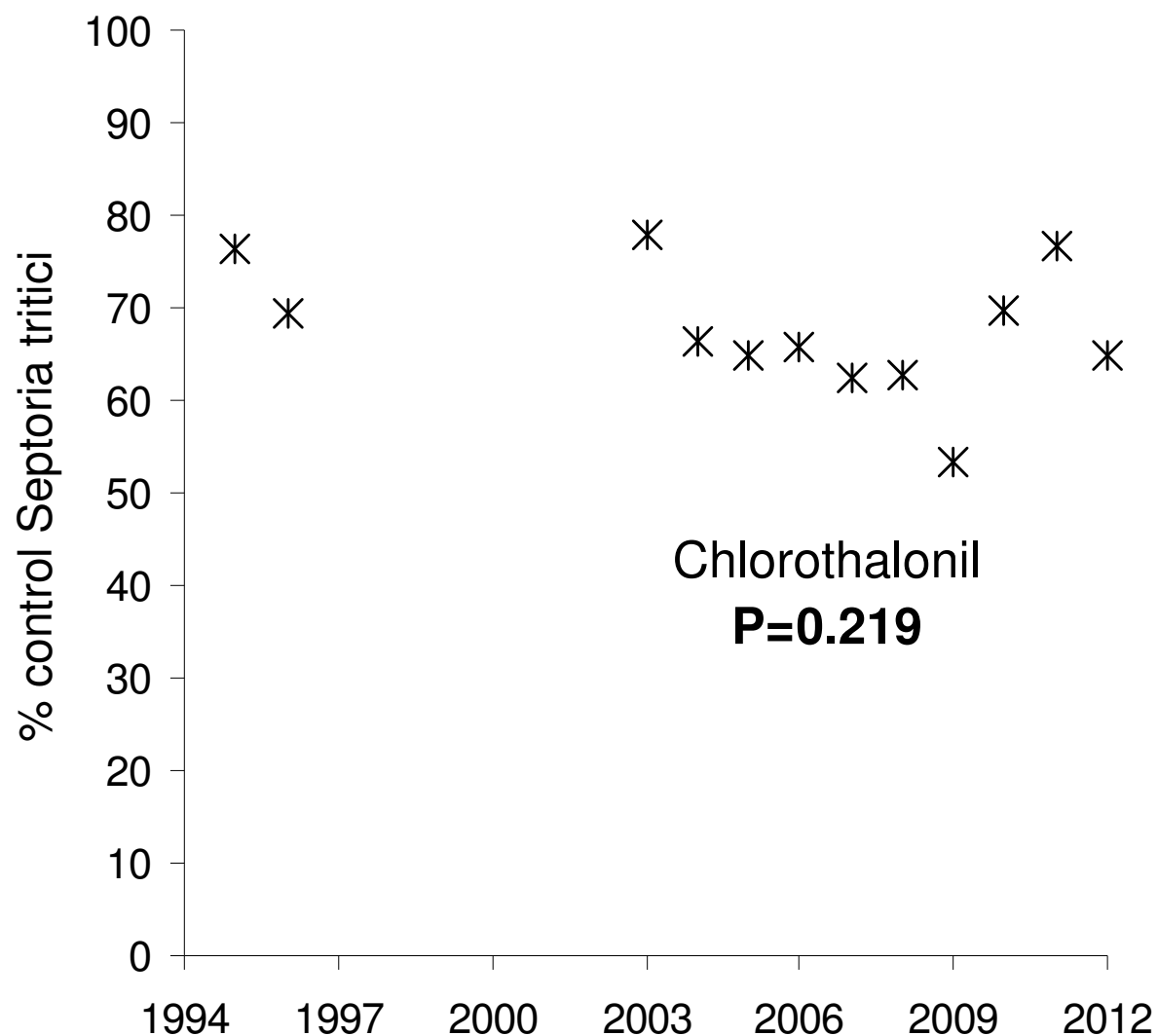


Epoxiconazole and prothioconazole declining the same (eradicator control, half rates, 2001-12)



Chlorothalonil - historical trend (1995-2012)

% control at half label rate - protectant



Conclusions: Wheat FP 2012

Septoria tritici

- Clear reduction in field performance of azoles over time
- SDHI mixtures all showed similar levels of protectant activity
- Aviator Xpro, Adexar (and Imtrex) were the leading eradicanants
- Imtrex provided excellent control, but lower yielding than Adexar
 - *Use Imtrex only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against septoria*
- Don't rely on eradicanant control
- Use SDHI's with azoles, and use multisite protectants (where possible)
- Chlorothalonil remains effective in a protectant situation

Conclusions: Wheat FP 2012



Rusts

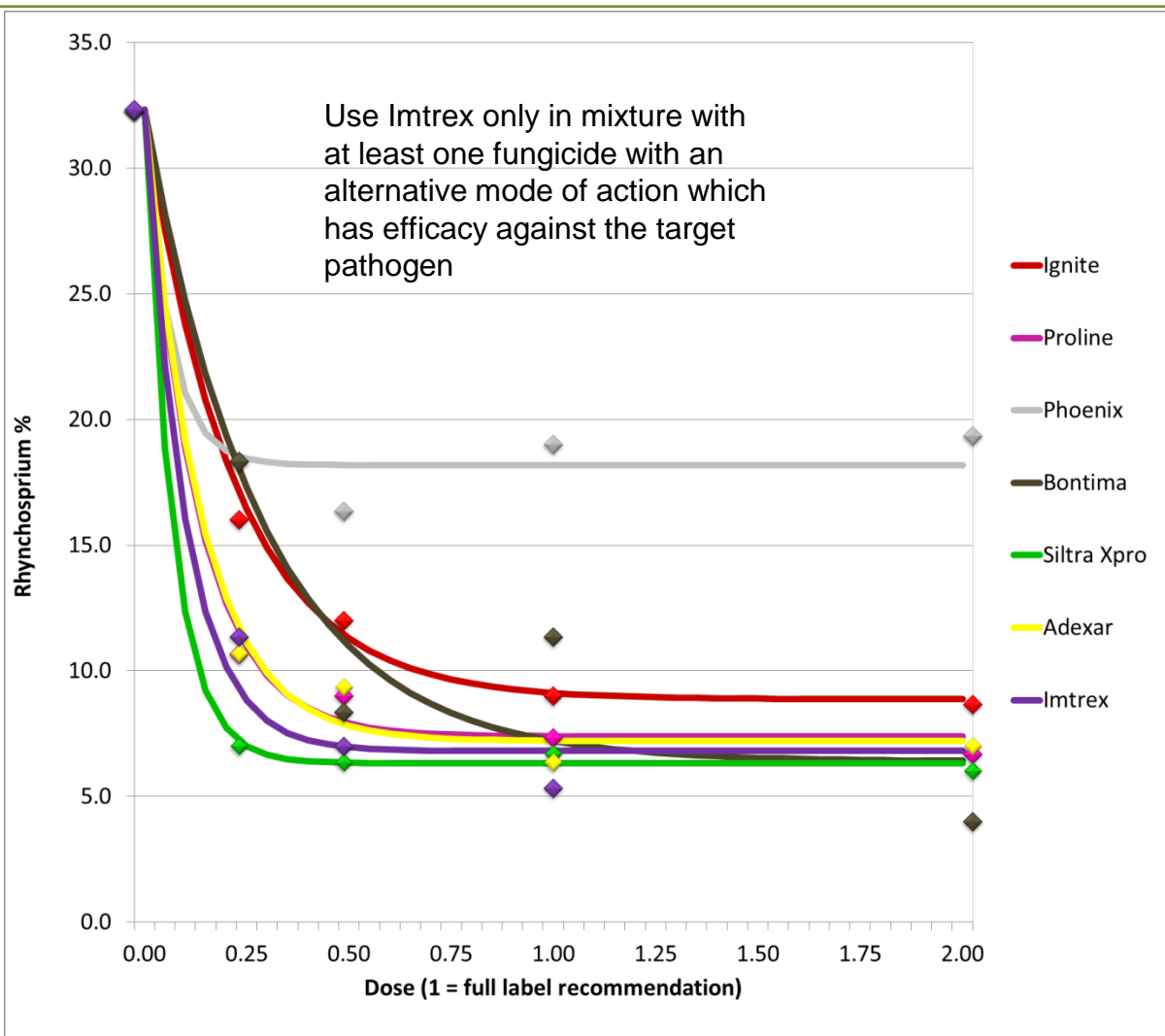
- SDHI's add to the activity of their azole partners, especially against brown rust
- Best yellow rust control from epoxiconazole-based treatments (including Seguris and Adexar)
- Little difference between Adexar, Aviator Xpro and Seguris against brown rust
- Strobilurins *e.g.* pyraclostrobin still active against rusts

Fungicide performance in barley 2012 - 2013

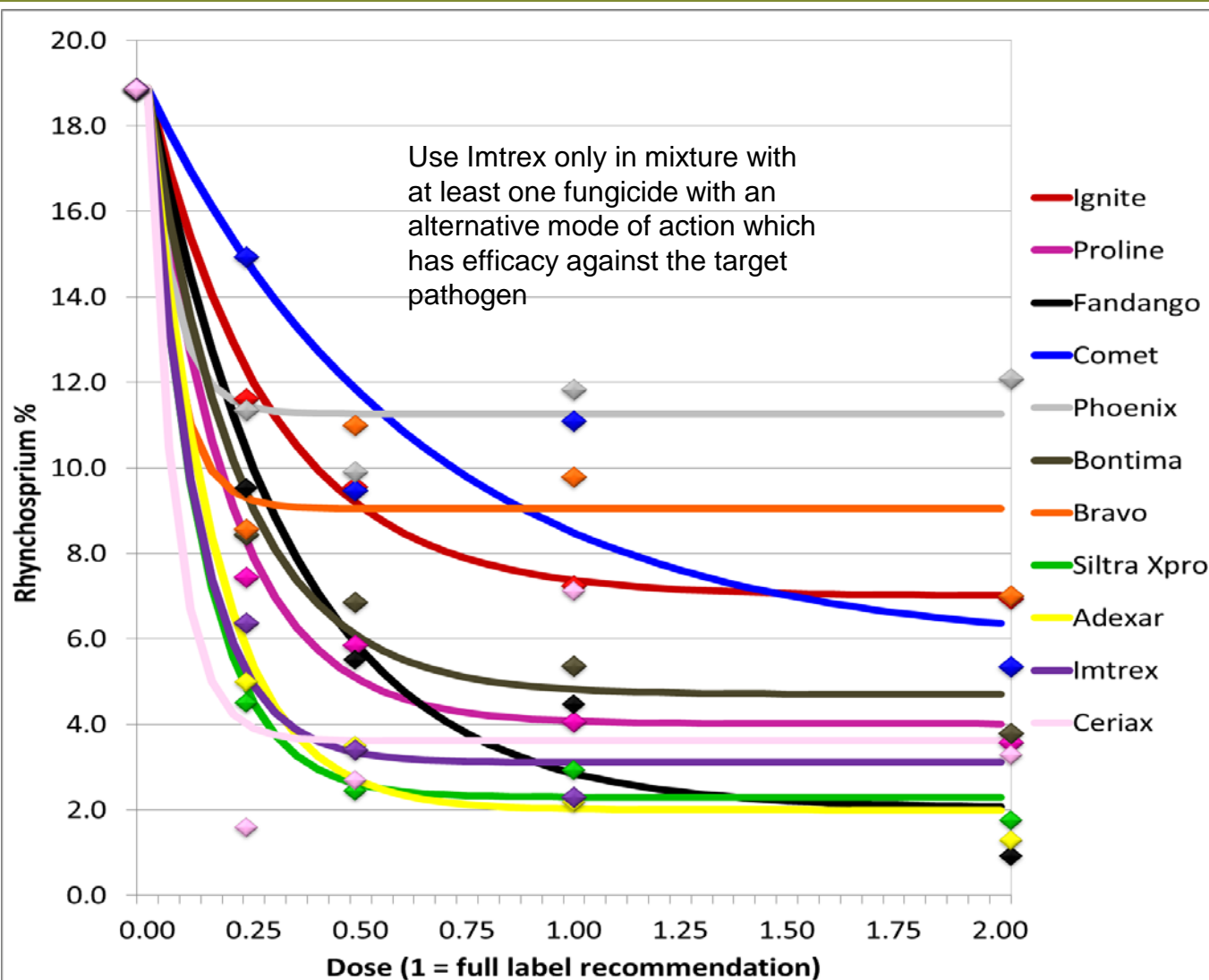


Product	Actives	1	4	5	6	7
Target		Rhyn	Net bl	Net bl	B.rust	Ram
Phoenix	folpet	✓				✓
Ignite	epoxiconazole (epx)	✓	✓	✓	✓	✓
Comet	pyraclostrobin		✓	✓	✓	
Proline	prothioconazole (ptz)	✓	✓	✓	✓	✓
<i>SDHI fungicides</i>						
Imtrex	fluxapyroxad	✓	✓	✓	✓	✓
<i>SDHI / azole formulated mixtures</i>						
Siltra Xpro	bixafen + ptz	✓	✓	✓	✓	✓
Adexar	fluxapyroxad + epox	✓	✓	✓	✓	✓
Bontima	isopyrazam+cyprodinil	✓	✓	✓	✓	✓

Rhynchosporium eradicator 2012 (N=1)

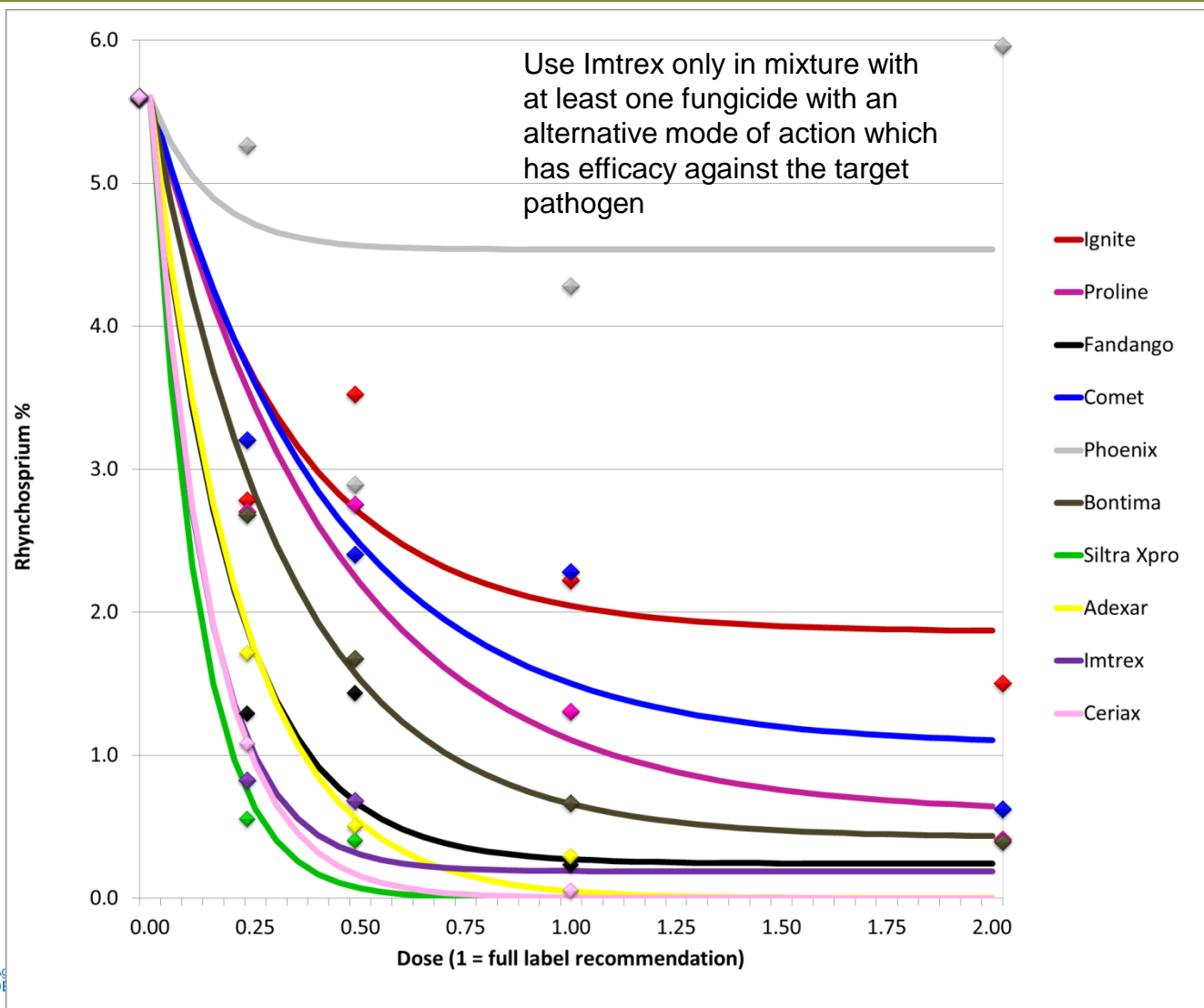


Rhynchosporium eradicator (three years)



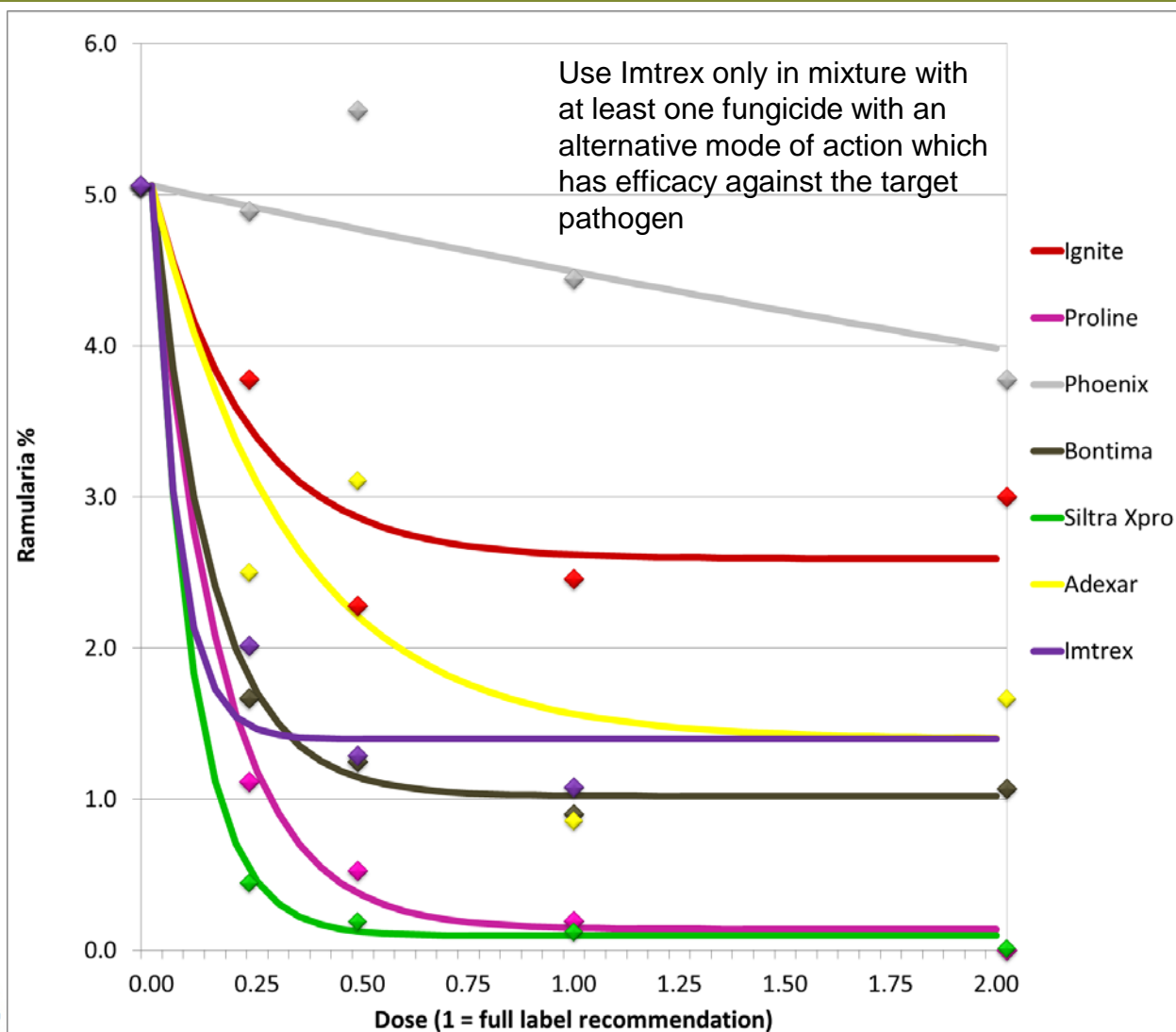
Note: Imtrex and Phoenix have only been in trial for 1 year

Rhynchosporium protectant (three years)

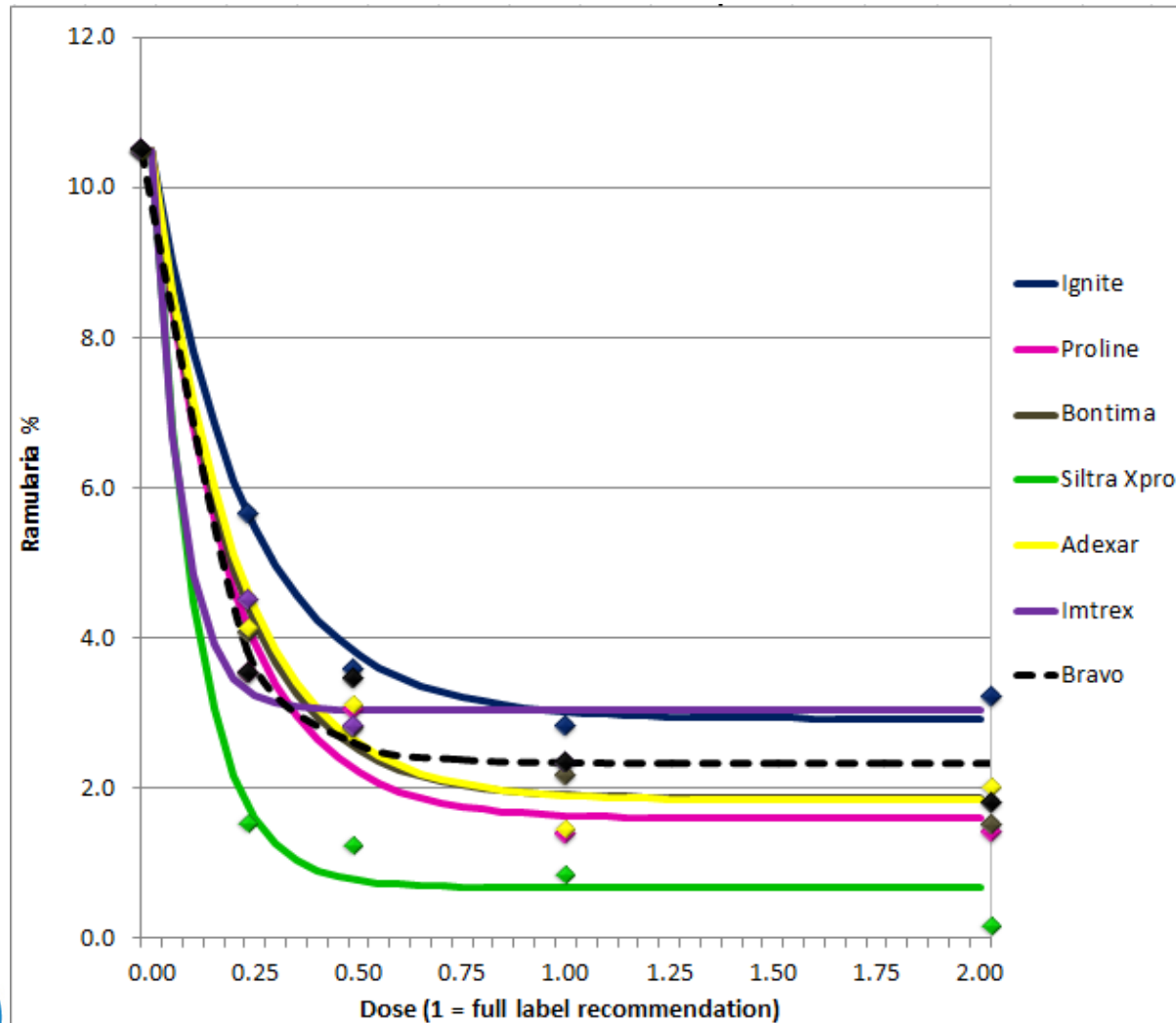


Note: Imtrex and Phoenix have only been in trial for 1 year

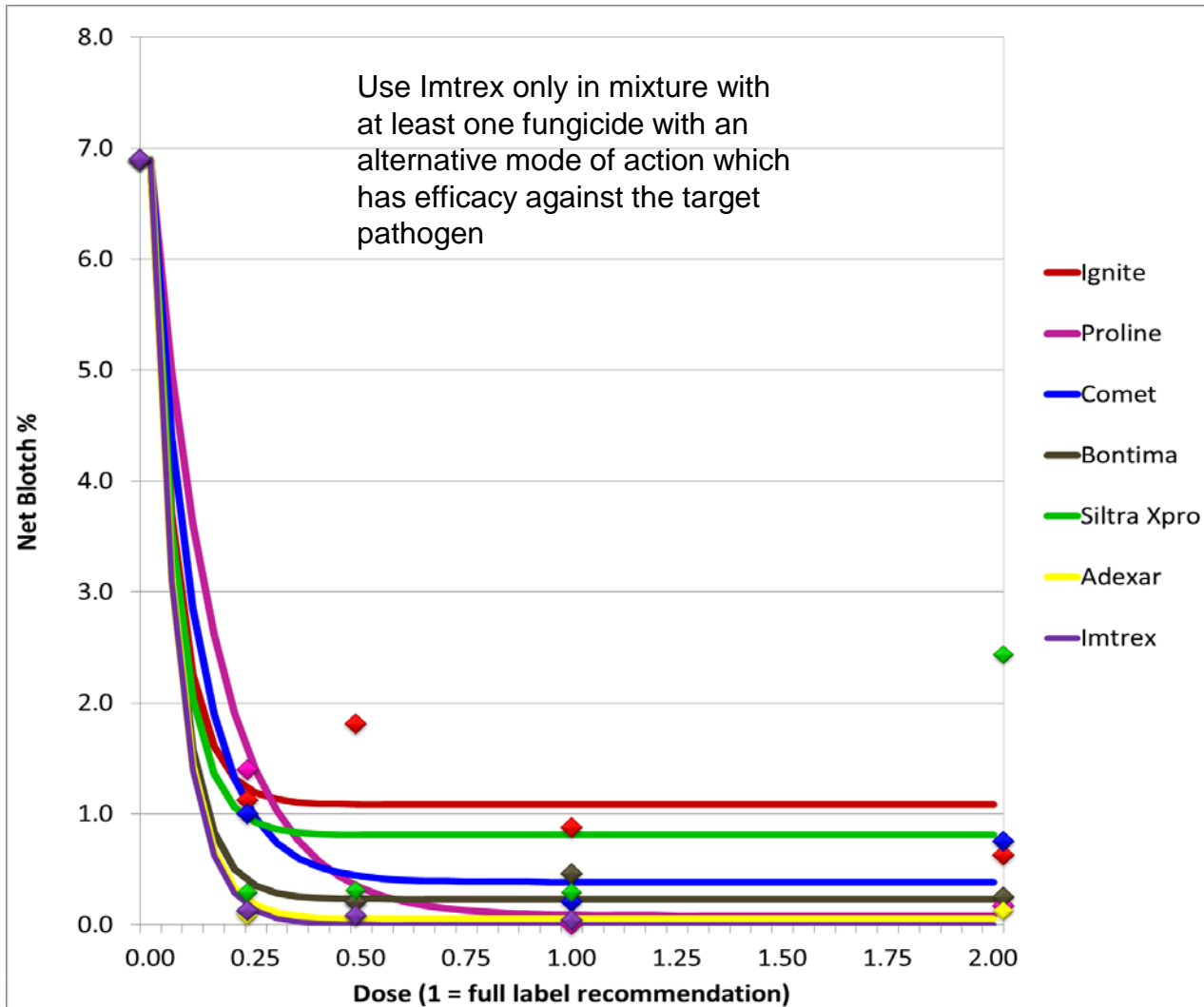
Ramularia protection 2012 (N=1)



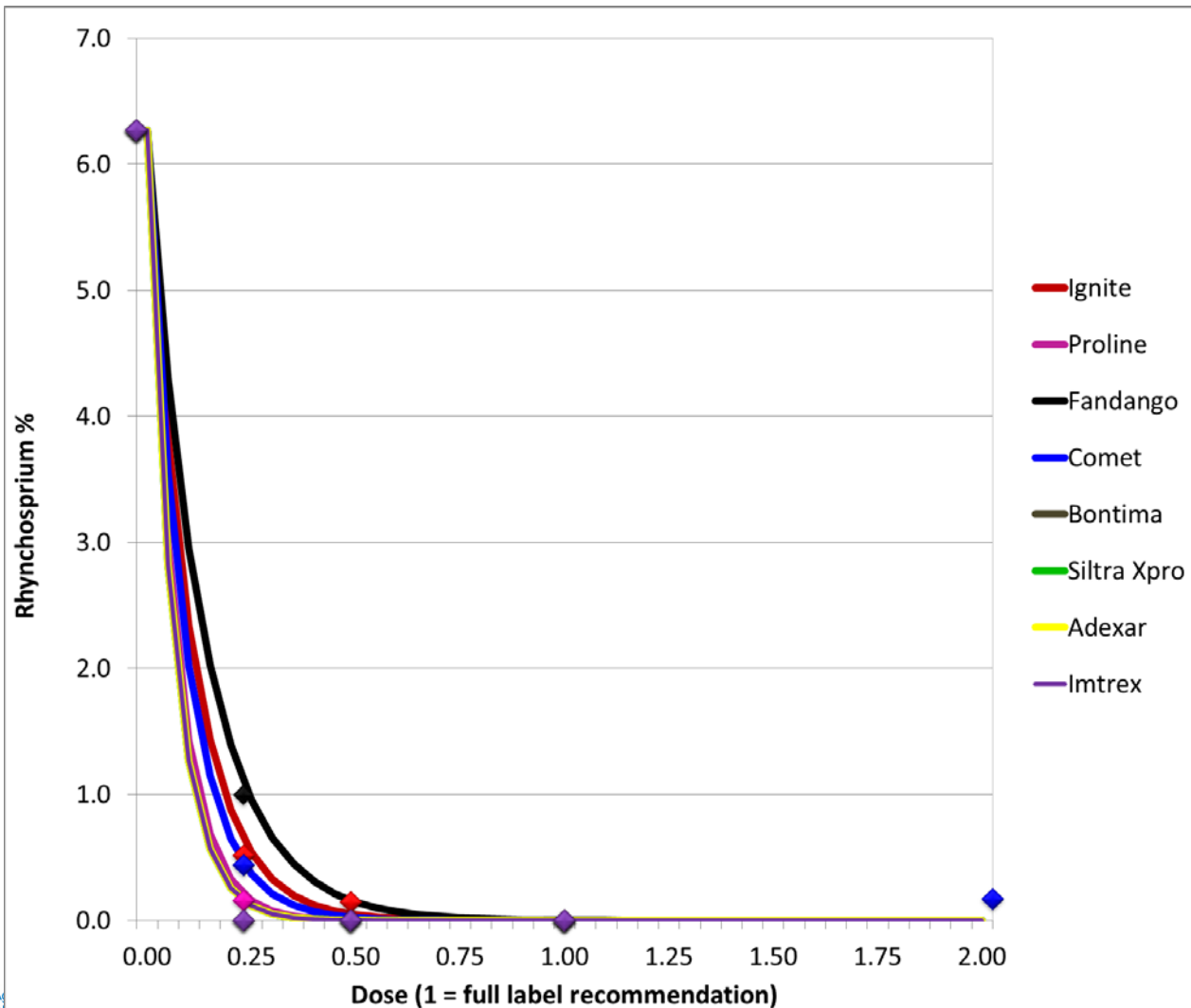
Ramularia protection (three years)



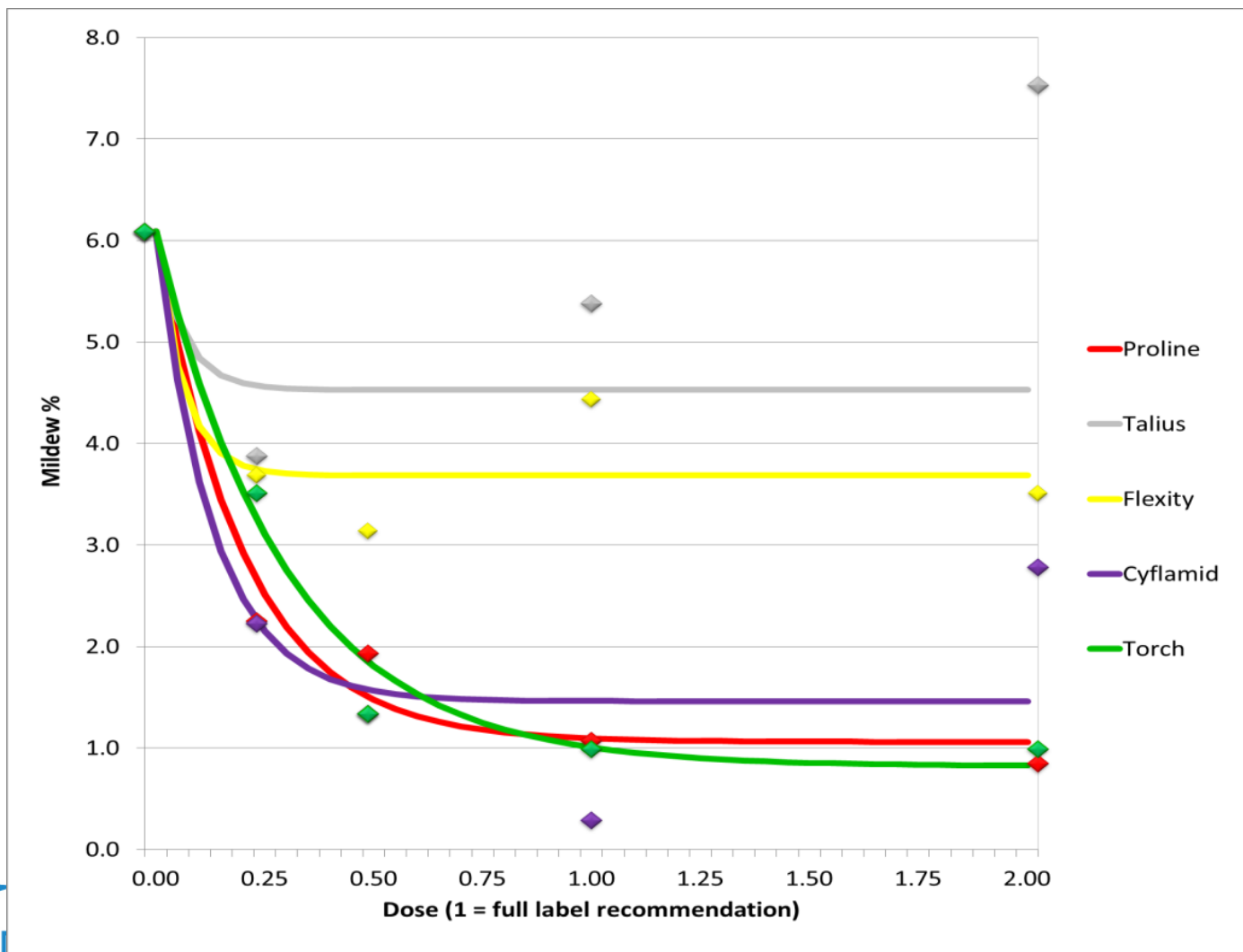
Net blotch 2012 (N=1)



Net blotch protection (three years)



Mildew eradicator (three years)



Conclusions - FP barley 2012



- *Rhynchosporium*
- Siltra Xpro and Adexar good performance and consistent with previous years
- Proline performance remains strong and consistent with previous years
- Phoenix performance – one year data, would normally be used in mixture with other fungicides

- *Ramularia*
- Siltra Xpro performance good
- SDHIs have inherently good activity and add to the ramularia activity of their azole partners. SDHIs must be used in mixture
- Proline remains strong

Conclusions - FP barley 2012



- *Net blotch*
- Siltra Xpro and Adexar good performance and consistent with previous years
- SDHIs improve azole activity
- Proline performance remains strong and consistent with previous years
- Strobilurins remain effective against net blotch

- *Mildew*
- Prothioconazole and SDHIs give protectant activity
- Use specific mildewicide protectants in high risk crops

- *Brown rust*
- No data gathered in 2012

Thank you

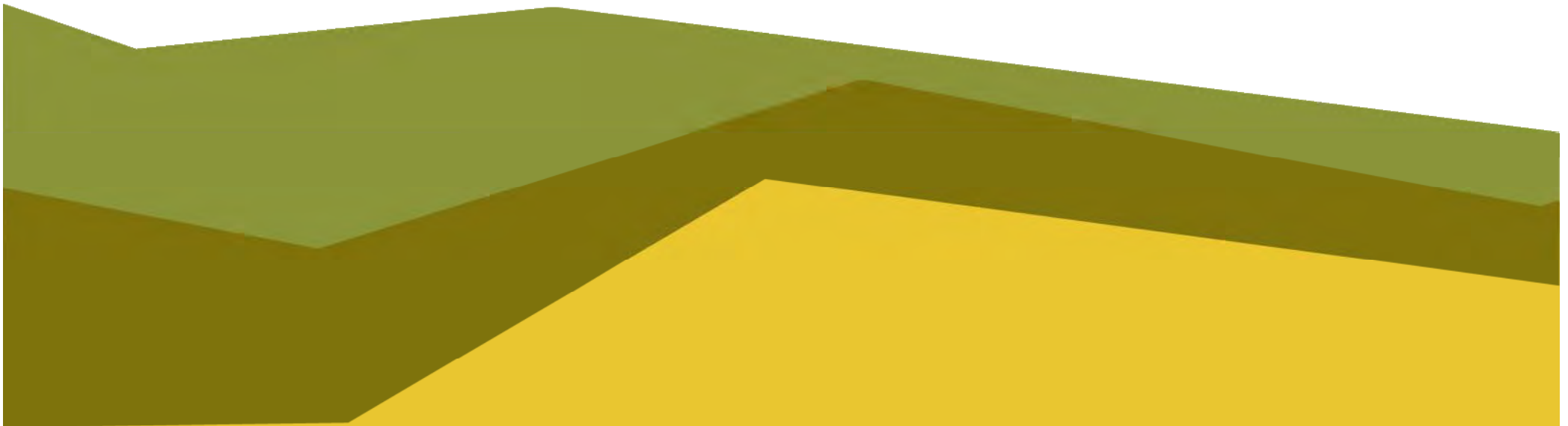
Jonathan Blake - ADAS

Fiona Burnett - SRUC

John Spink - Teagasc

Paul Gosling - HGCA

Fungicide performance in oilseed rape 2012 - 2013



HGCA OSR Fungicide performance sites 2010-2012



- Phoma control - 2 sprays (Boxworth and Terrington)
- Light leaf spot - 2 sprays (Aberdeen and Malton, North Yorkshire)
- Sclerotinia - 1 spray (Hereford and Essex/Kent)

Fungicide products tested in 2010-2012

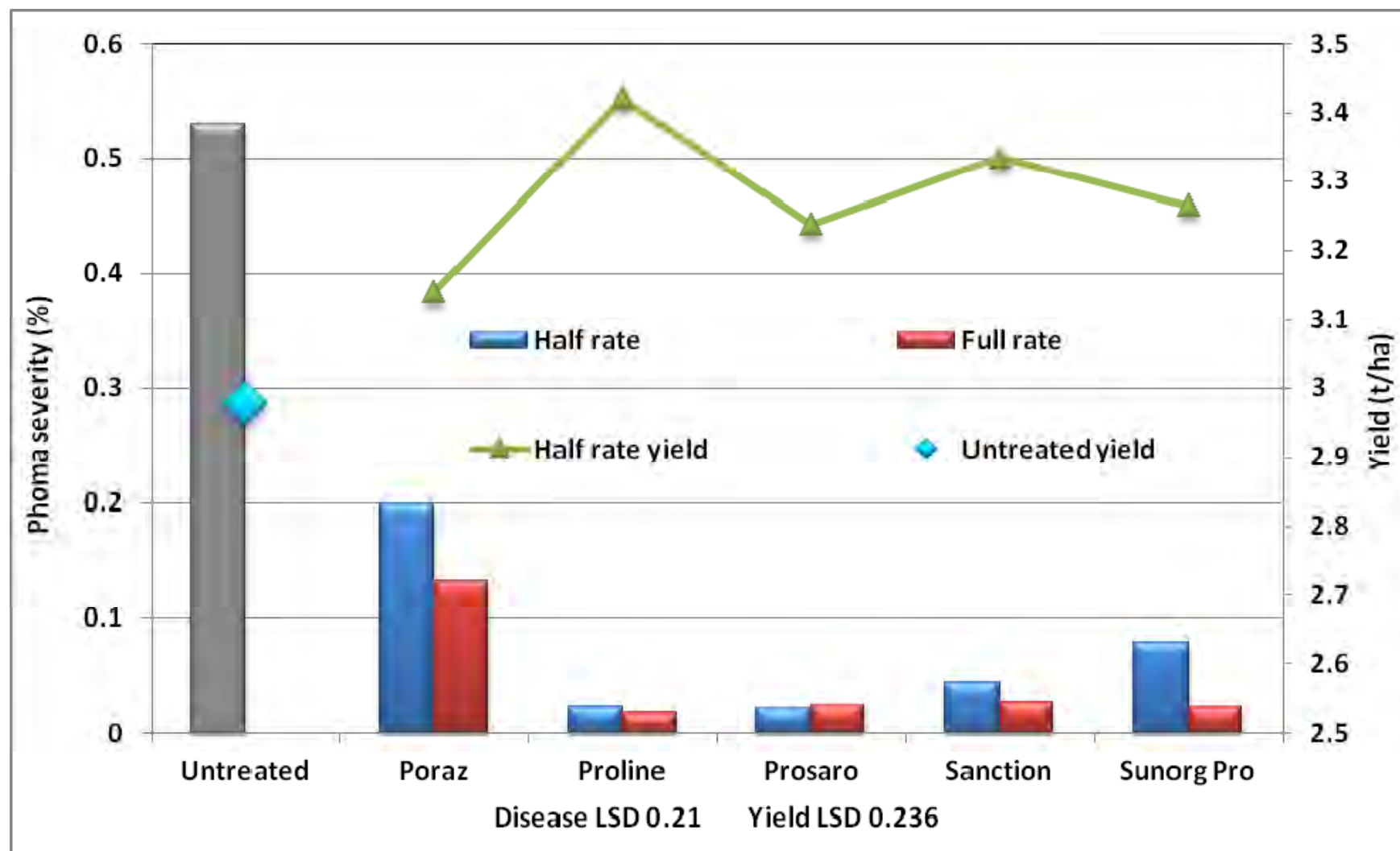


Phoma		Light leaf spot		Sclerotinia	
Prosaro	1.0 l/ha	Prosaro	1.0 l/ha	Amistar	1.0 l/ha
Proline	0.63 l/ha	Proline	0.63 l/ha	Compass	3.0 l/ha
Sunorg Pro	0.8 l/ha	Sanction	0.8 l/ha	Filan	0.5 kg/ha
Sanction	0.8 l/ha	Poraz	1.1 l/ha	Proline	0.63 l/ha
Poraz	1.1 l/ha			Prosaro	0.7 l/ha
				Topsin	0.71 l/ha
				Galileo	1.0 l/ha
				Tectura	1.0 l/ha

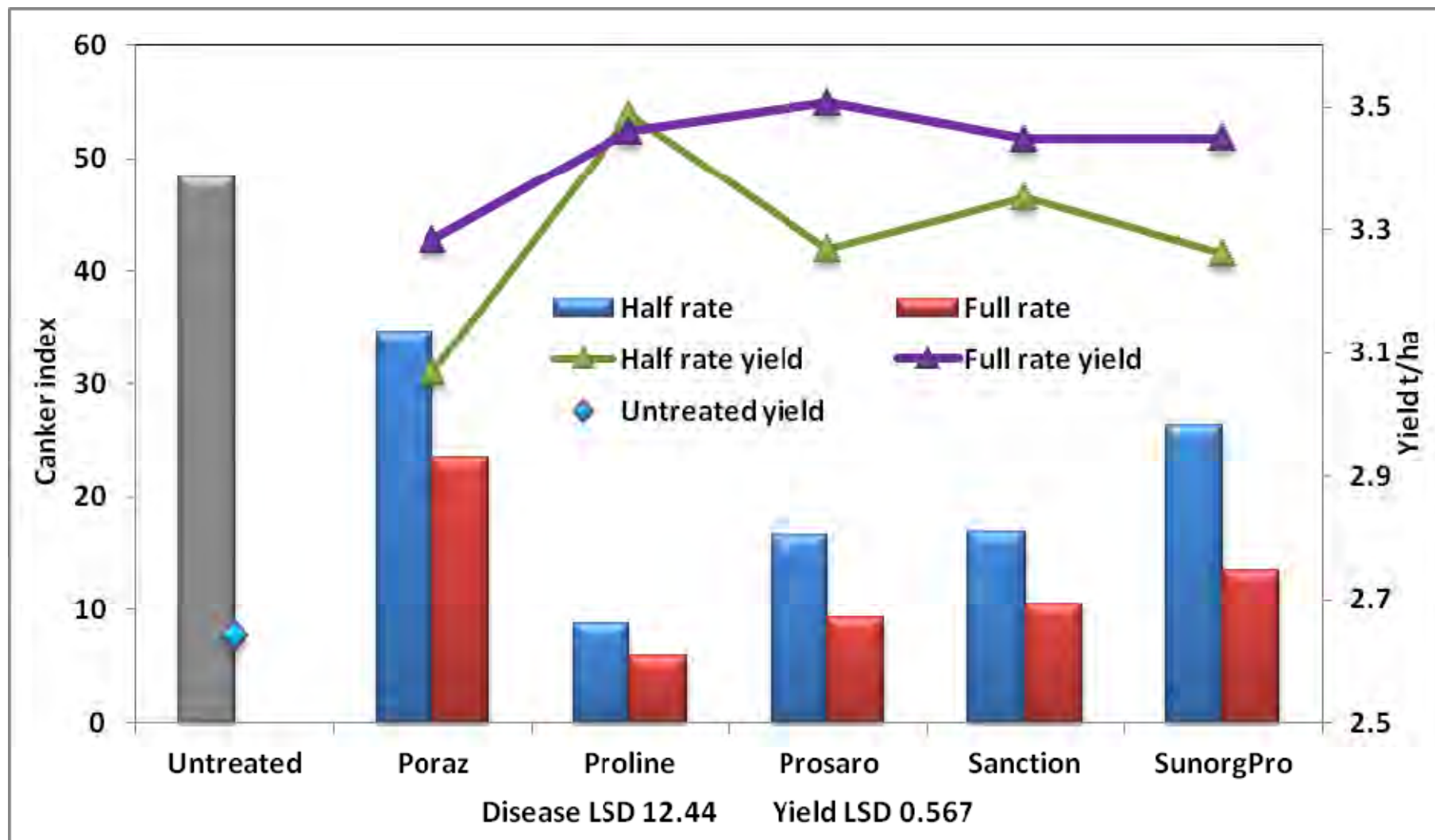
Phoma A v. Phoma B *L. maculans* *L. biglobosa*



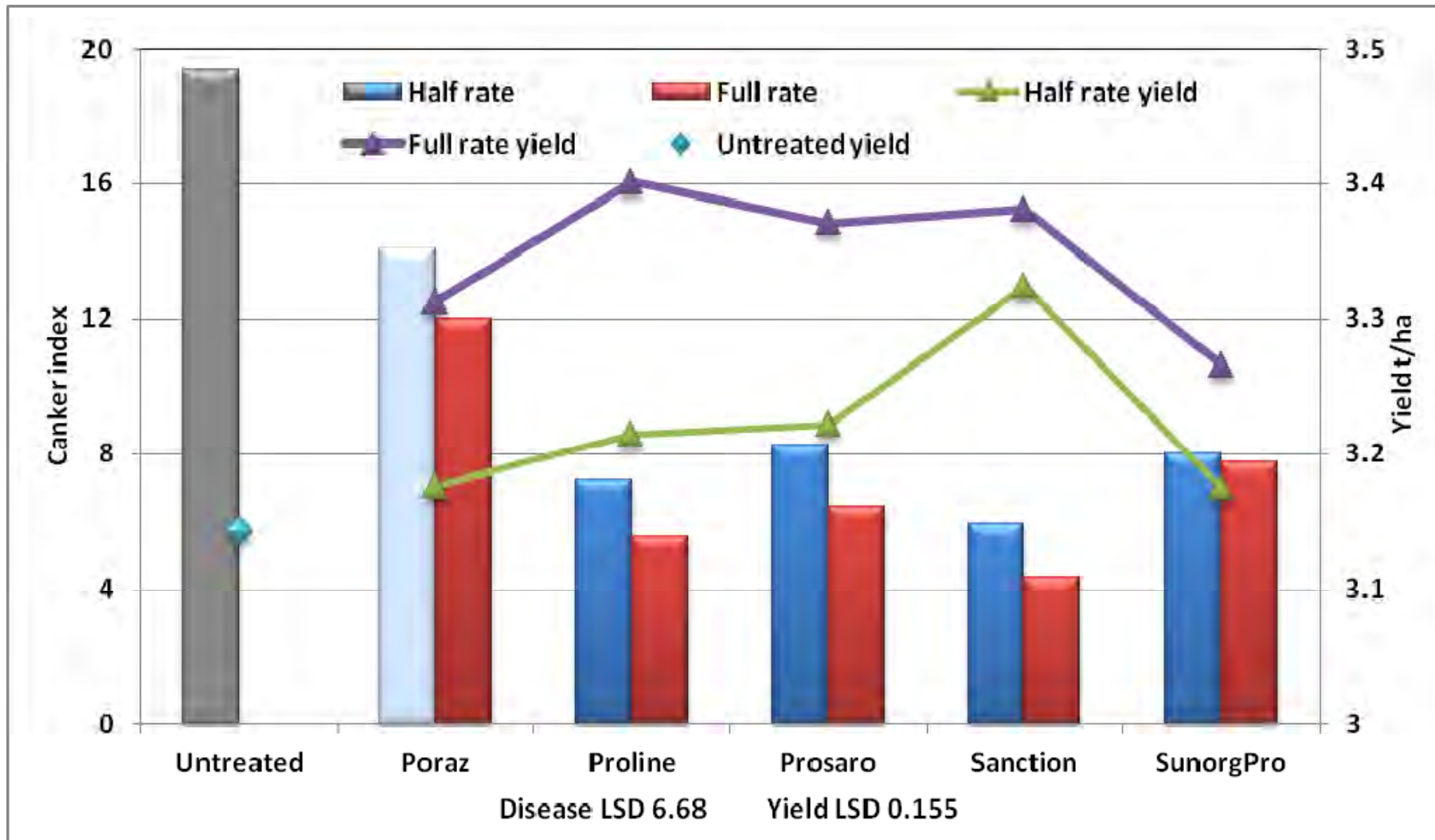
Leaf phoma severity across 6 trials (2010 to 2012)



Phoma canker control and yield with moderately high canker severity in 2011 (2 experiments)



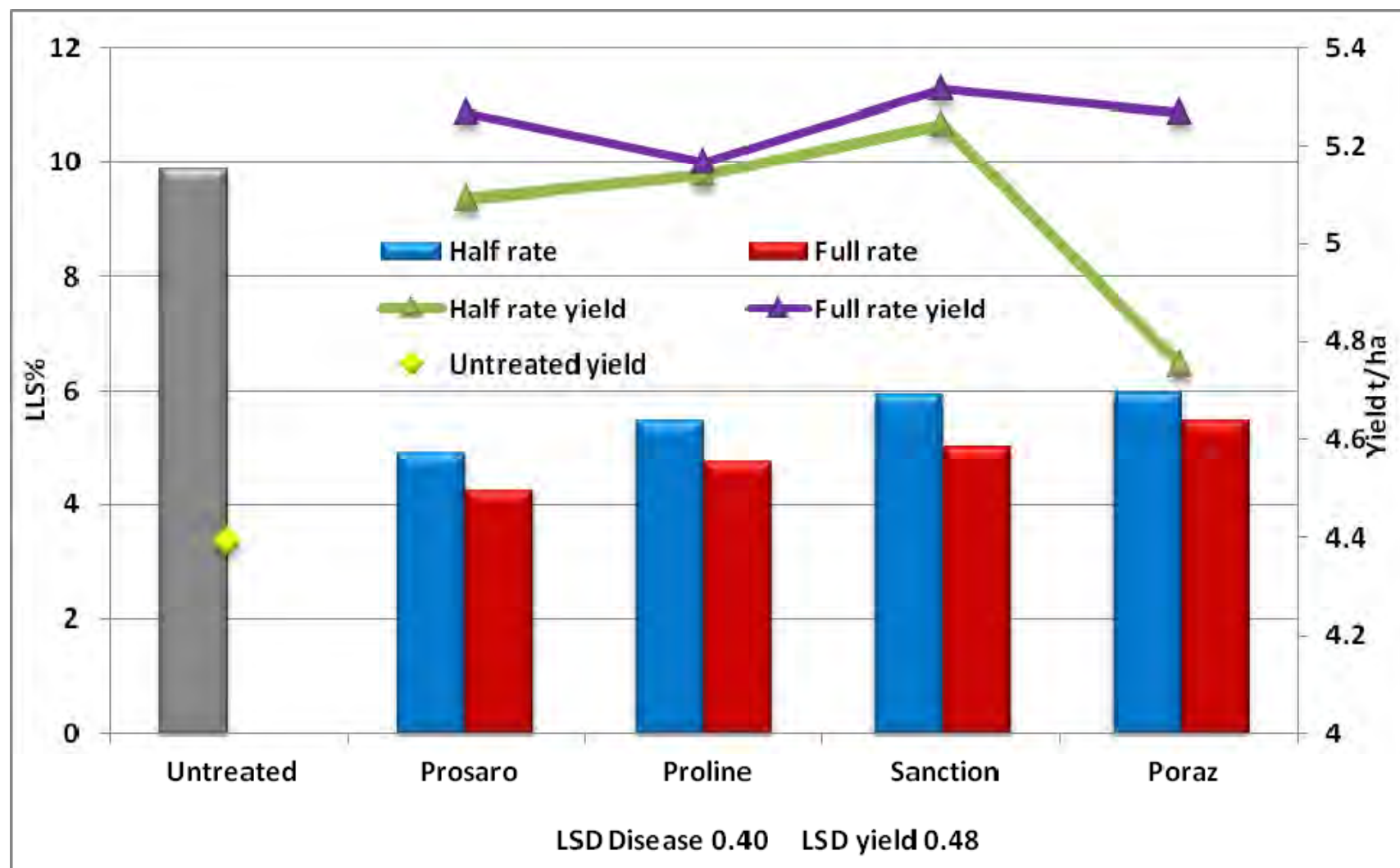
Low canker severity and yield - 4 trials (2010 to 2012)



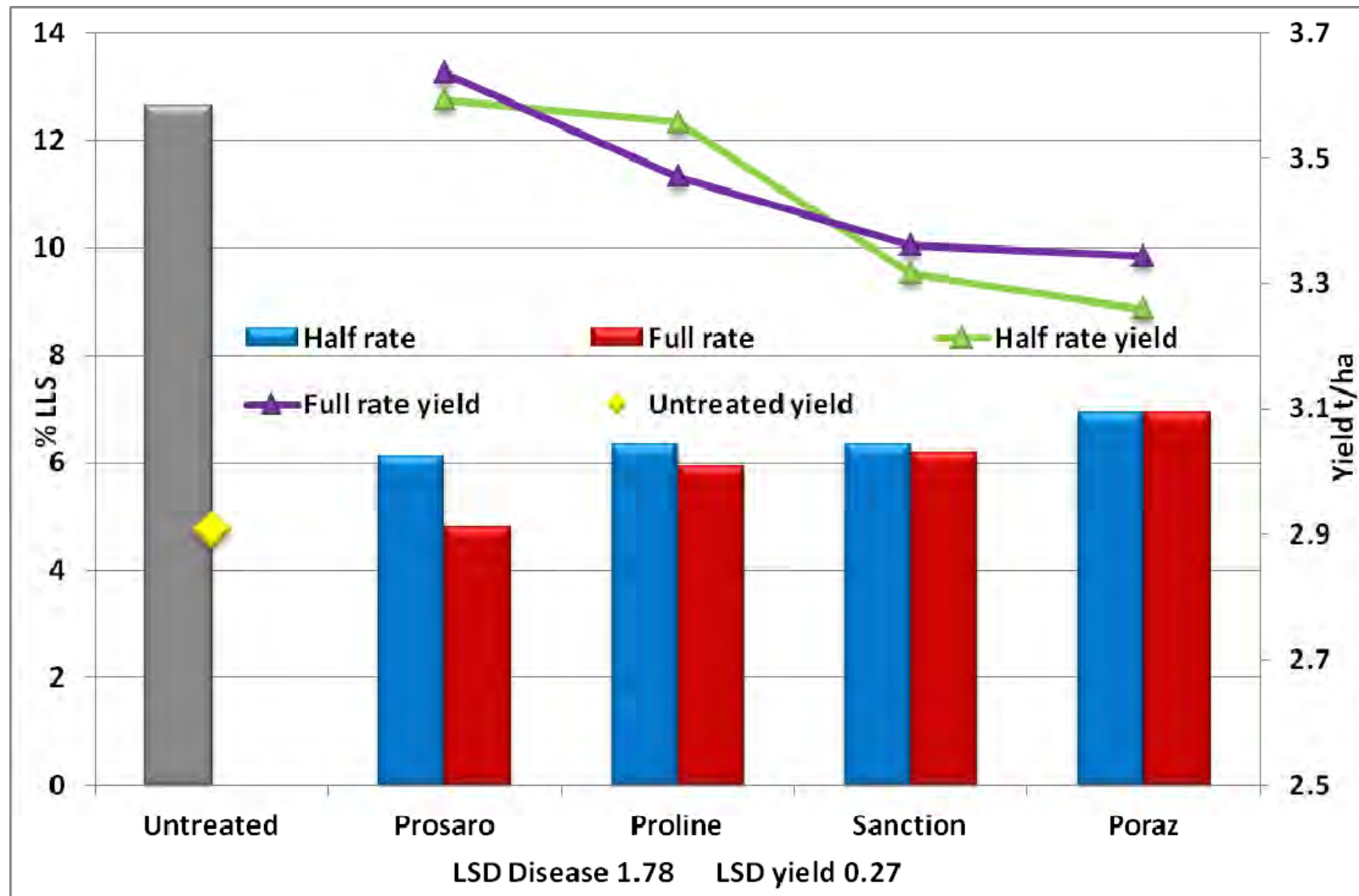
Light leaf spot - increased risk for 2012/2013



Light leaf spot control similar with product and dose - High Mowthorpe 2011

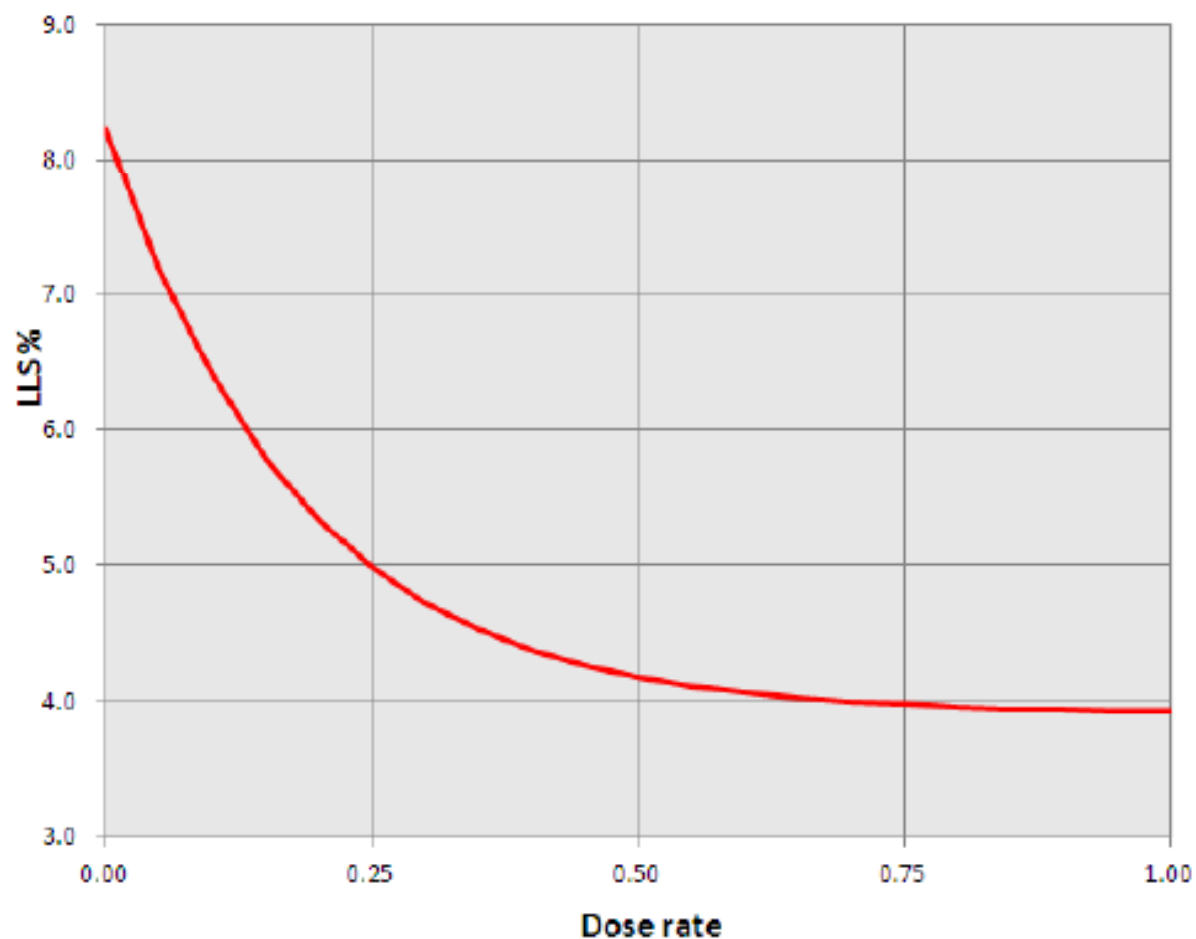


Light leaf spot control similar with product and dose - High Mowthorpe 2012



Source: HGCA FP 2012

Light leaf spot control not improved by high doses of prothioconazole (2 experiments)



Phoma and Light leaf spot summary

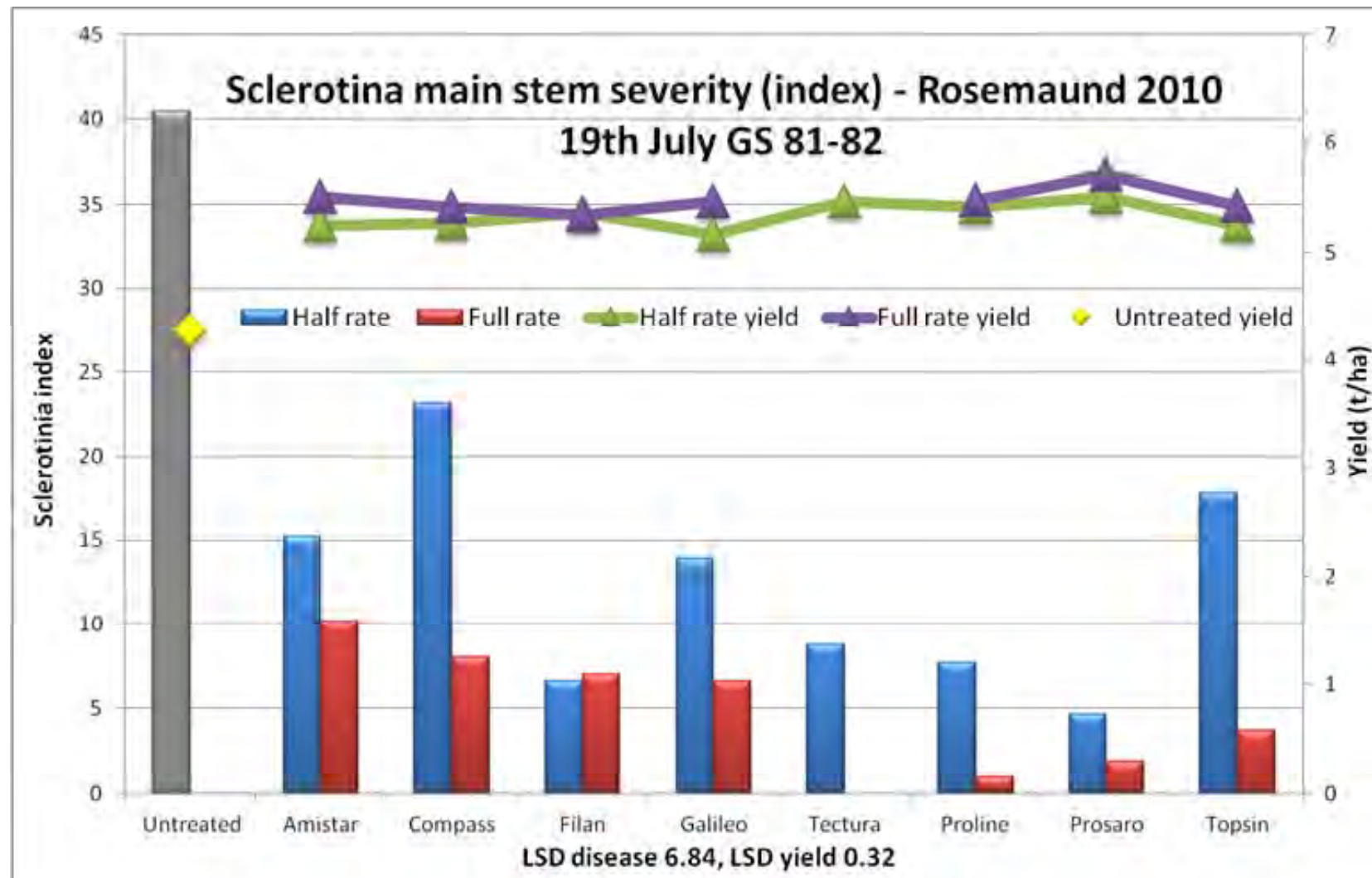


- Phoma control - 2 sprays at half dose are robust
 - product selection should consider curative activity and pgr effects
- Light leaf spot - 2 sprays autumn + stem extension gave moderate control
 - be prepared to spray January/February and use 3 sprays

Sclerotinia control

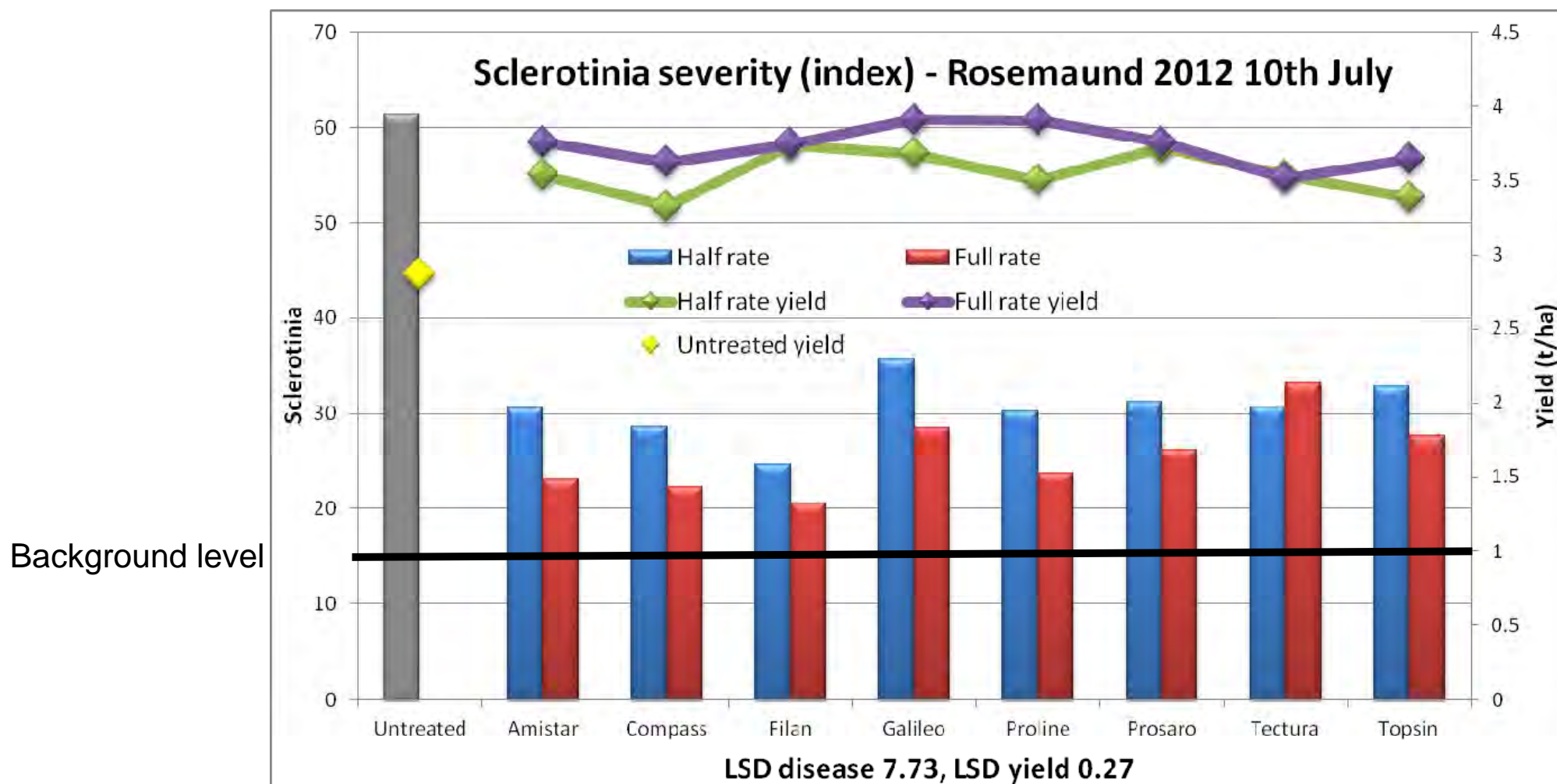


Sclerotinia - products tested by end of flowering infection in 2010

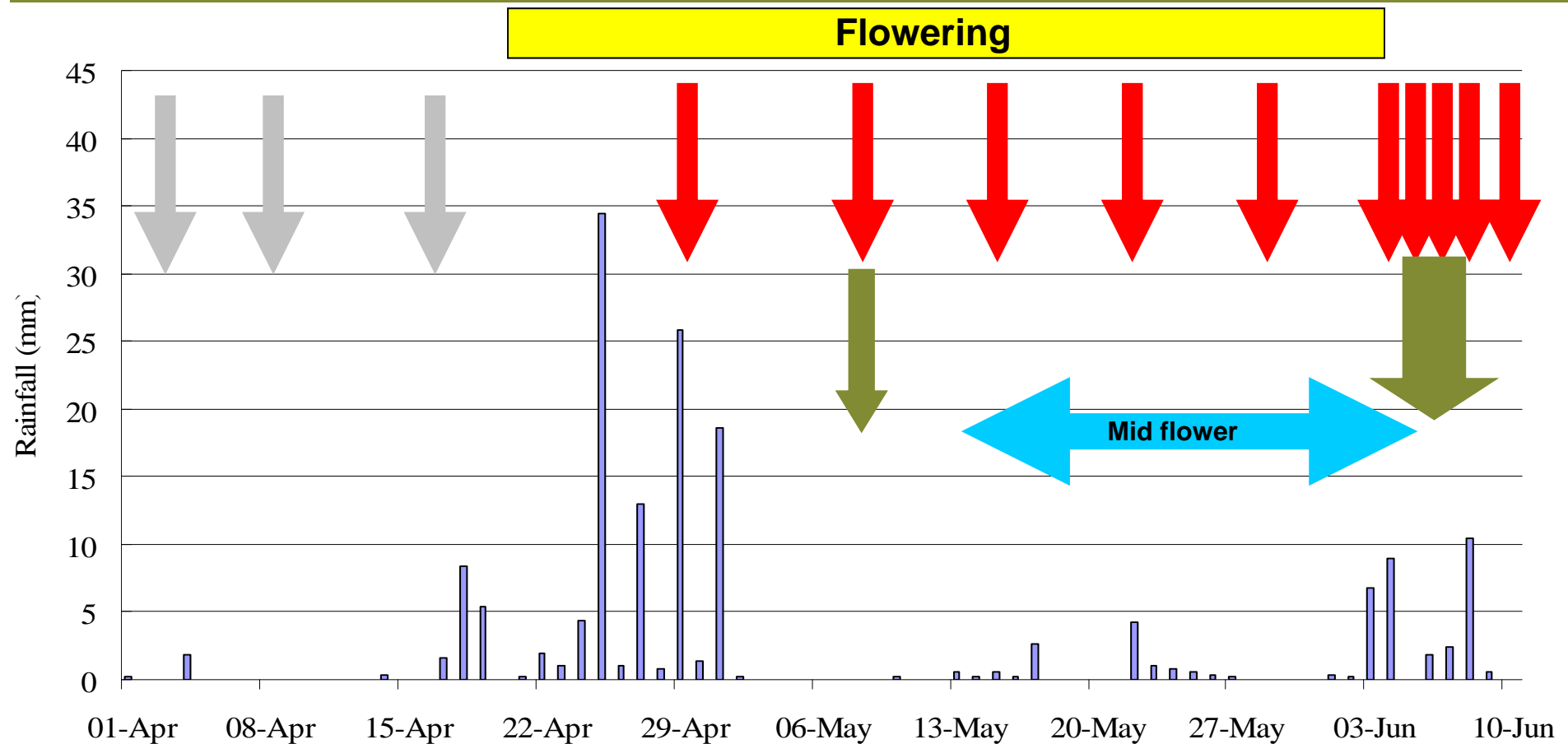


High sclerotinia in 2012

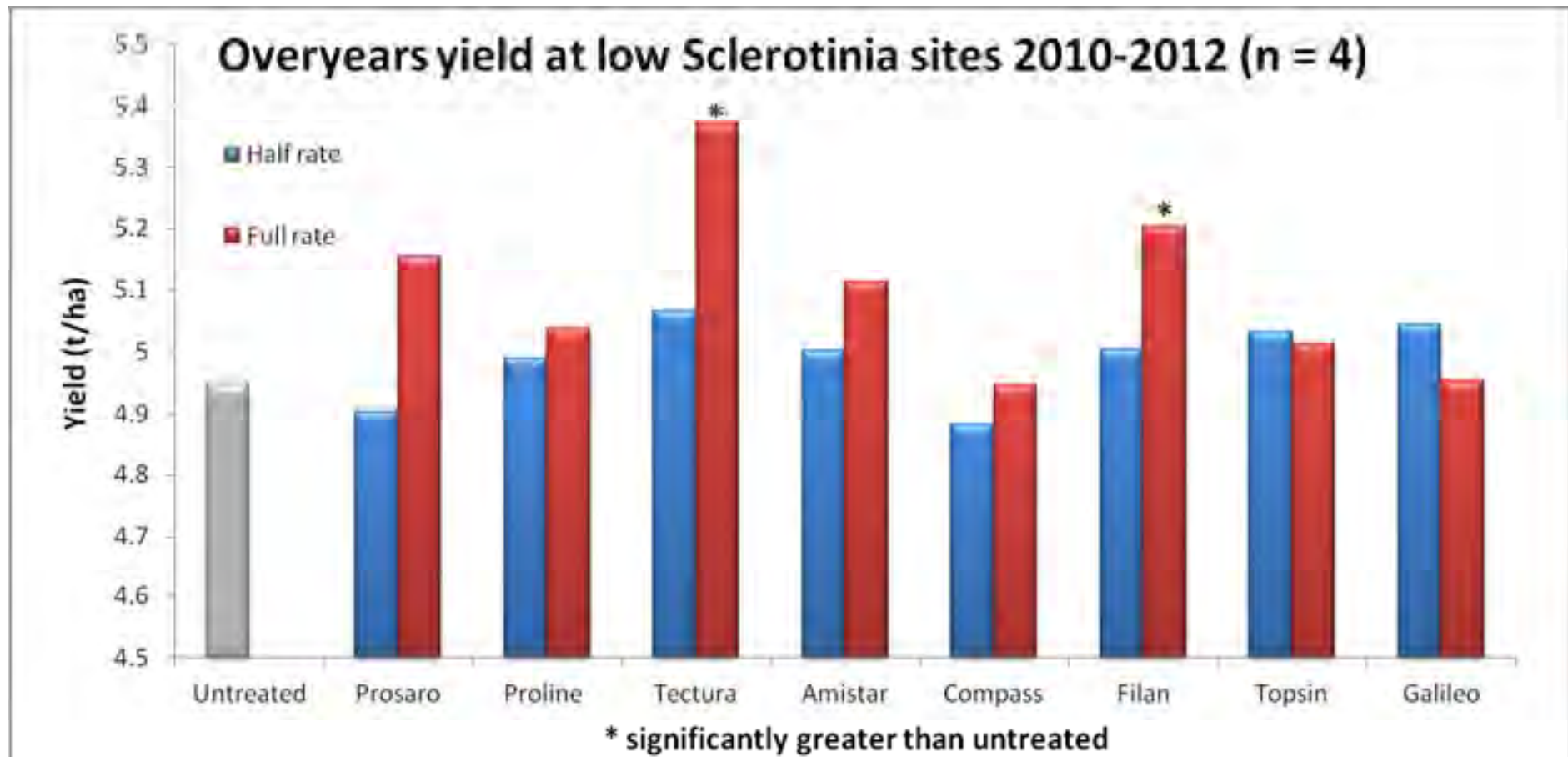
- only late infection was controlled



Multiple infection events during flowering - sprayed 12 May Herefordshire site 2012



Positive yield effects at sites with very low levels sclerotinia - pgr and drought factors?



Sclerotinia control summary



- A wide range of different fungicides
- Product choice and dose important at high disease pressure
- Assume products give 3 weeks protection
- Two sprays required to protect crops during flowering at high risk sites
- Fungicide resistance threat - do not use single active ingredients more than once