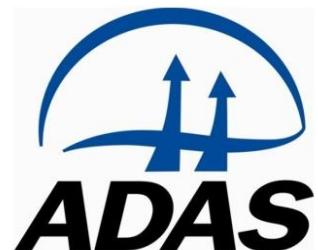


# Fungicide Performance in Wheat 2011 - 2012



# New fungicide approved

## **Adexar**

62.5g/l fluxapyroxad (Xemium) + 62.5g/l epoxiconazole

Approved for use in wheat, barley, oats, rye and triticale.

**Adexar** has been tested in HGCA wheat and barley trials since 2009.

Full label rate of 2.0l/ha

## **Succinate Dehydrogenase Inhibitors (SDHI's)**

- isopyrazam, bixafen and fluxapyroxad are a new generation of SDHIs.

# A new mode of action for foliar disease control

## Succinate Dehydrogenase Inhibitors (SDHI's)

- Single site mode of action.
- Rated moderate to high risk of resistance by FRAC.
- Should only be used in mixtures with active partners such as azoles.

Active	mixed with:	Product name	Registered
boscalid	epoxiconazole	Tracker, Enterprise	2003
bixafen	prothioconazole	Aviator (Xpro range)	2010
isopyrazam	epoxiconazole	Seguris	Feb 2011
fluxapyroxad	epoxiconazole	Adexar	Oct 2011

# The Sites 2011

1	ADAS (Rosemaund)	<i>Septoria tritici</i> (5 spray timings)
2	NIABTAG (Andover)	<i>Septoria tritici</i> (double trial)
3	SAC (Fife)	<i>Septoria tritici</i> (double trial)
4	ADAS (Terrington)	Yellow rust
5	NIABTAG (Cambridge)	Brown rust
6	SAC (Fife)	Mildew
7	Teagasc (Carlow)	<i>Septoria tritici</i>

# HGCA Fungicide Performance - *Septoria tritici*

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A severe test of product efficacy

- Single application (at either T1 or T2)
- High risk sites.
- Disease susceptible varieties
- 4 application rates (0.25, 0.5, 1.0 and 2.0 x full label rate)

Each leaf layer was assessed and categorised as

- Eradicant,
- Protectant,

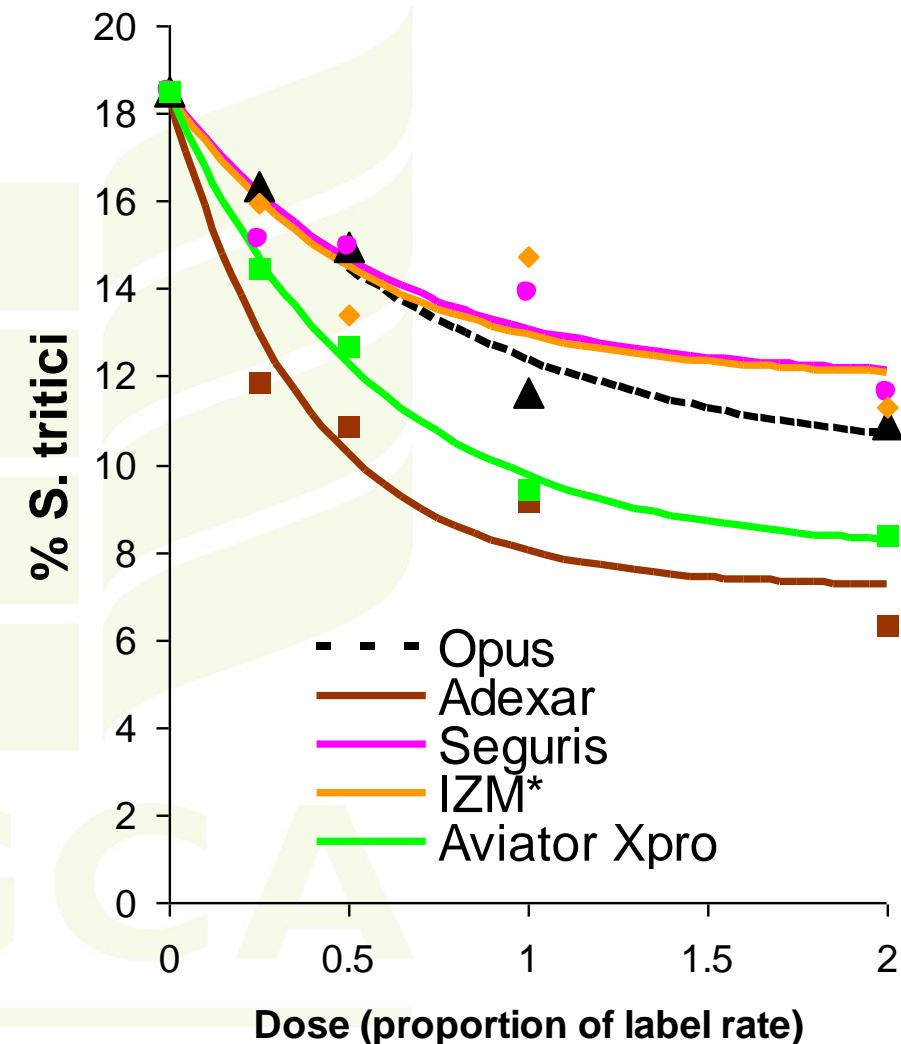
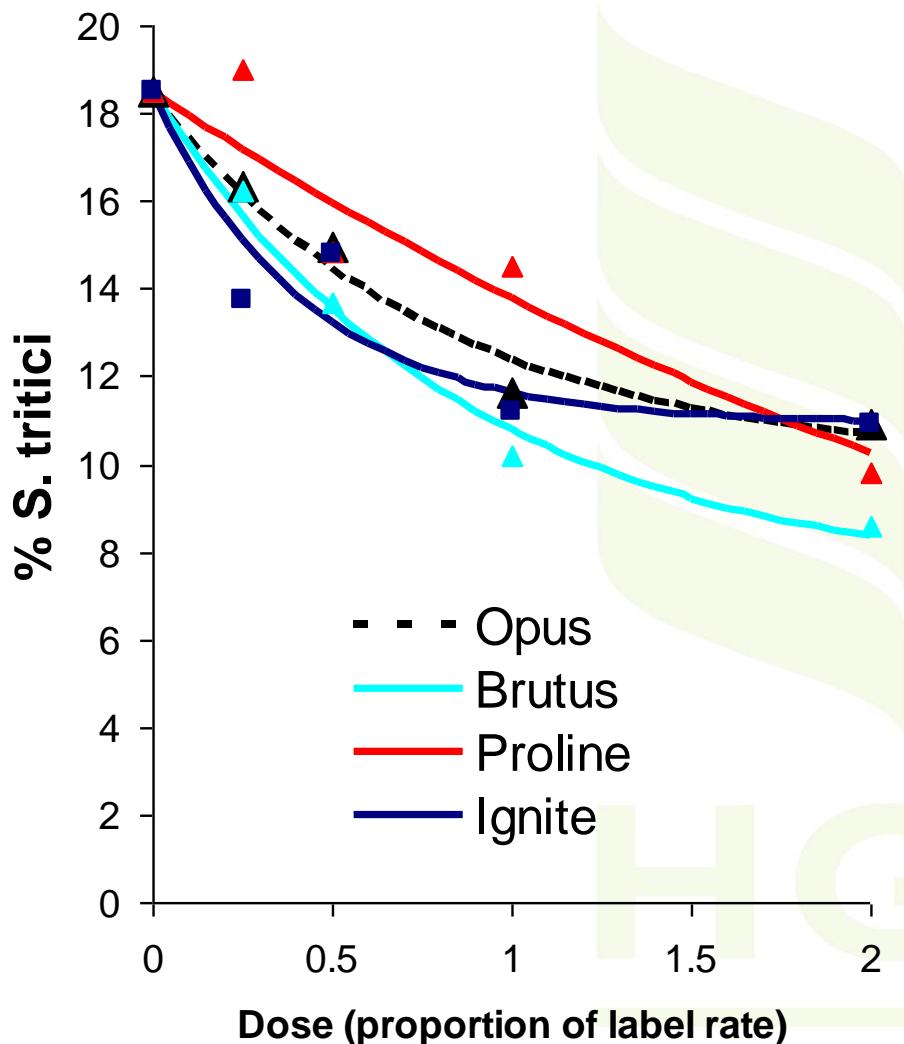
Septoria data is the mean of 4 sites (6 trials)

# Dose rate response data from 2011

	Application timing (dose rate)	S. tritici Eradicant	S. tritici Protectant	Yellow Rust	Brown Rust	Powdery Mildew
Rosemaund	GS 39	✓	✓			
Andover T1	22 Apr – GS32	✓	✓			
Andover T2	13 May – GS39	✓				
Fife T1	25 May – GS36-39	✓	✓			
Fife T2	30 May – GS39	✓	✓			
Teagasc	6 May – GS32	✓	✓			
Terrington	GS 39			✓		
Fife (mildew)	GS 32					
Cambridge	GS39					

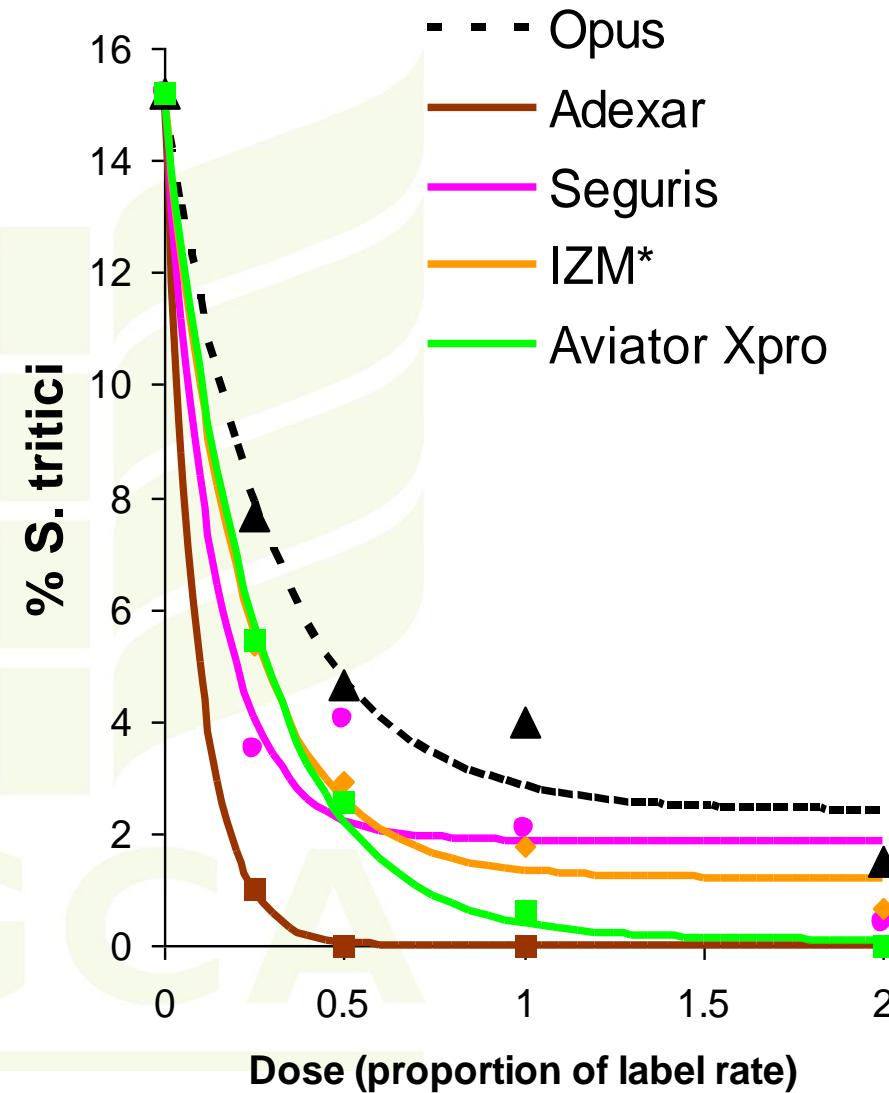
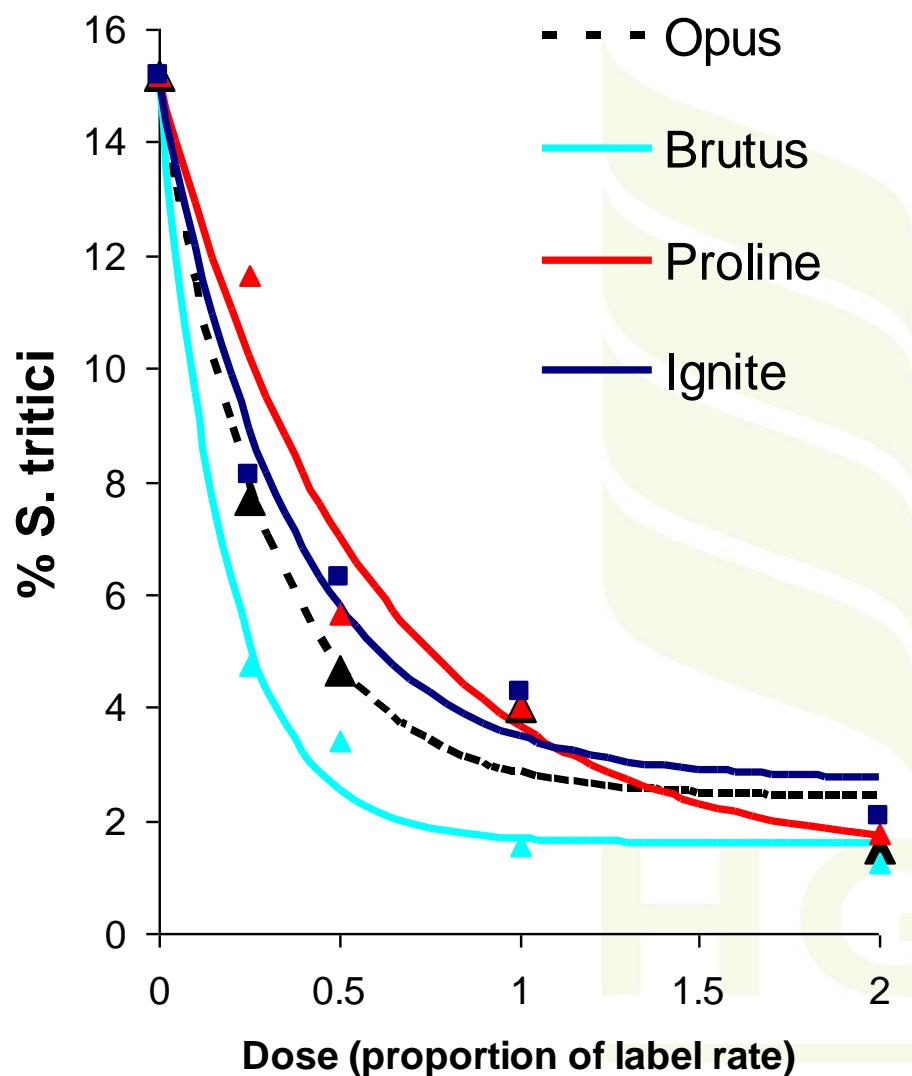
# Eradicant data 2011 - Over trials analysis n=5

(Aviator Xpro 225 and 235 combined)



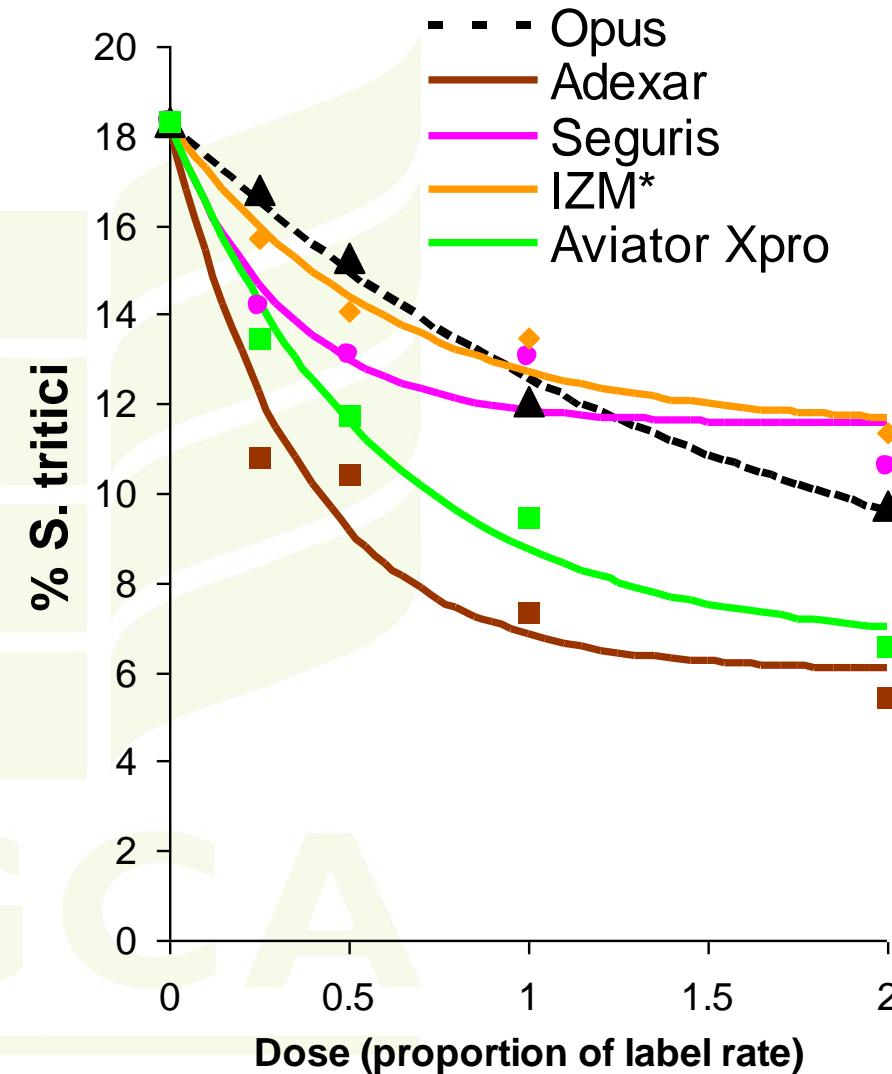
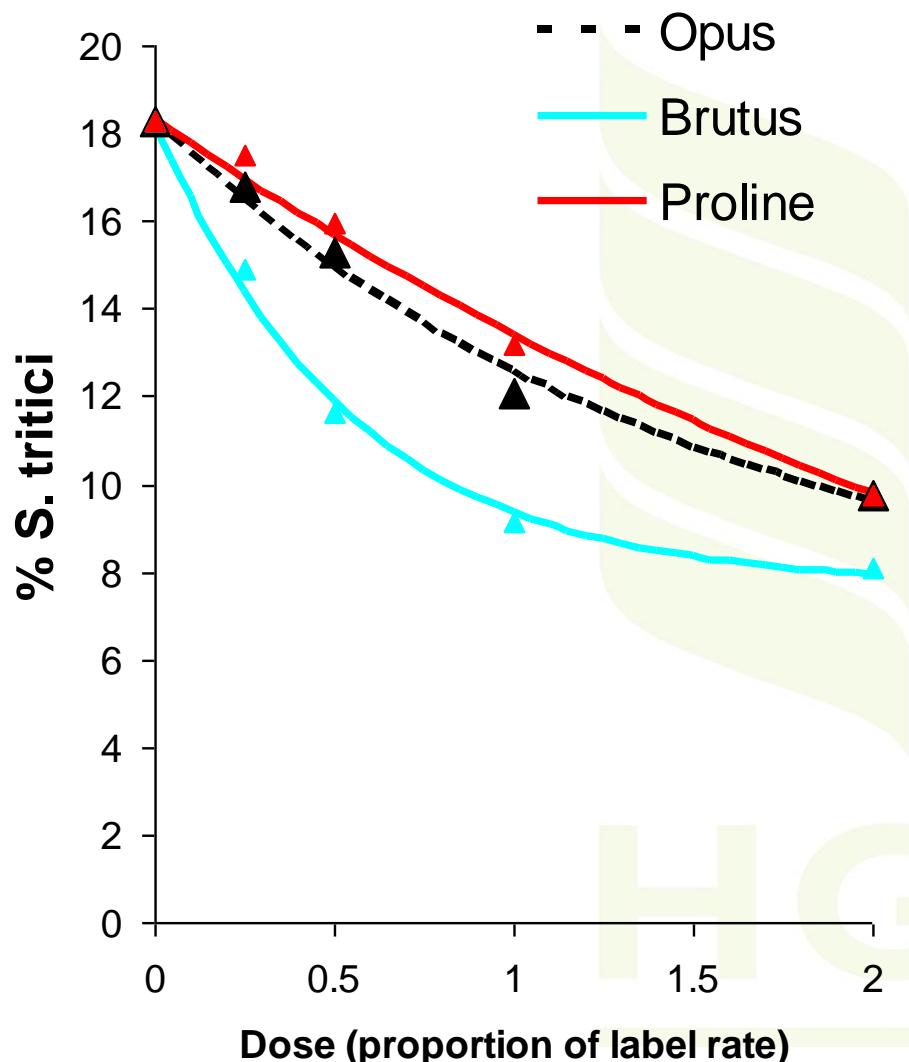
\*Only available in mixtures

# Protectant data 2011 - Over trials analysis (n=5)



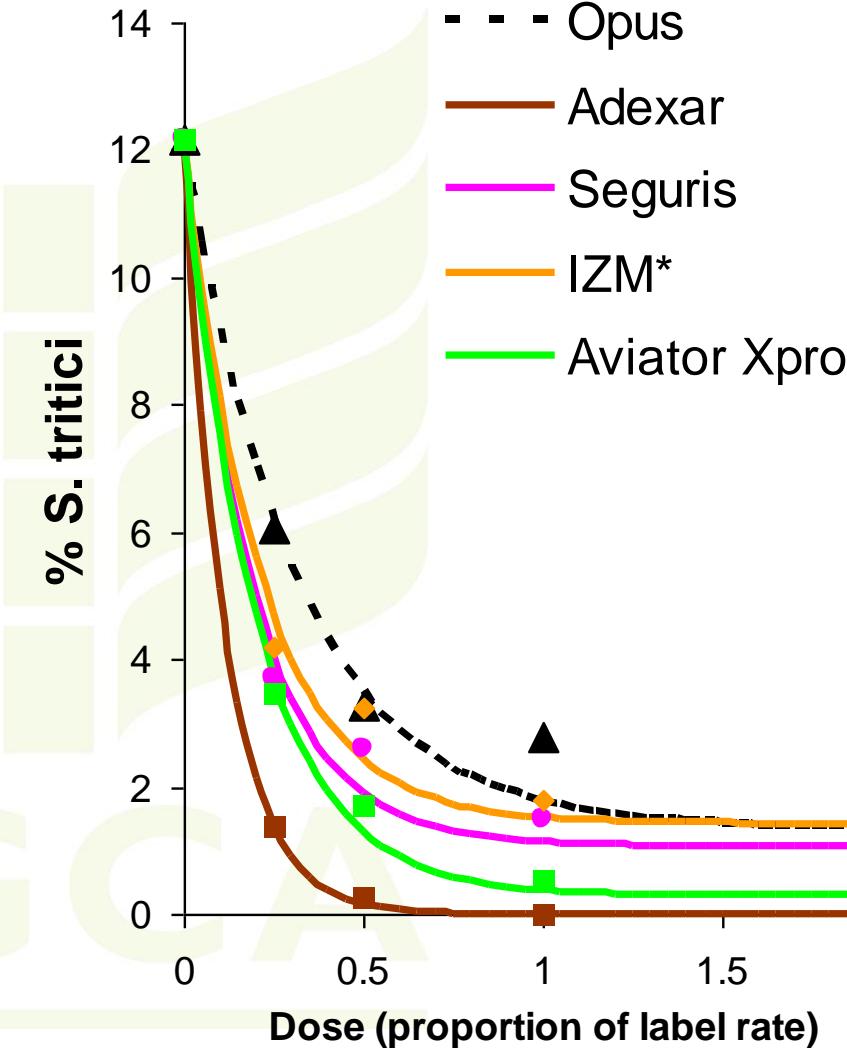
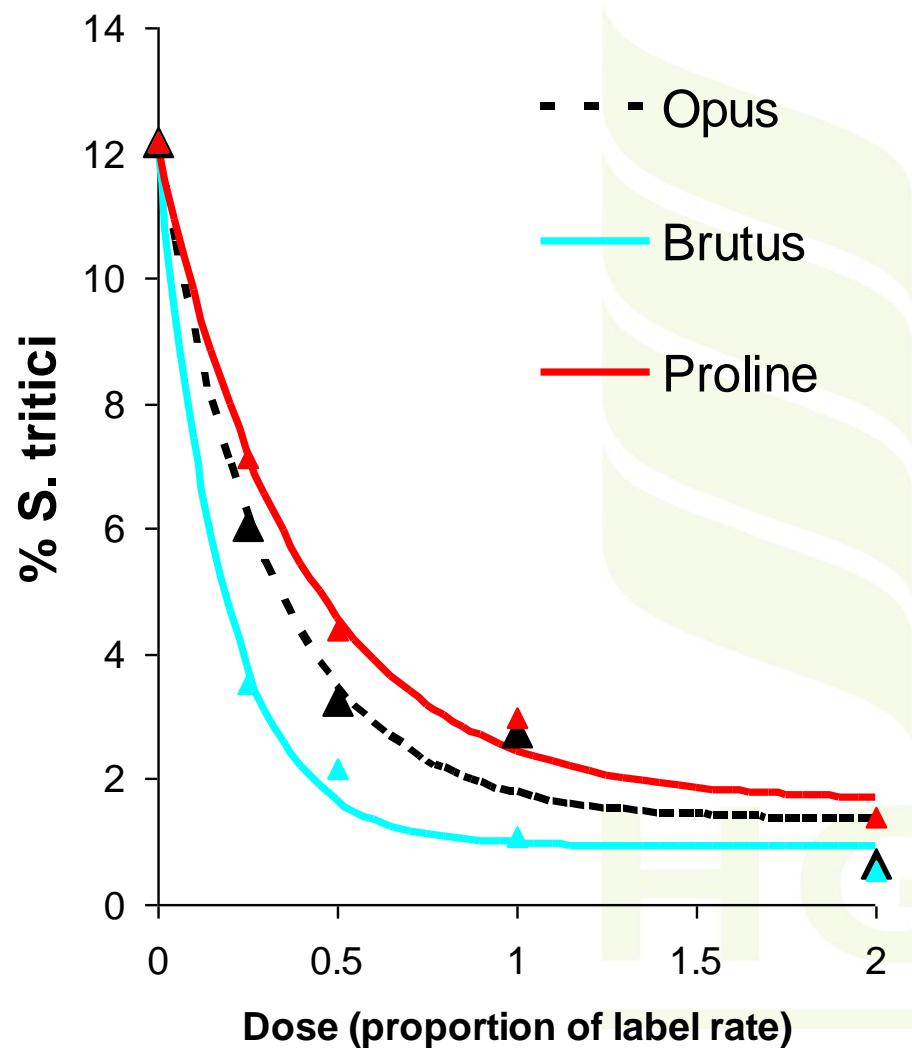
\*Only available in mixtures

# Eradicant data 2009-2011 - Over seasons analysis (n=13)



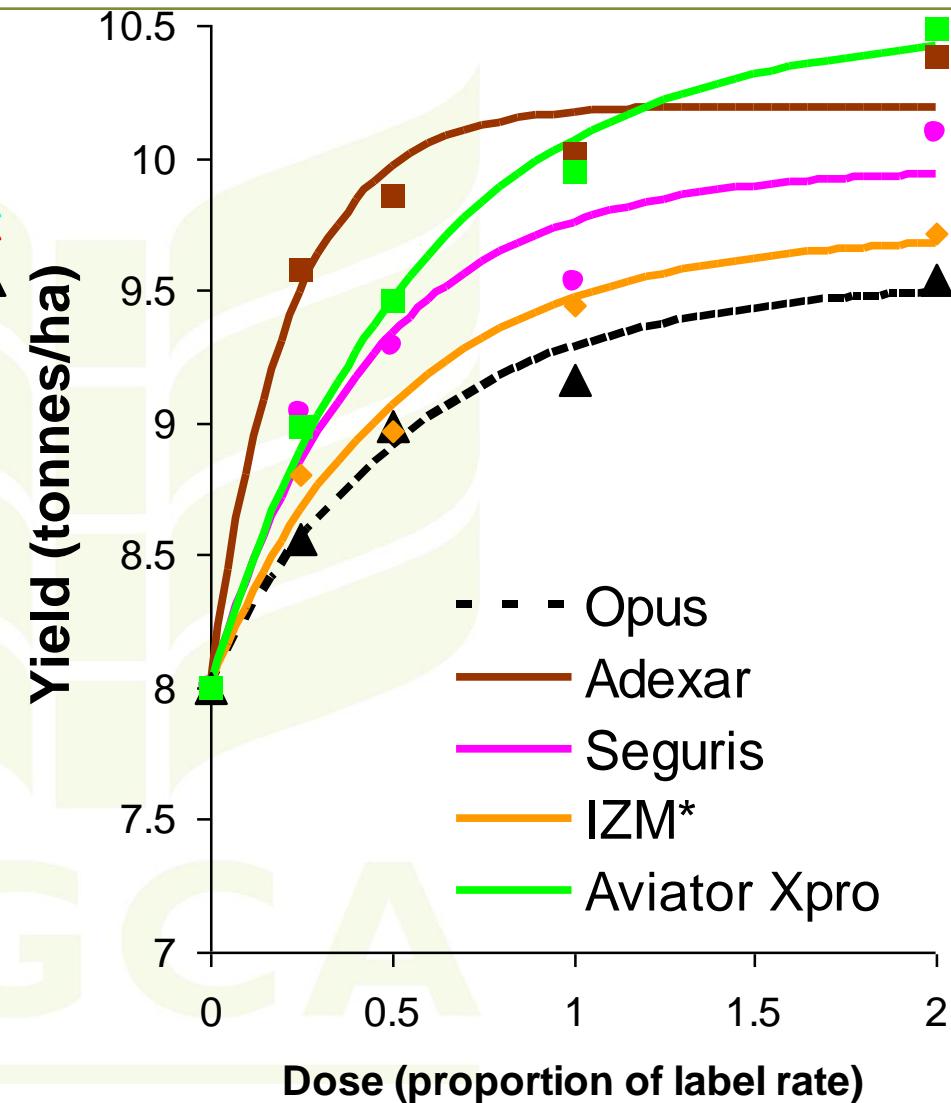
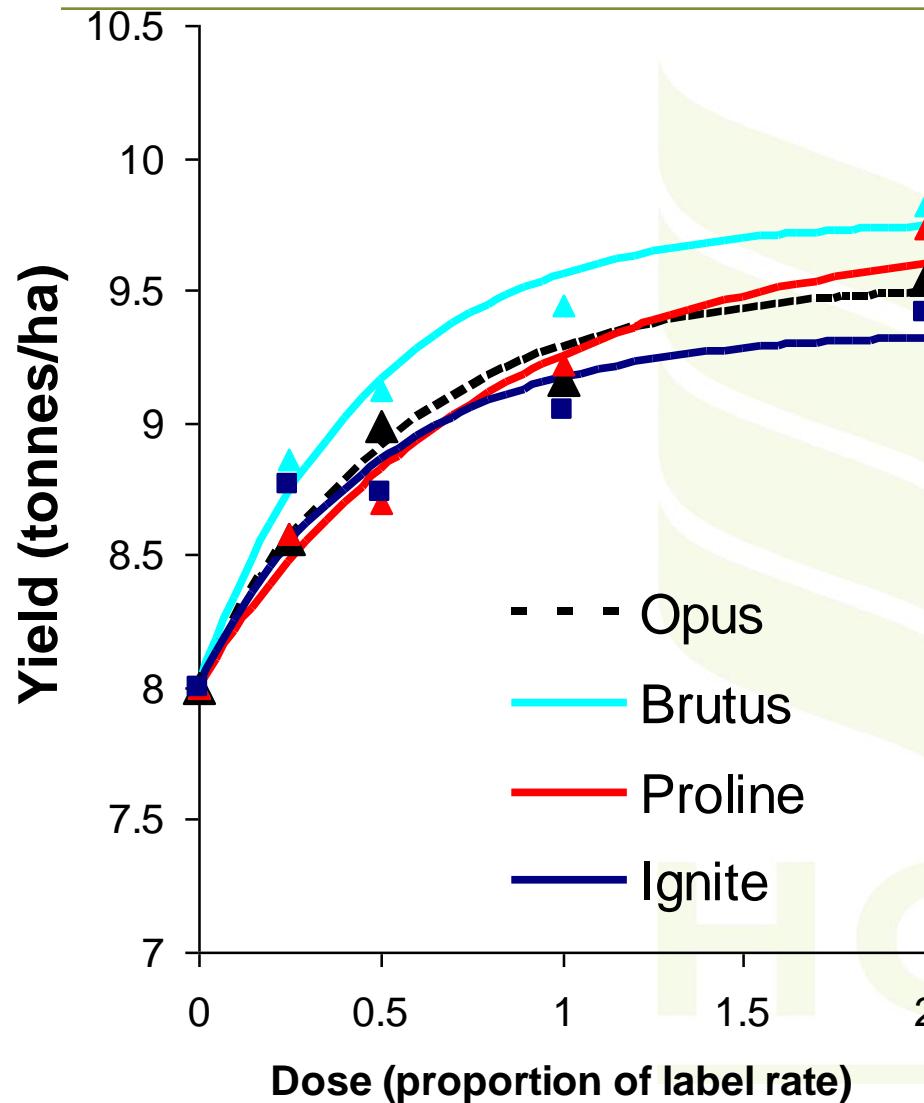
\*Only available in mixtures

# Protectant data 2009-2011 - Over seasons analysis (n=17)



\*Only available in mixtures

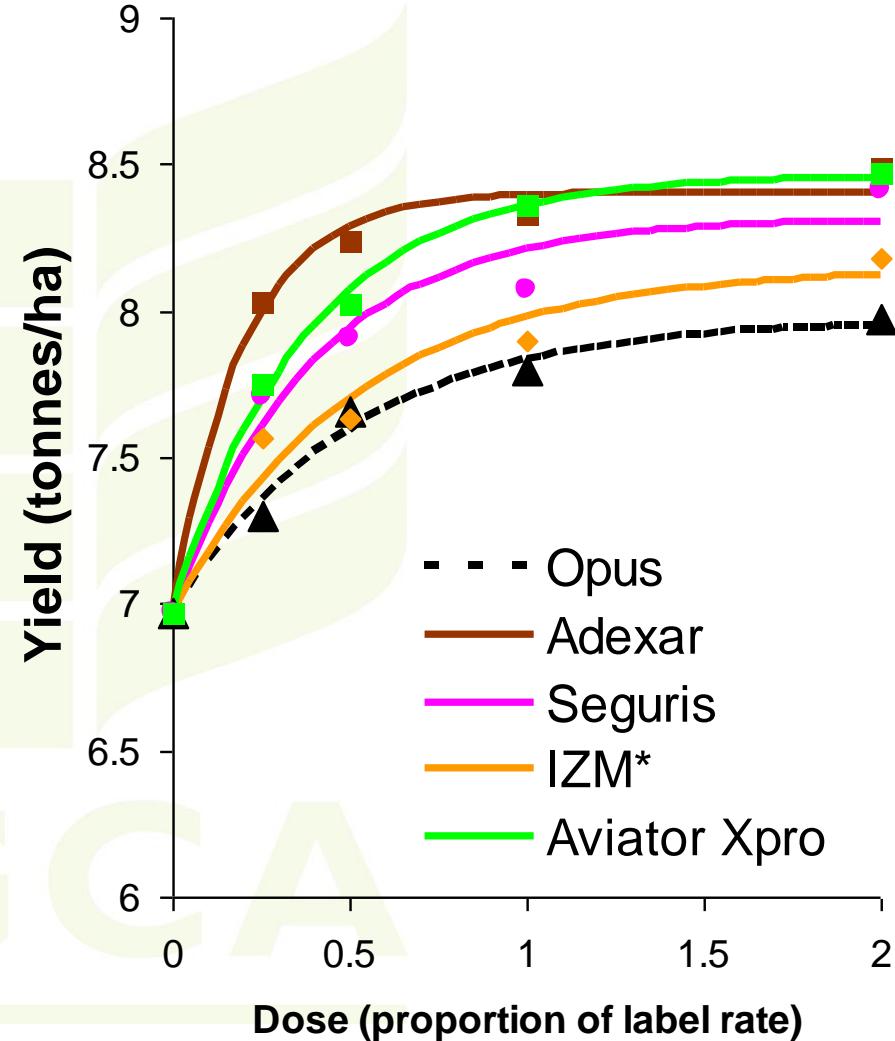
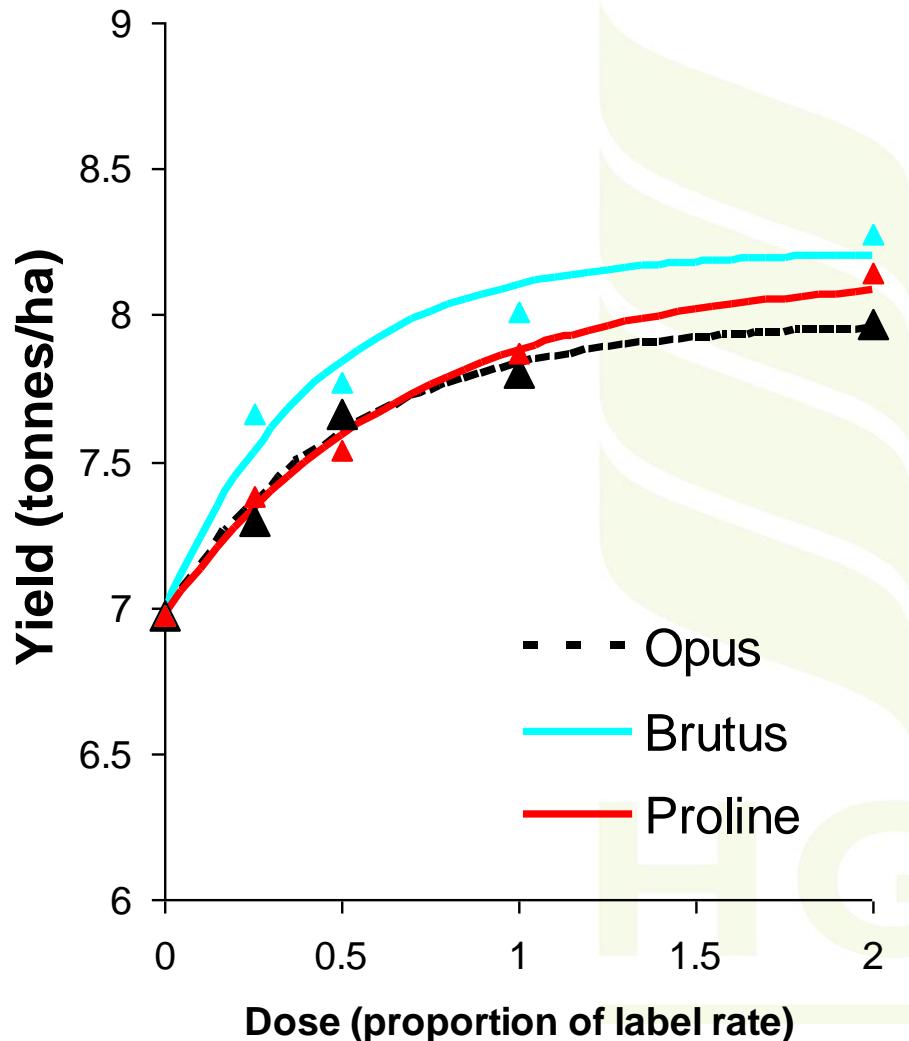
# Yield data 2011 - Over trials analysis (n=6)



\*Only available in mixtures

# Yield data 2009-2011 - Over trials analysis (n=17)

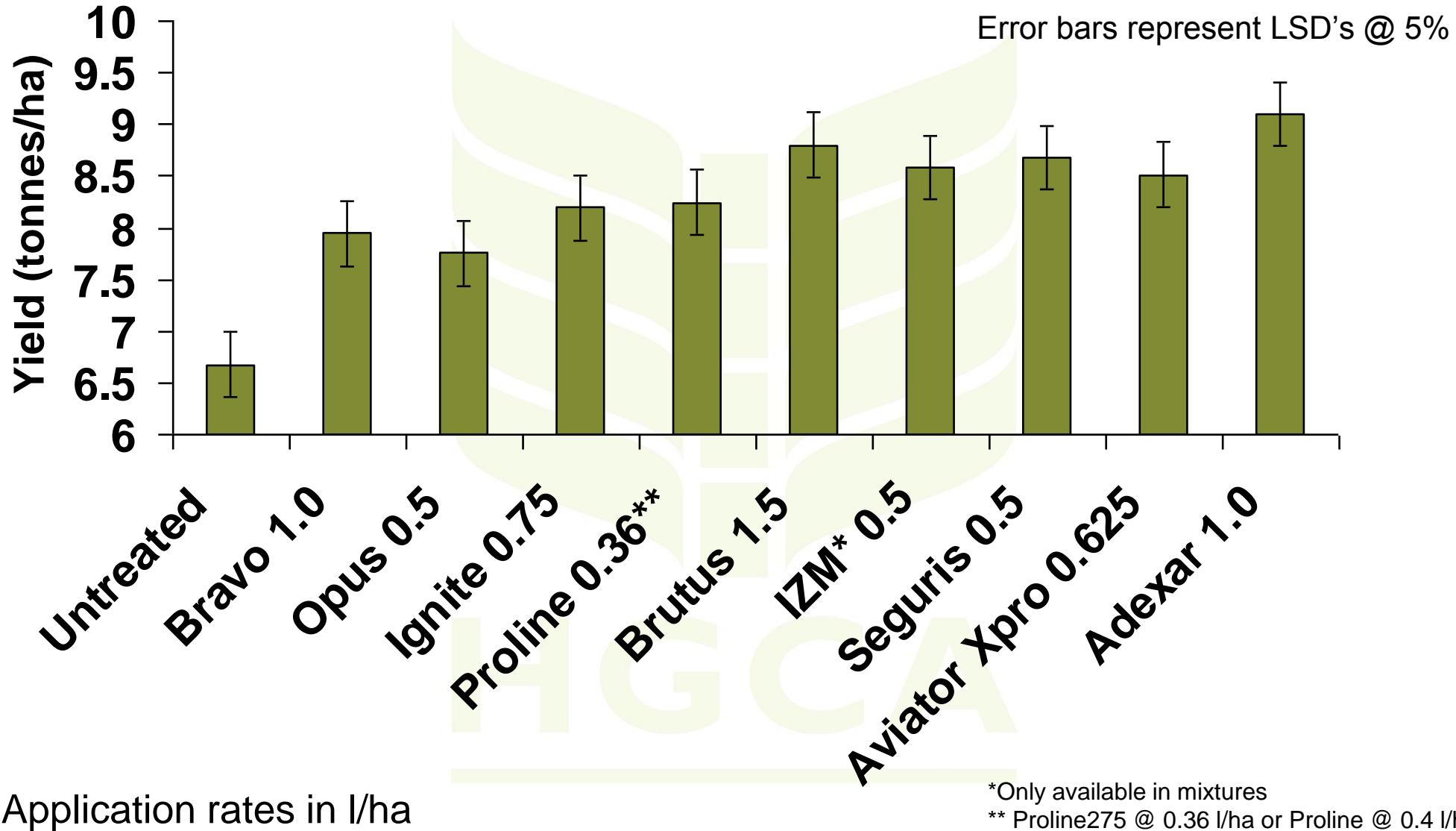
(Aviator Xpro 225 and 235 combined)



\*Only available in mixtures

# Yields 2011 - Septoria sites

## T1 and T2 applications - 0.5 rate (n=3)



# Late season control - SDHI / azole mixtures stood out

Herefordshire - 2 July 7 weeks after GS39 application



Untreated



Ignite 1.5



Adexar 2.0



# Differences between SDHI / azoles were smaller

Herefordshire - 2 July 7 weeks after GS39 application



**Aviator Xpro 1.25**



**Seguris 1.0**



**Adexar 2.0**



# Yellow rust

Last season

- cold winter checked disease,
- significant epidemic still occurred

Optimal conditions 16 degrees C.

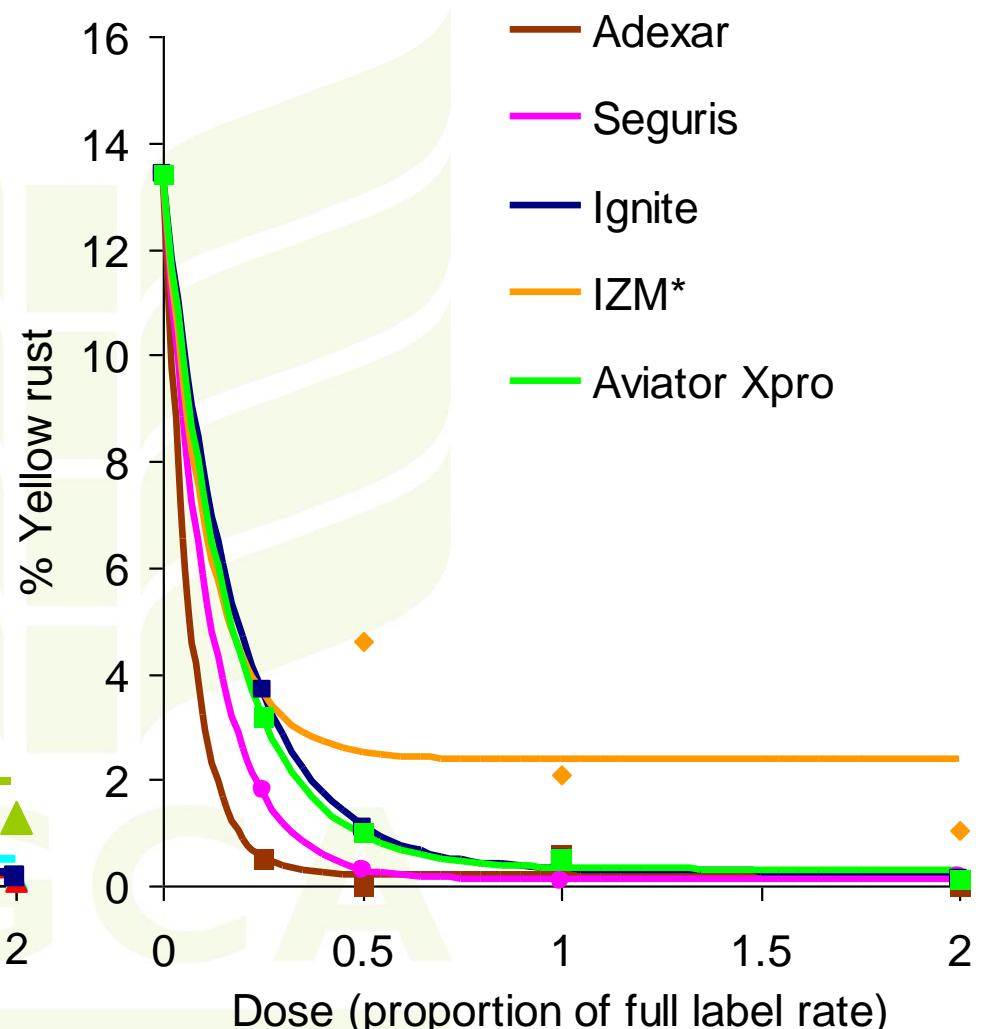
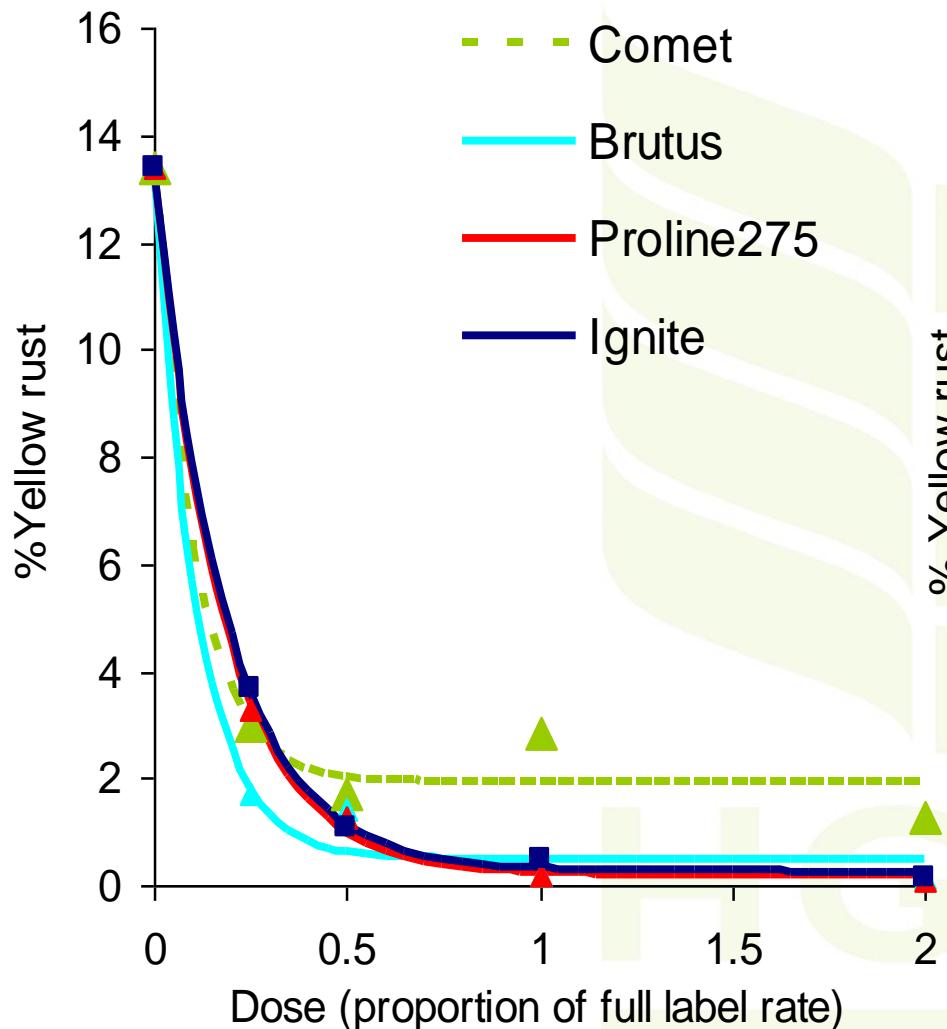
Foci in some crops this autumn

Susceptible varieties include:

Gallant, Solstice,  
Ketchum, Torch,  
Santiago, Duxford,  
Oakley, Robigus,

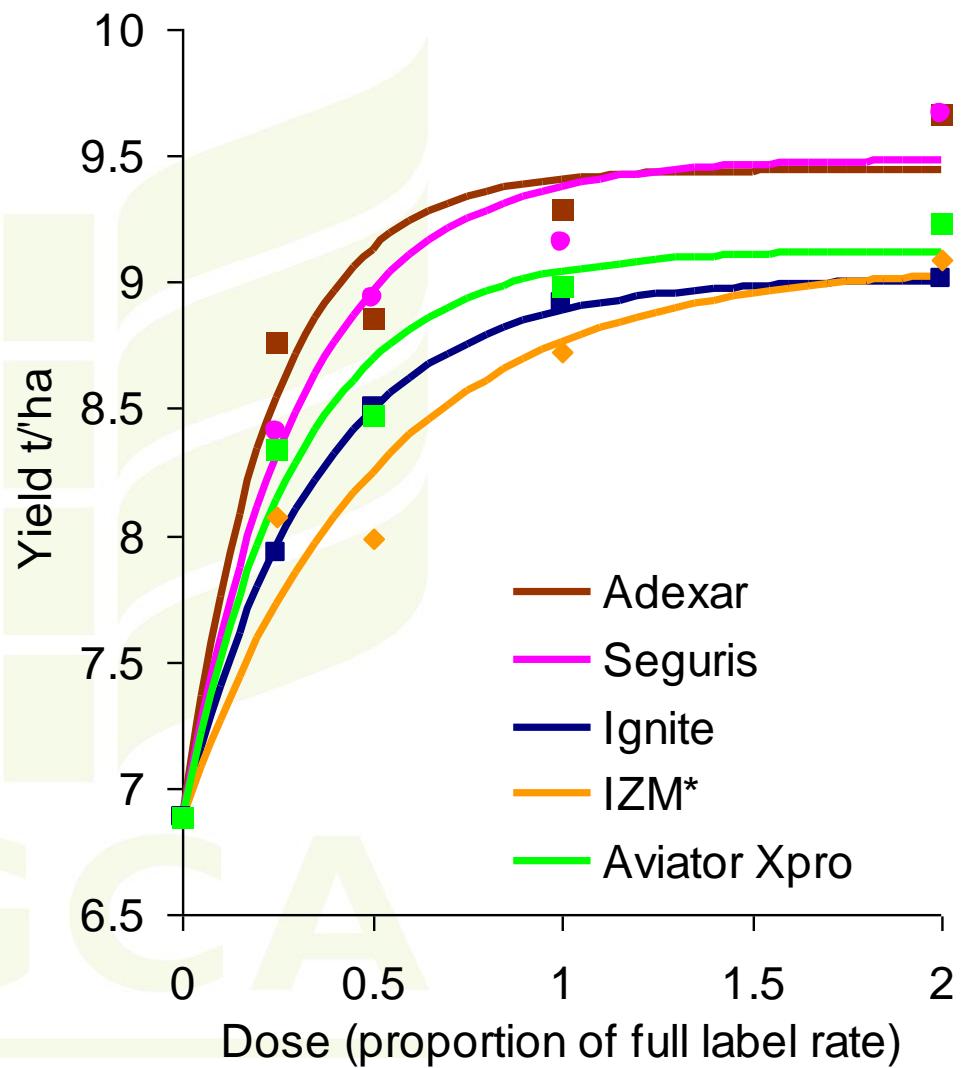
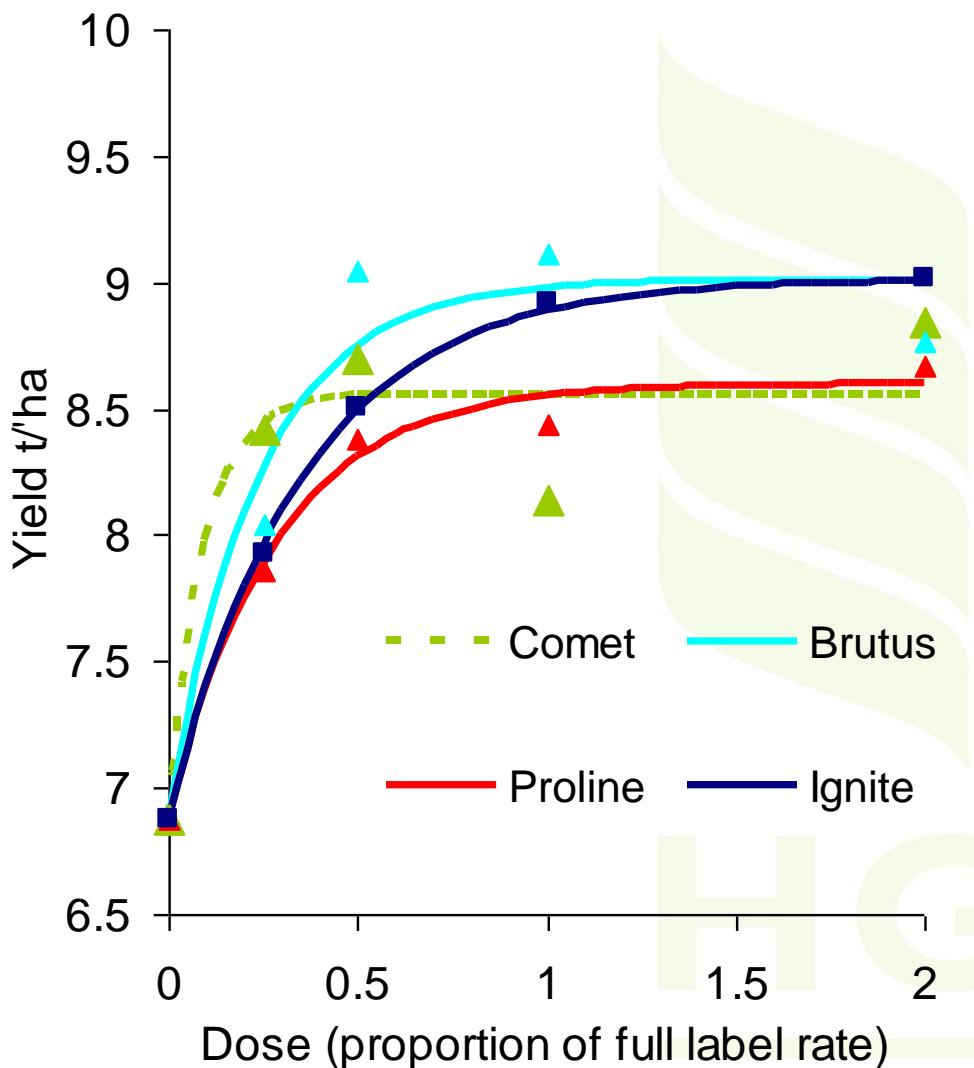


# Yellow Rust – Terrington 2011



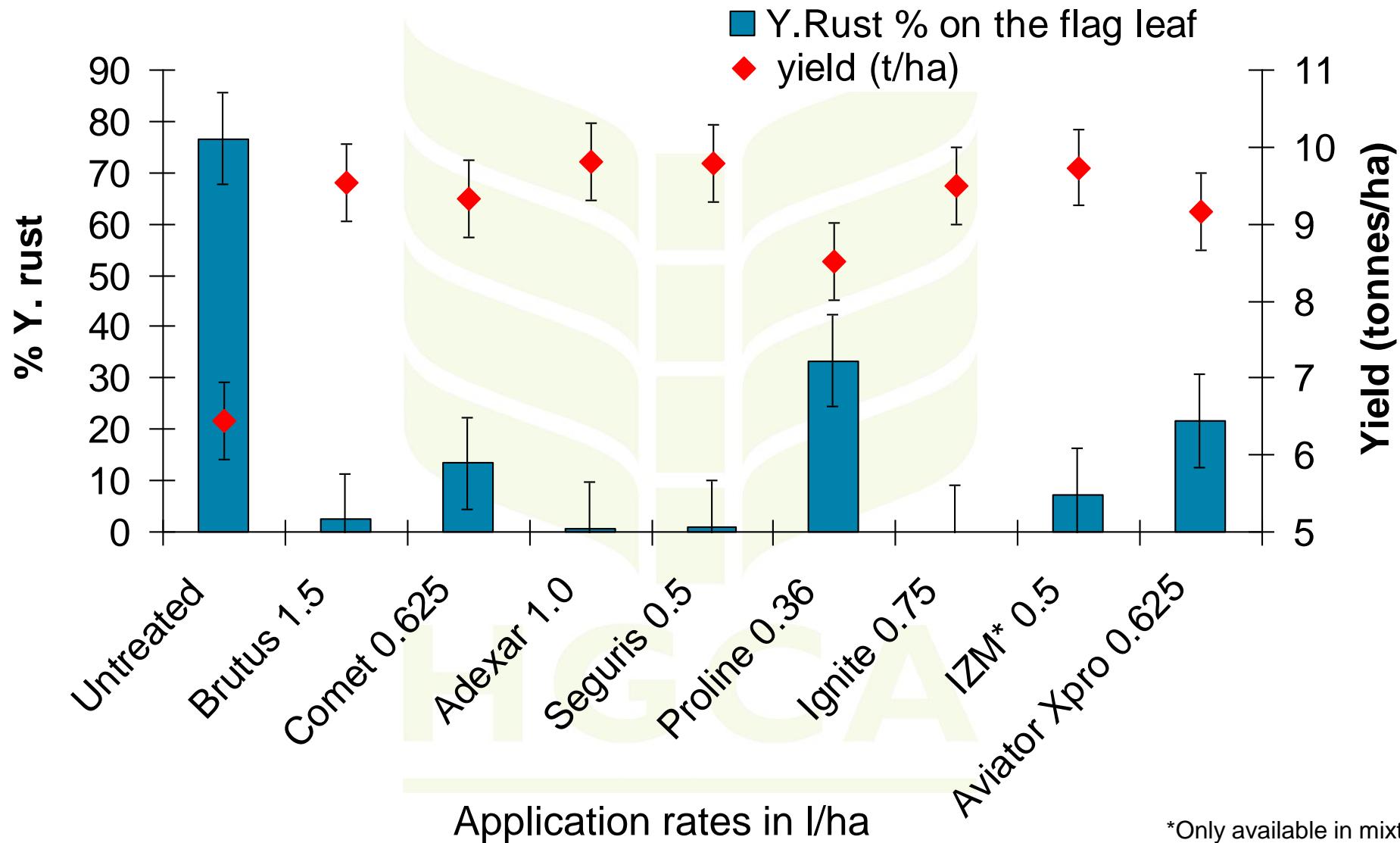
\*Only available in mixtures

# Yellow Rust – yield (t/ha) – Terrington 2011



\*Only available in mixtures

# Yellow Rust – Terrington 2011



# Brown rust 2012 – high risk season?

**2007/08 - Last a major outbreak due to mild winter / spring**

**2011 - Already present in some crops**

Oct – 2 degrees above average

Nov – 2 – 2.5 degrees above average

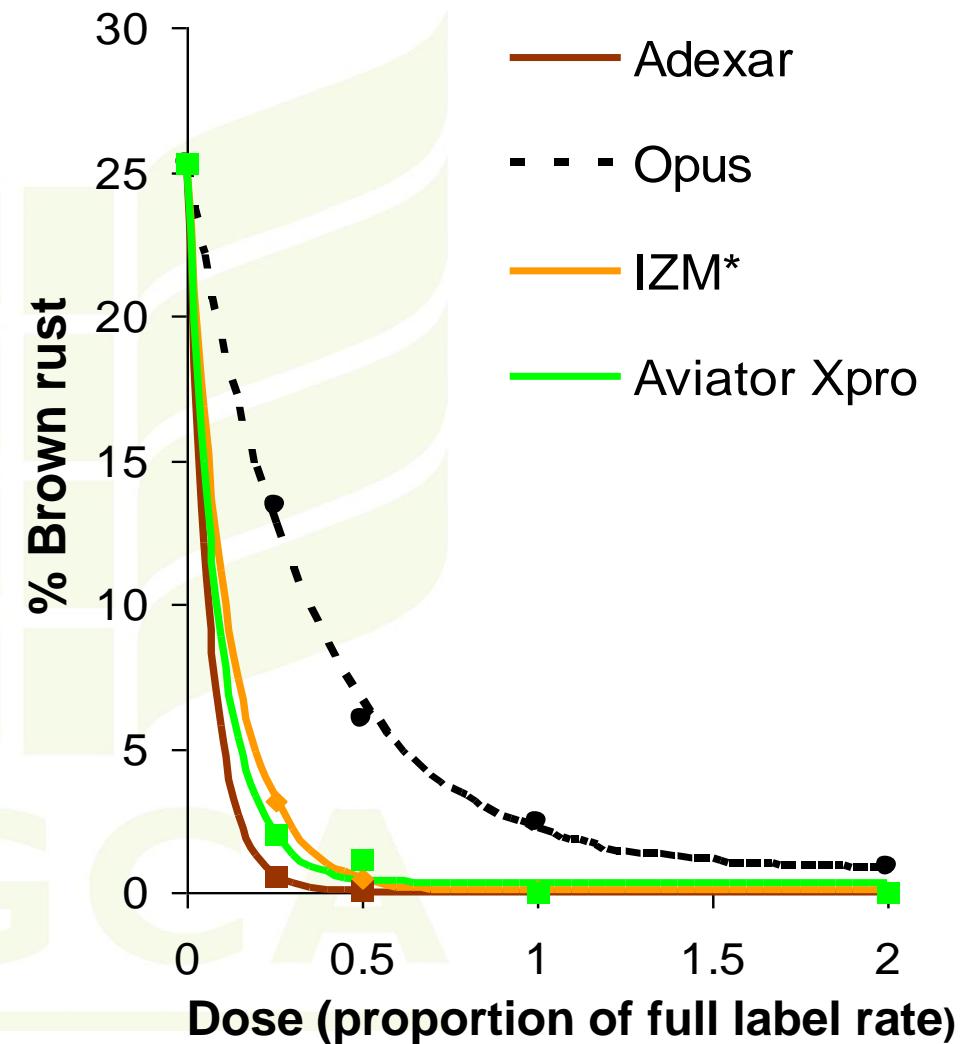
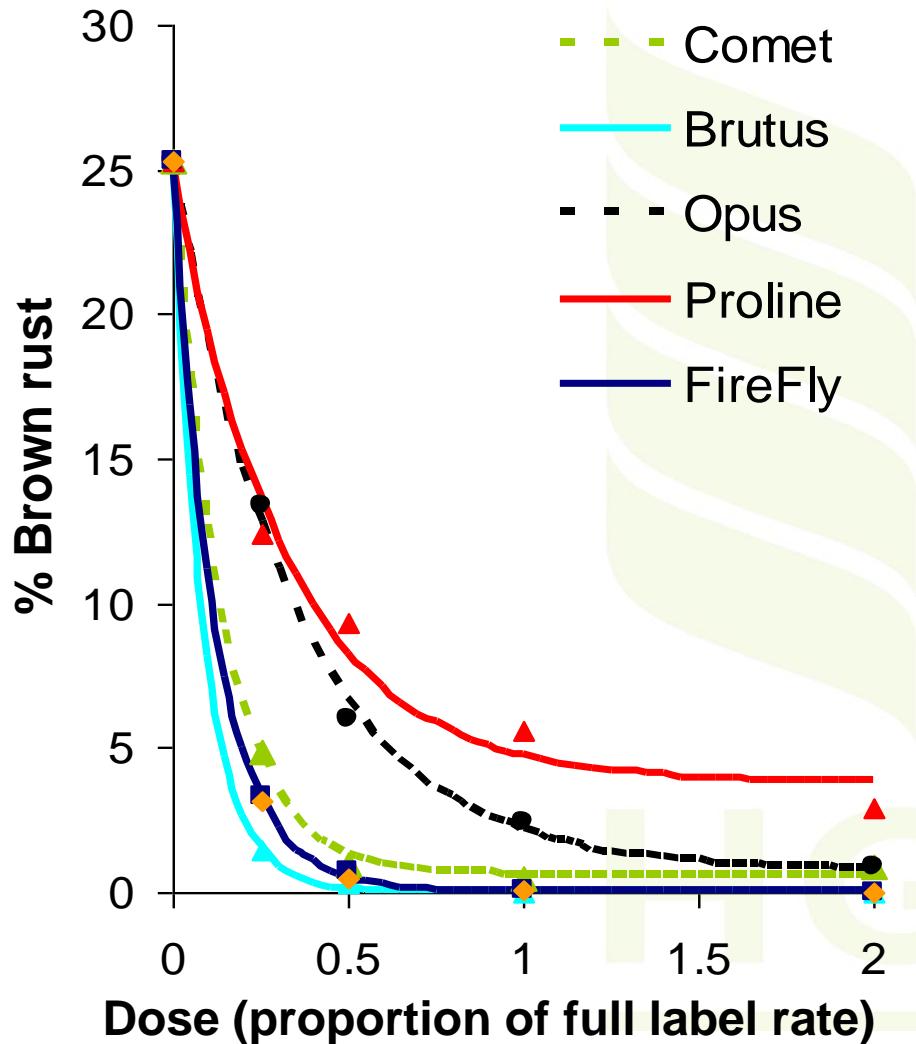
*Over 45% of RL varieties are susceptible (rated 5 or less) including:*

Cordiale,  
Grafton,  
JB Diego,  
Gallant,  
Alchemy  
Panorama

Solstice,  
Duxford,  
Santiago,  
Beluga  
Denman  
Einstein



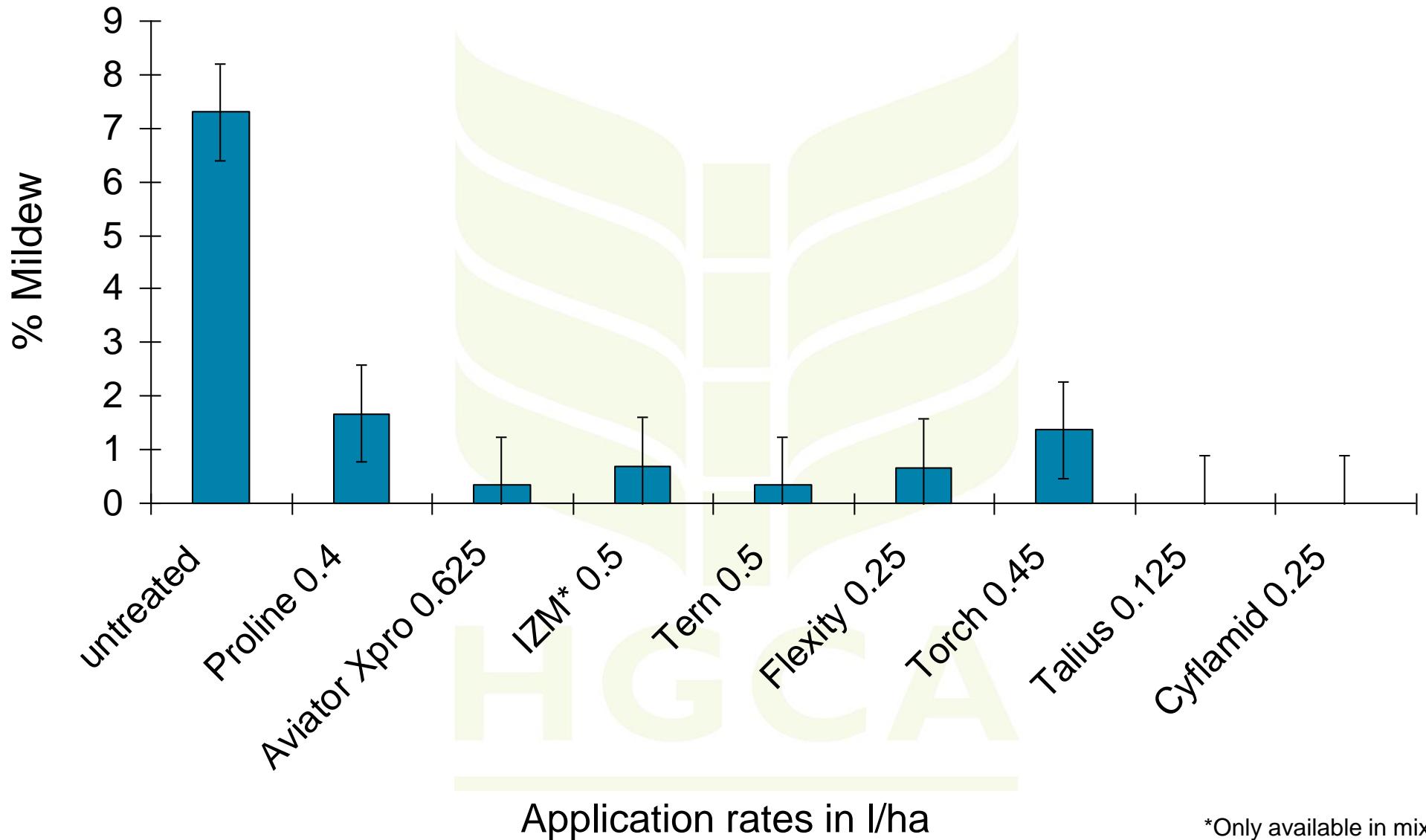
# Brown rust 2009 - application at leaf 1 emerged



\*Only available in mixtures

# SDHI's may add to powdery mildew control 2009

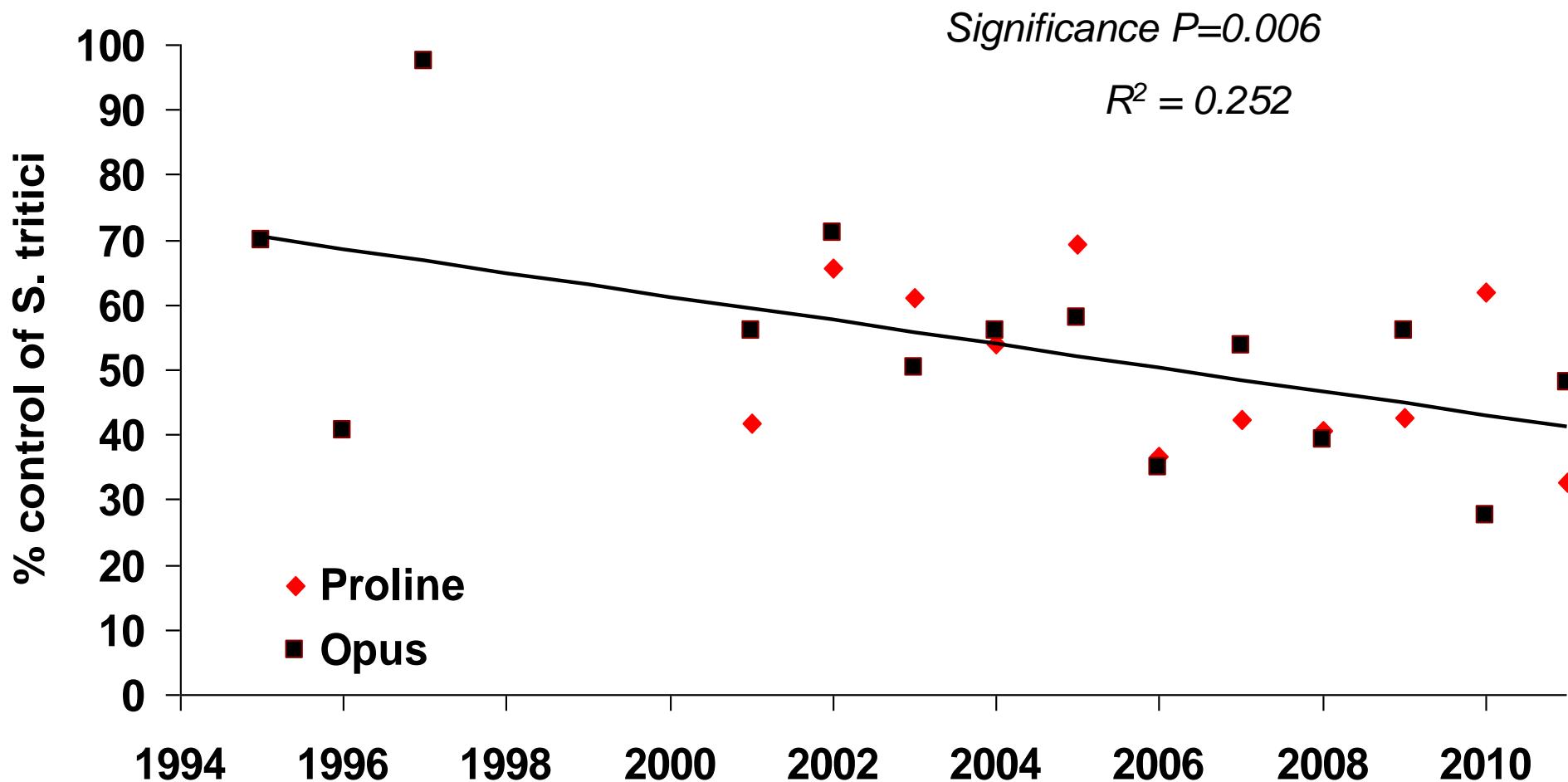
Half label rates at T1 and T2 timings



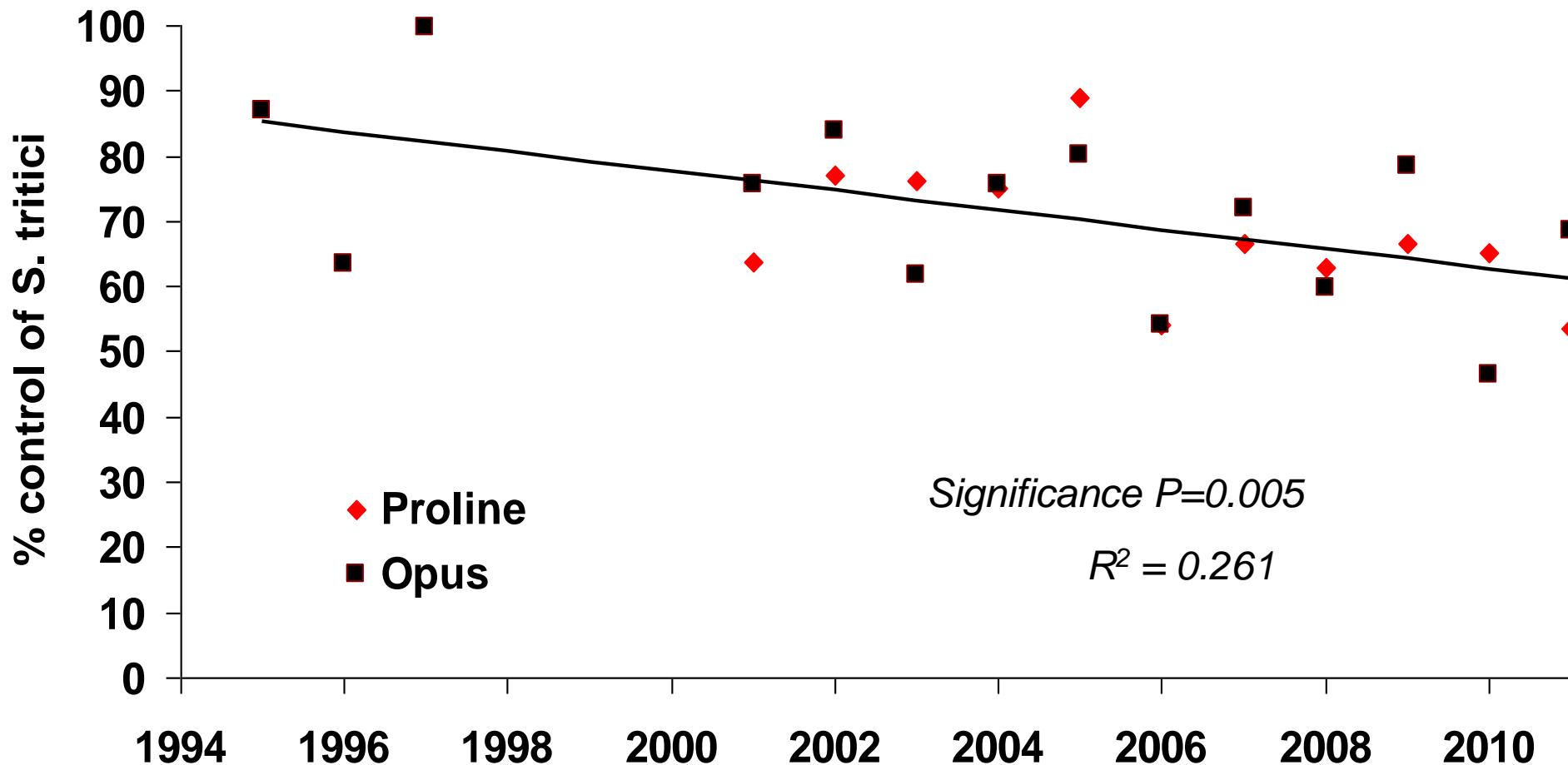
Application rates in l/ha

\*Only available in mixtures

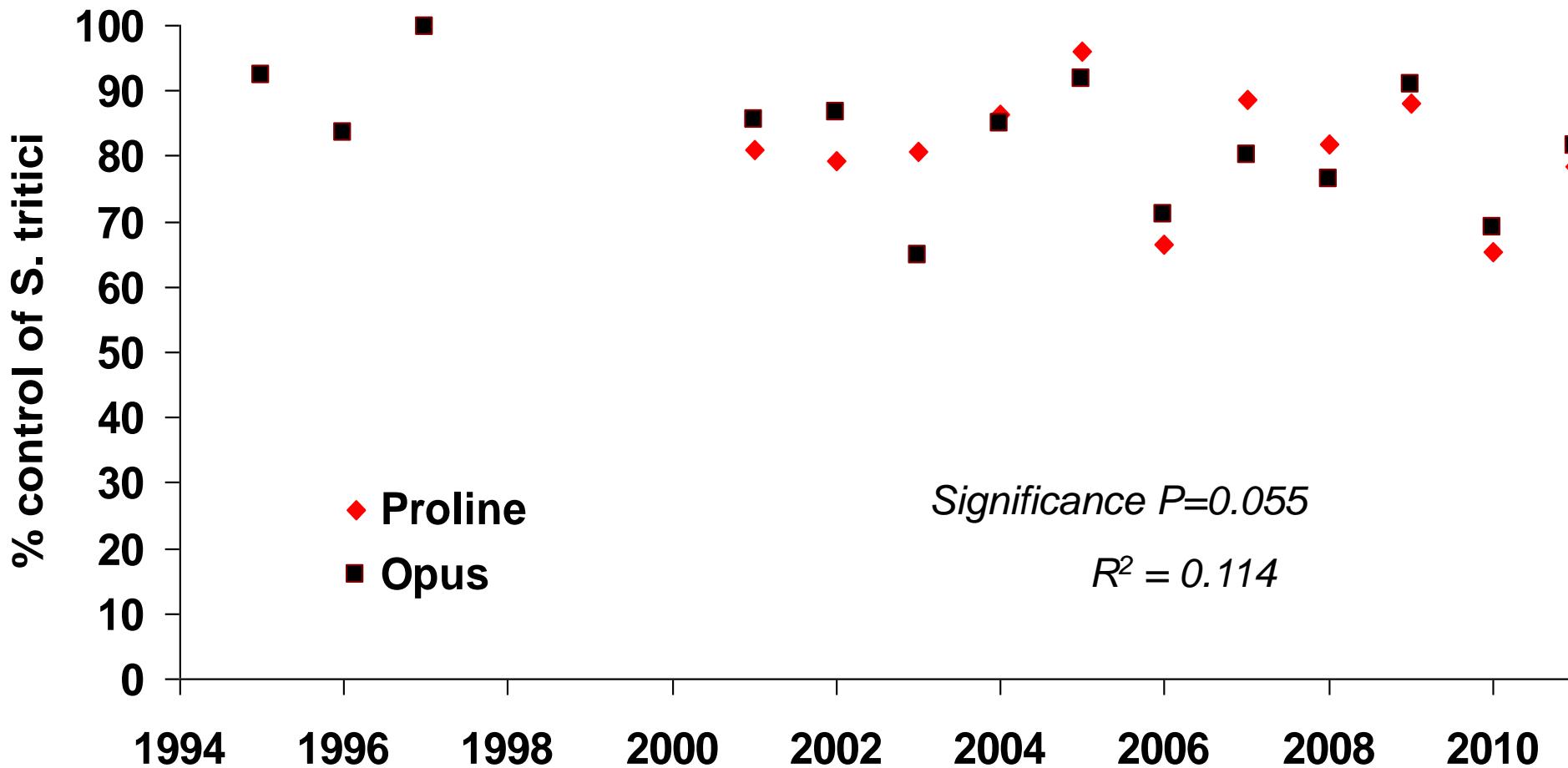
# Field performance of azoles over time - protectant situations at 0.25 of label rates



# Field performance of azoles over time - protectant situations at 0.5 of label rates



# Field performance of azoles over time - protectant situations at 1.0 of label rates



# Conclusions on wheat

## 2011 Season

Good Septoria tritici eradicant and protectant activity  
Some additional yellow rust data

## Over 3 seasons

All SDHI's tested added good S. tritici protectant activity to their azoles partners.

Adexar and Aviator Xpro showed excellent curative activity,  
compared to theirazole partners alone.

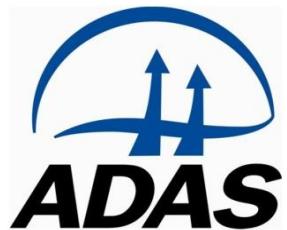
New SDHI / azole mixtures all contribute to the control of yellow  
and brown rust

## Since 1995

Field performance of azoles has gradually slipped  
Level of control achieved by 0.5 dose of azole in 2001, would  
require ~ 1.0 dose of azole in 2011.



# Fungicide Performance in barley 2011 - 2012



# Dose response data from 2011

HGCA FUNDED	Rhyncho	Net blotch	Brown rust	P. mildew	Ramularia
Lanark	✓			✓	
Midlothian		✓		✓	
Malton, N. Yorkshire		X			
Bleddfa, Powys	✓				
Morley, Norfolk		X			
Caythorpe, Lincs			X		
Midlothian	✓			✓	✓

## TEAGASC FUNDED

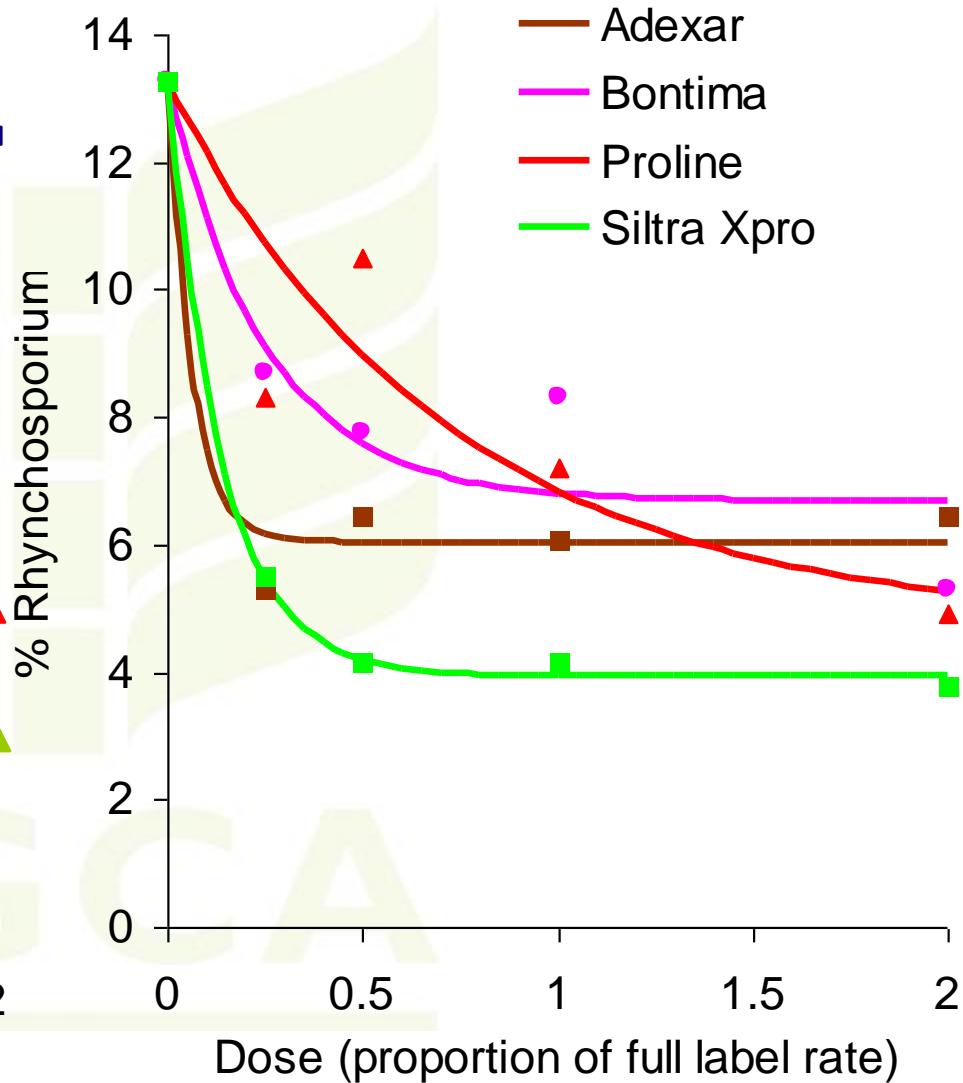
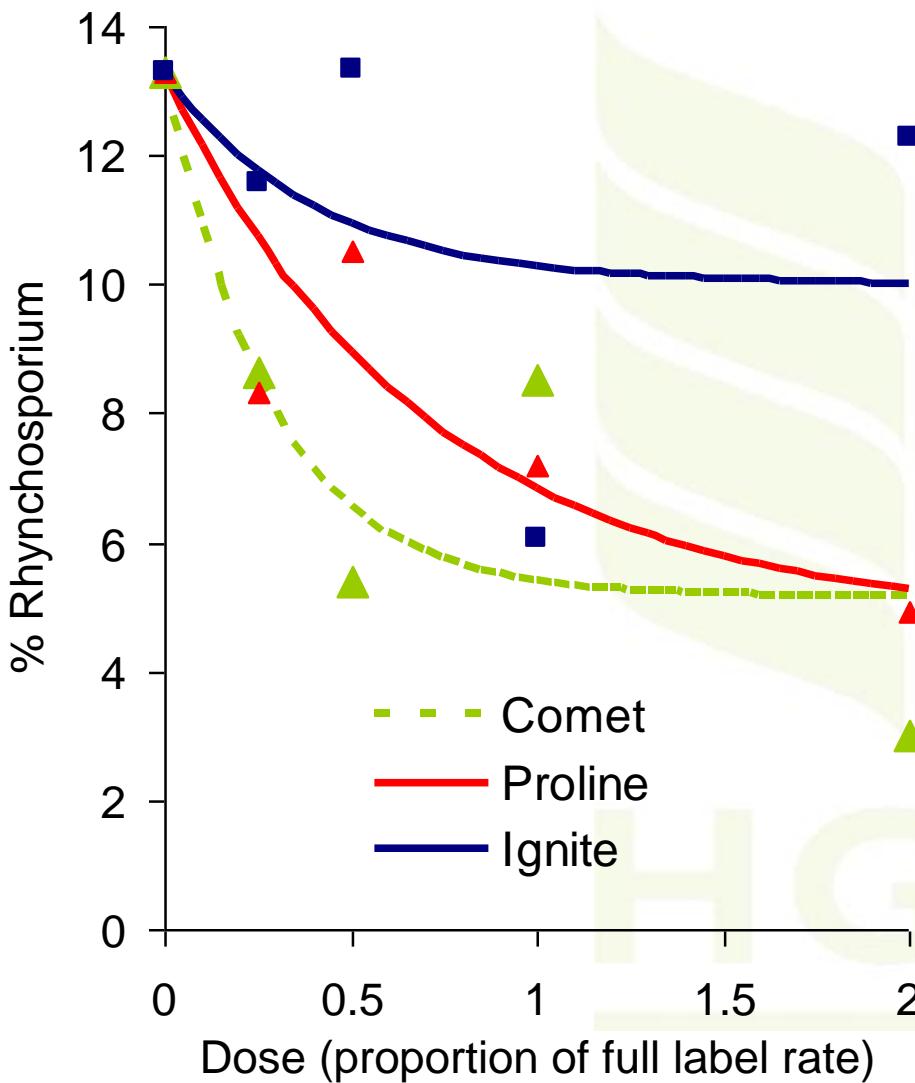
Carlow, Ireland	✓				
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# Barley treatments 2011

<b>Product</b>	<b>Active substances</b>	Rhyncho	Mildew	Brown Rust	Ramularia
Proline	prothioconazole	✓	✓	✓	✓
Comet	pyraclostrobin	✓	X	✓	X
Ignite	epoxiconazole	✓	X	✓	✓
Bontima	IZM + cyprodinil	✓	✓	✓	✓
IZM*	isopyrazam	✓	X	✓	✓
Siltra	bixafen + prothio	✓	✓	✓	✓
Adexar	epoxi + fluxapyroxad	✓	✓	✓	✓
Flexity	metrafenone	X	✓	X	X
Talius	proquinazid	X	✓	X	X
Torch Extra	spiroxamine	X	✓	X	X
Cyflamid	cyflufenamid	X	✓	X	X

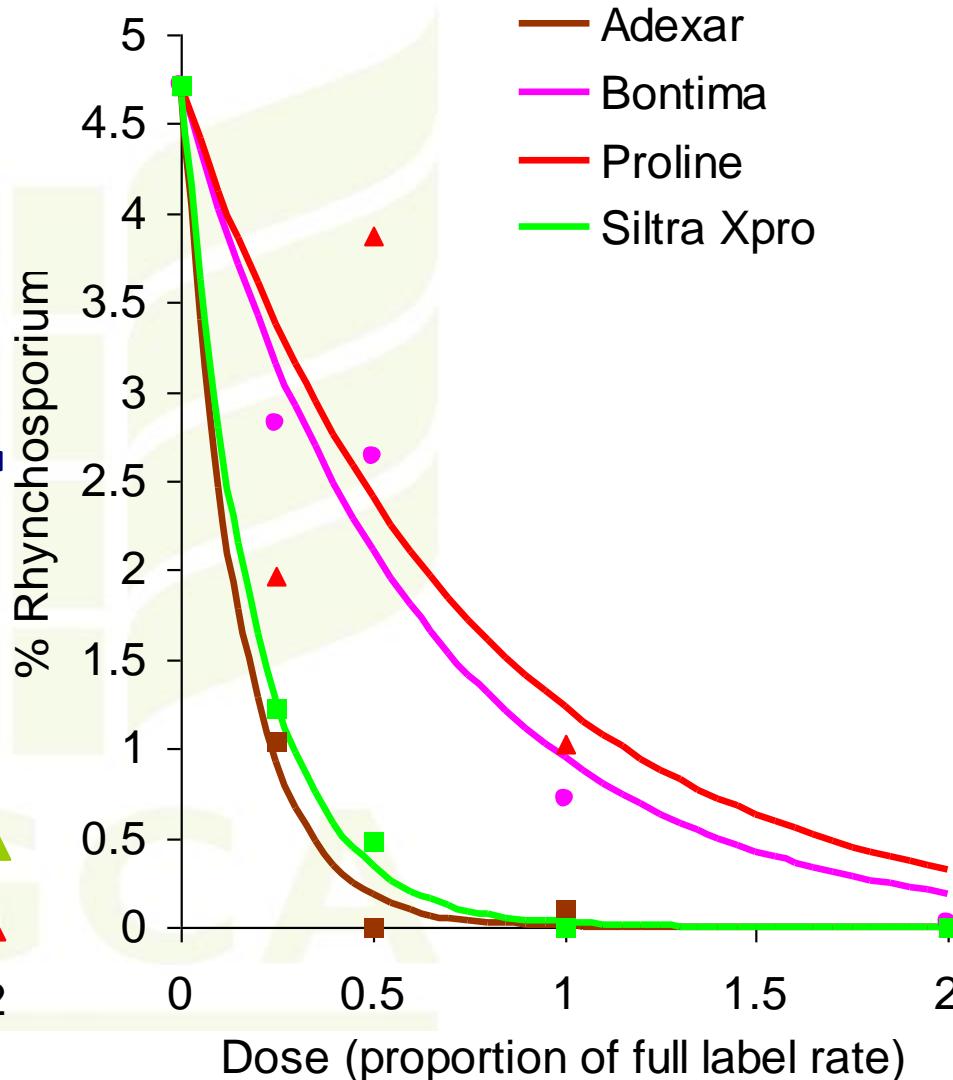
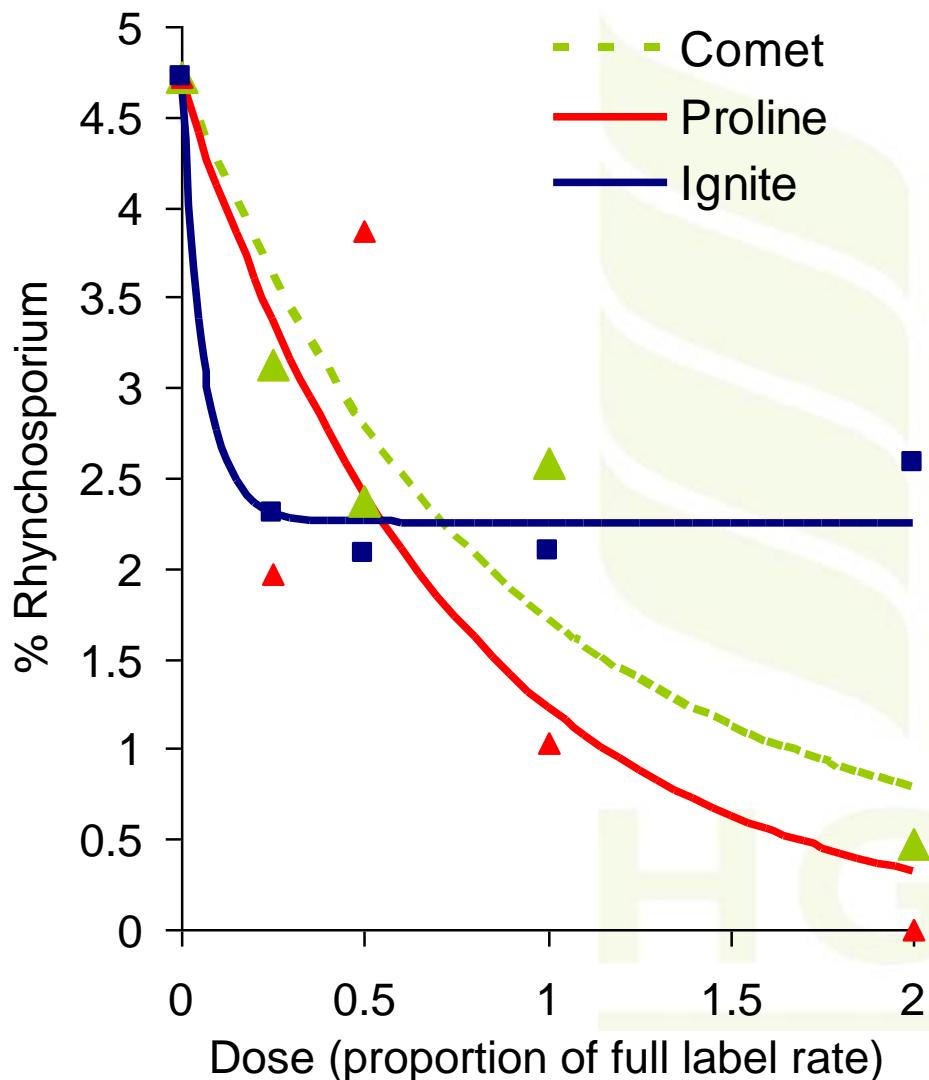
# Barley 2011

## Rhyncho eradicate (n=3)



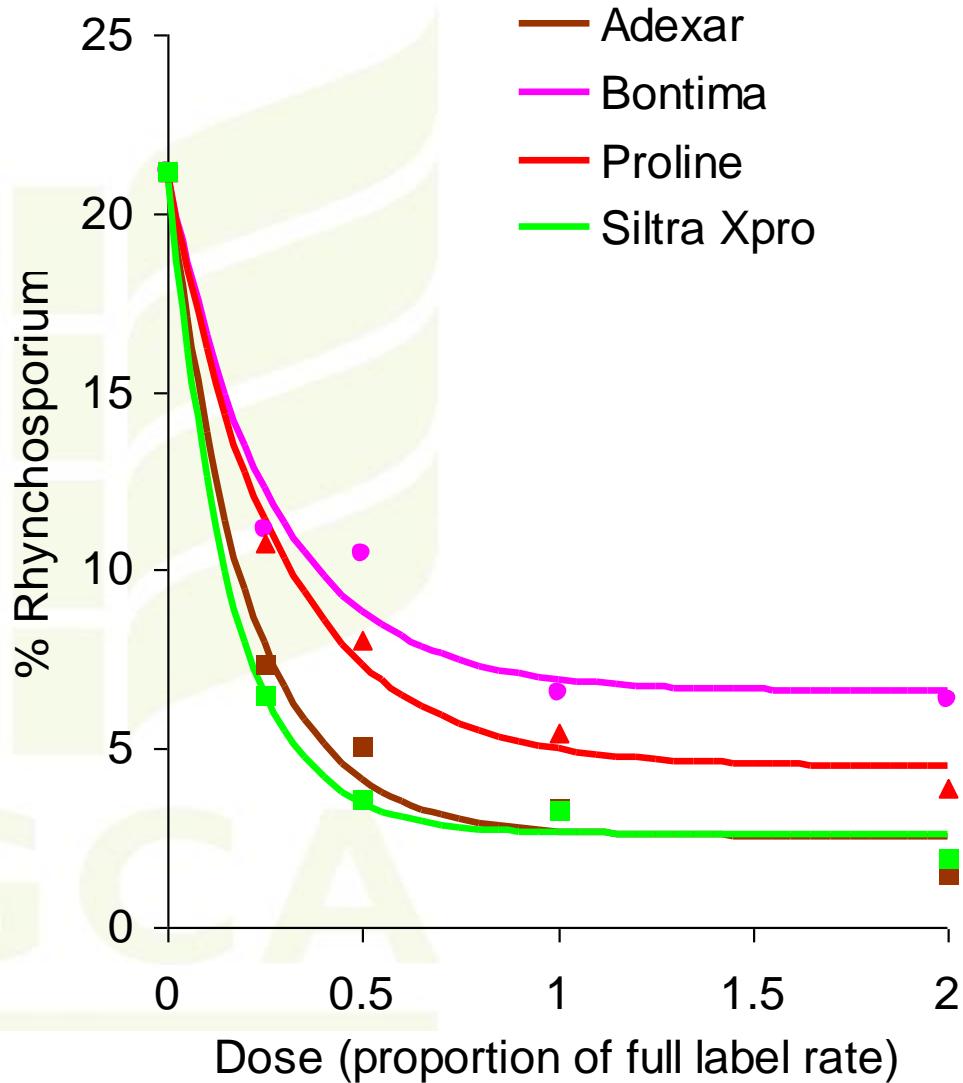
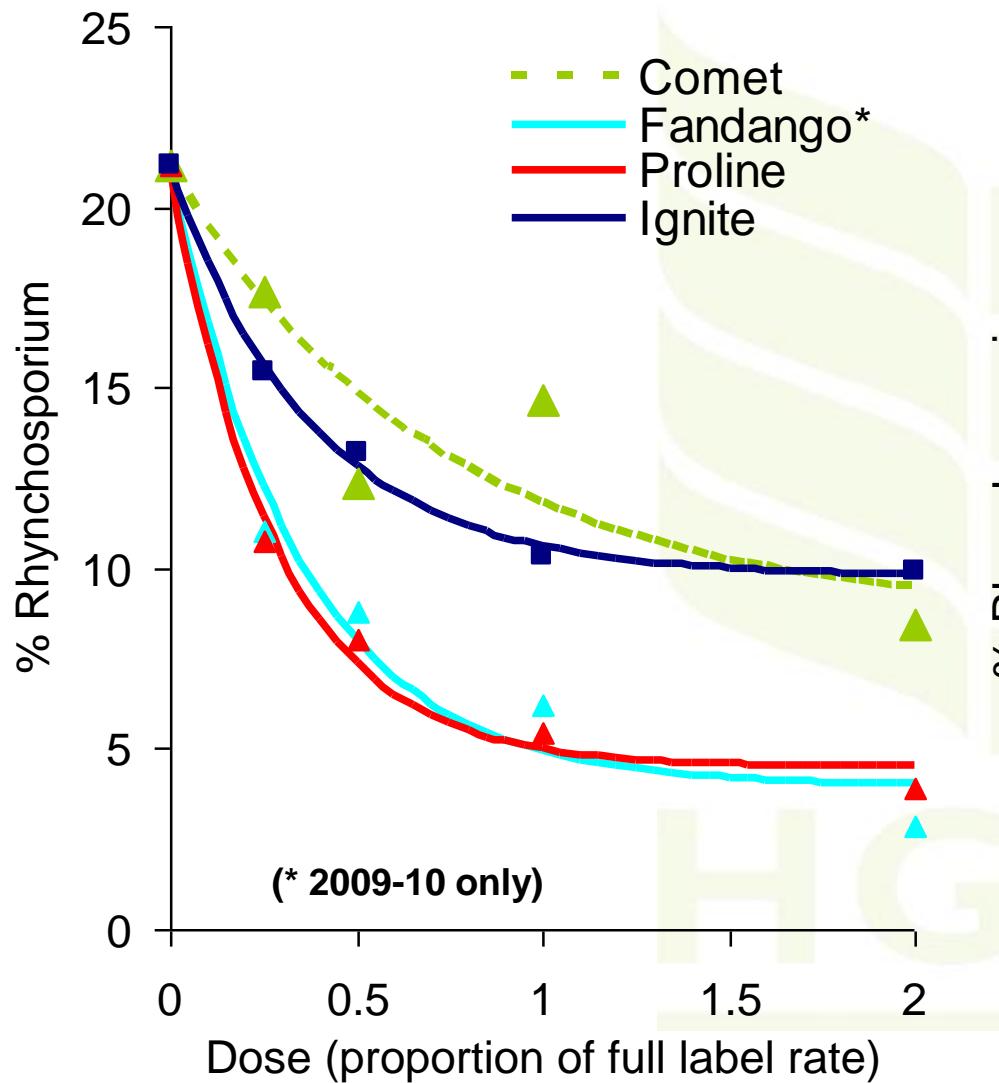
# Barley 2011

## Rhyncho protectant (n=2)

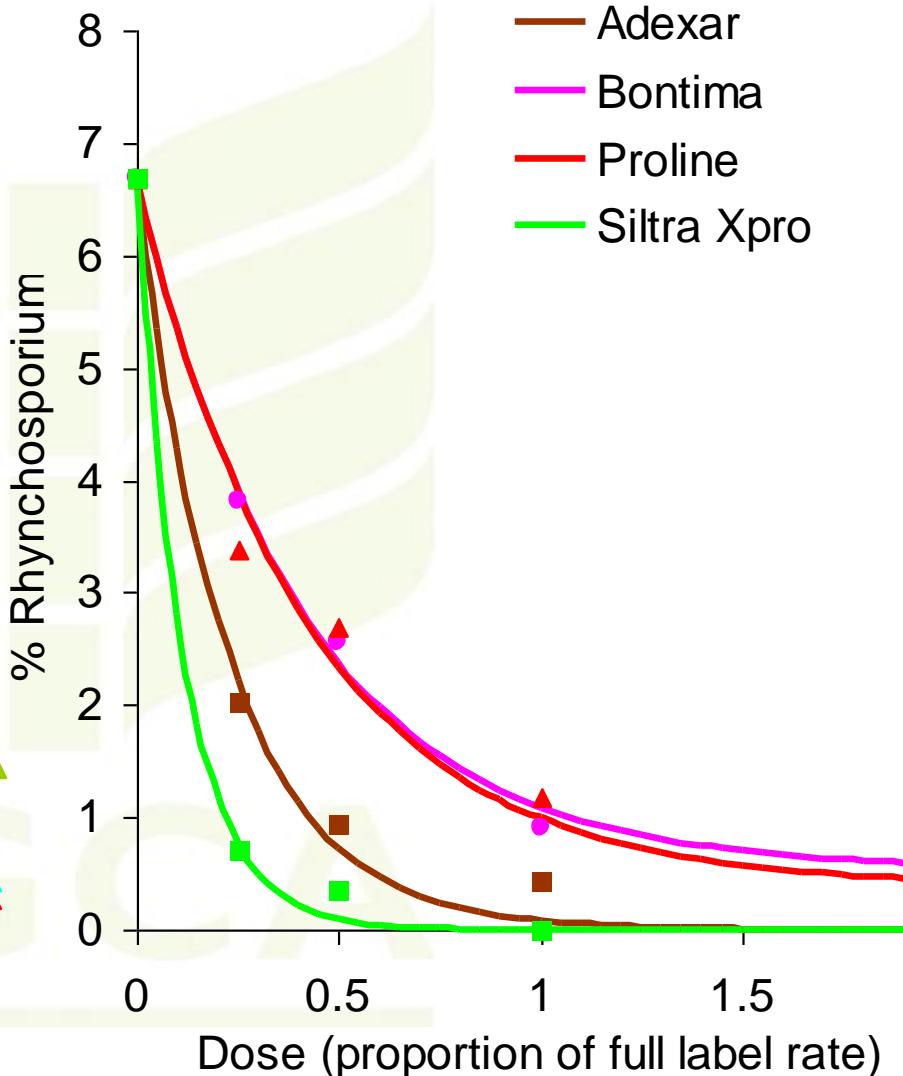
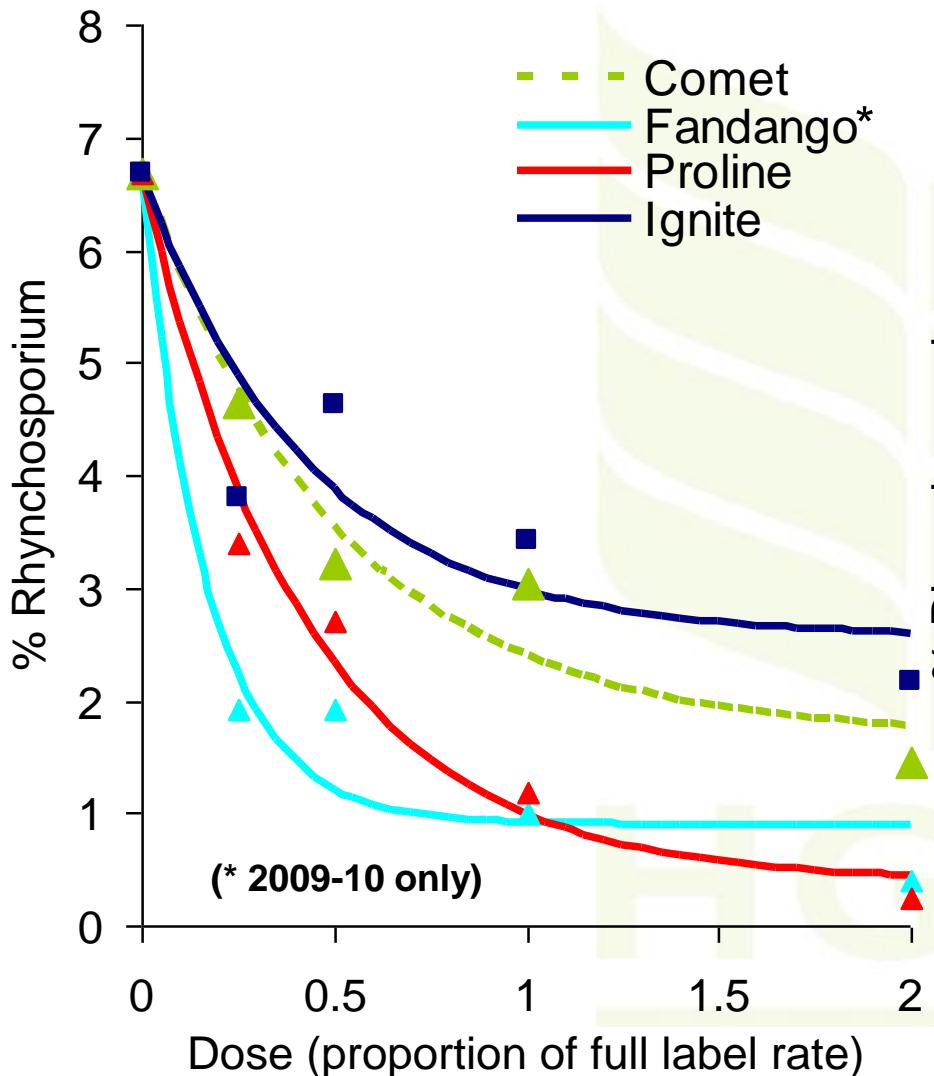


# Barley 2009-2011

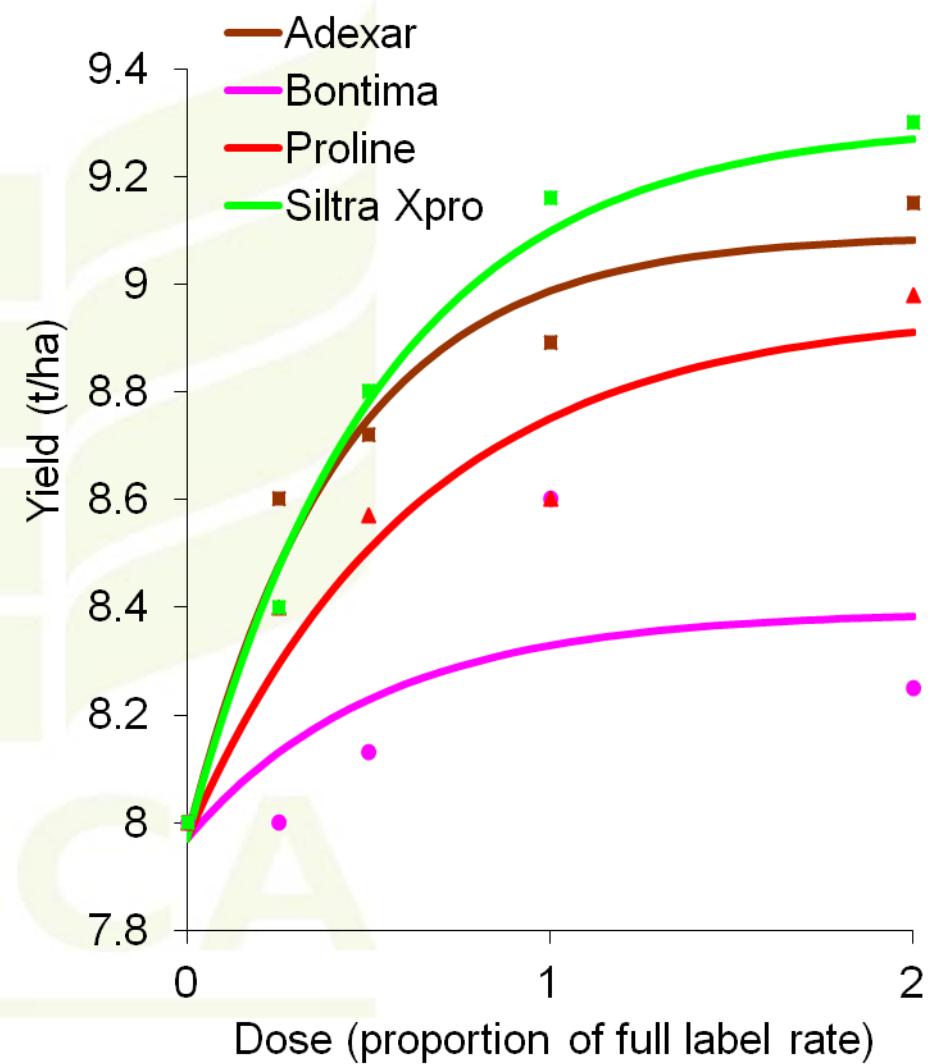
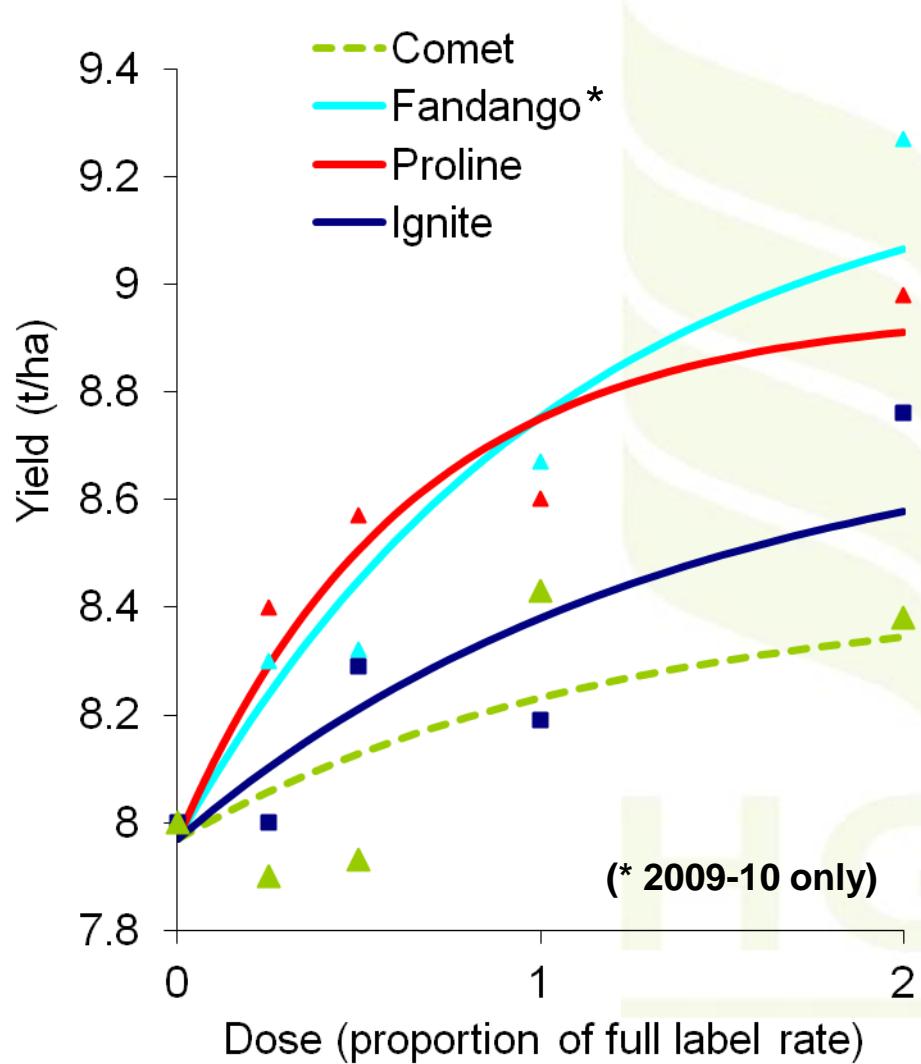
## Rhyncho eradicate (n=7)



# Barley 2009-2011 Rhyncho protectant (n=6)

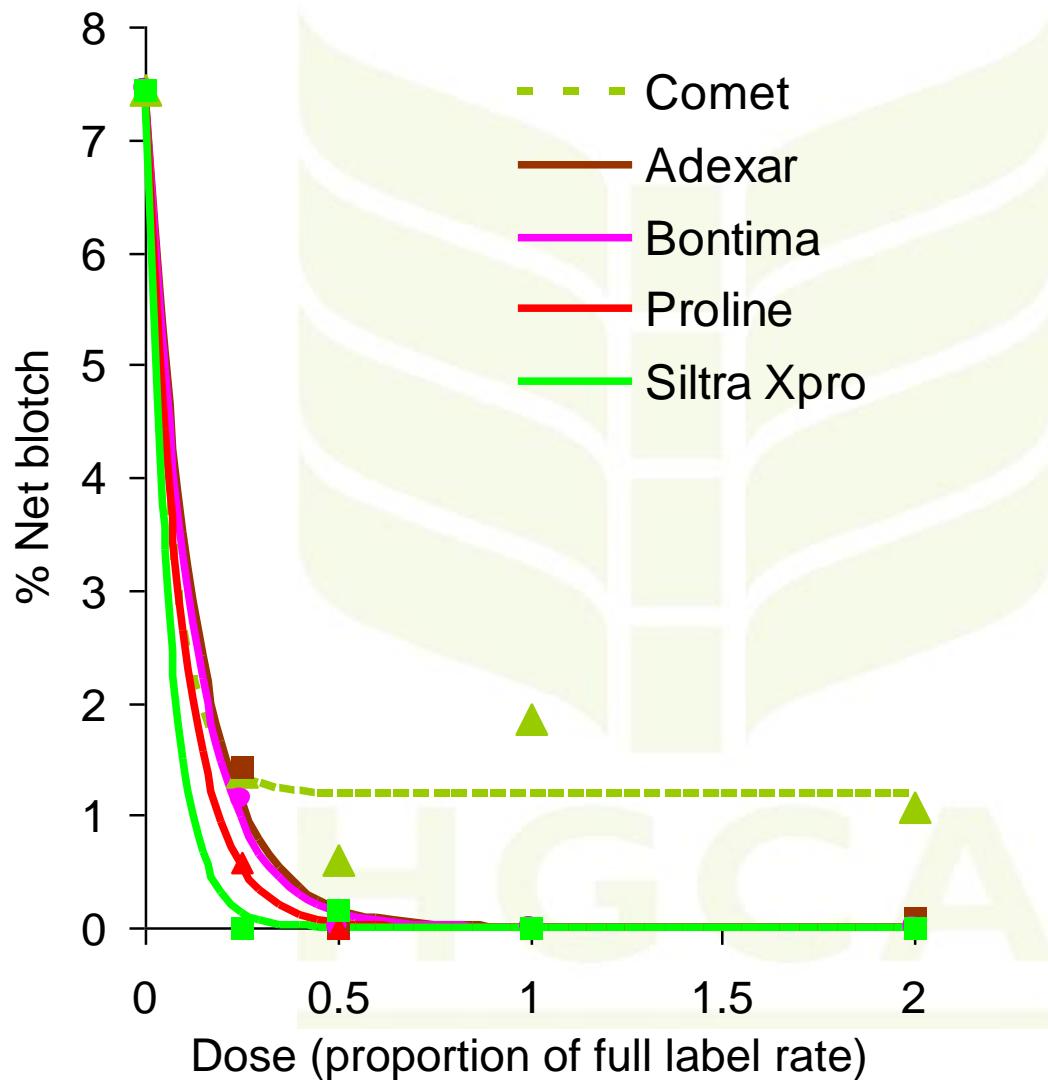


# Rhynchosporium trial yields 2009-2011

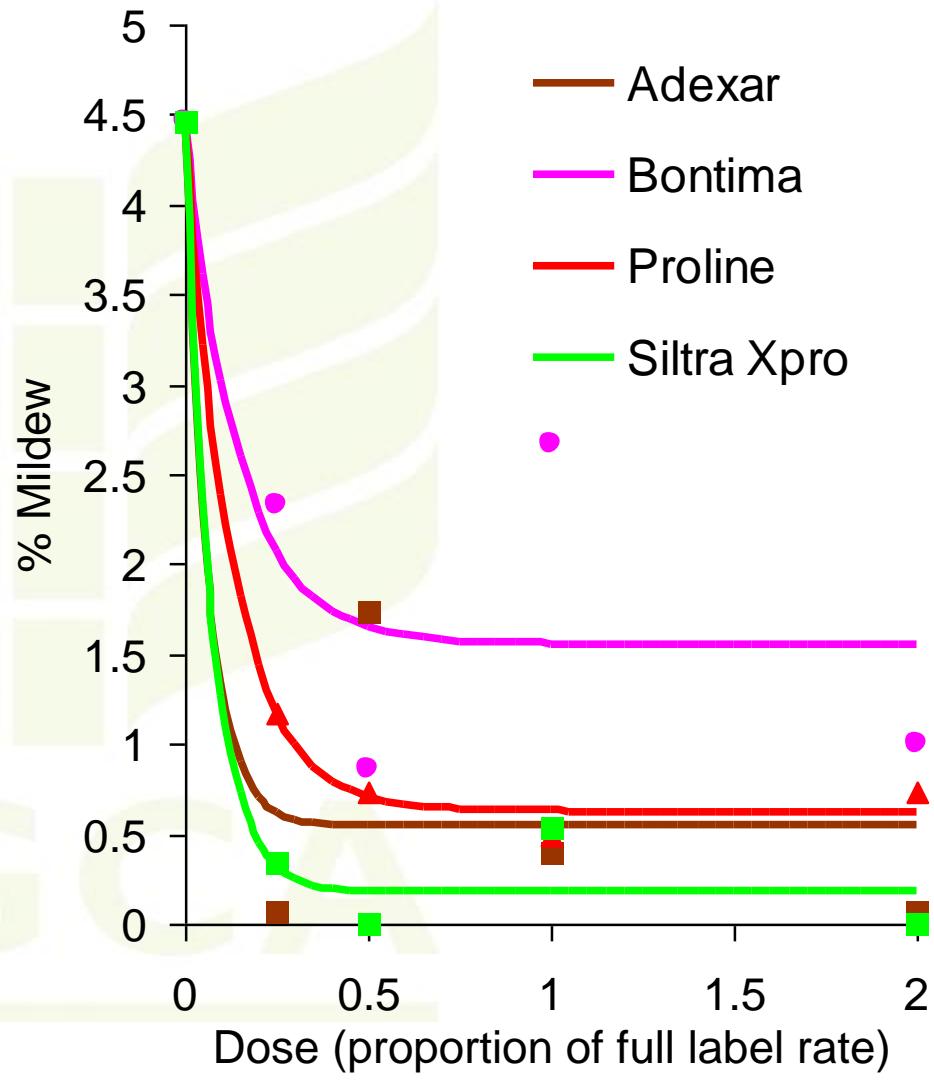
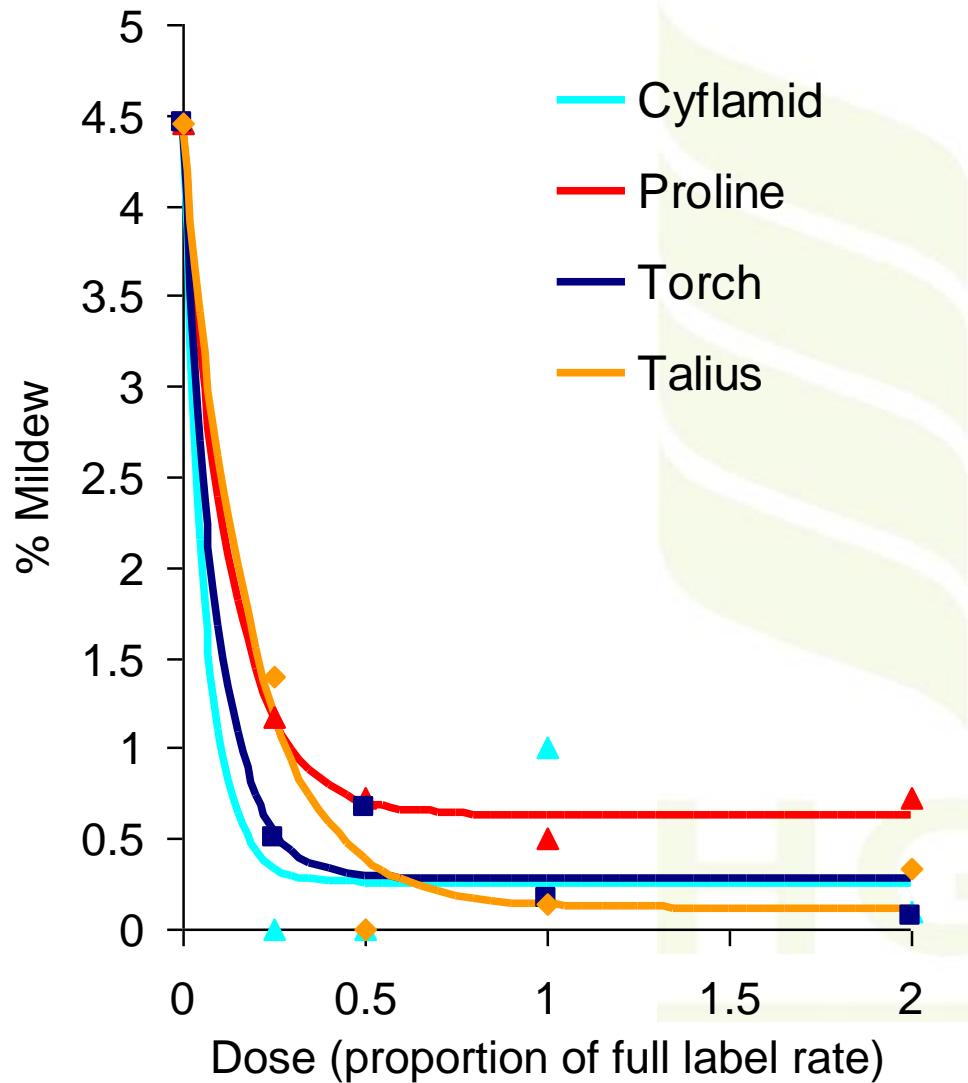


# Barley 2009-11

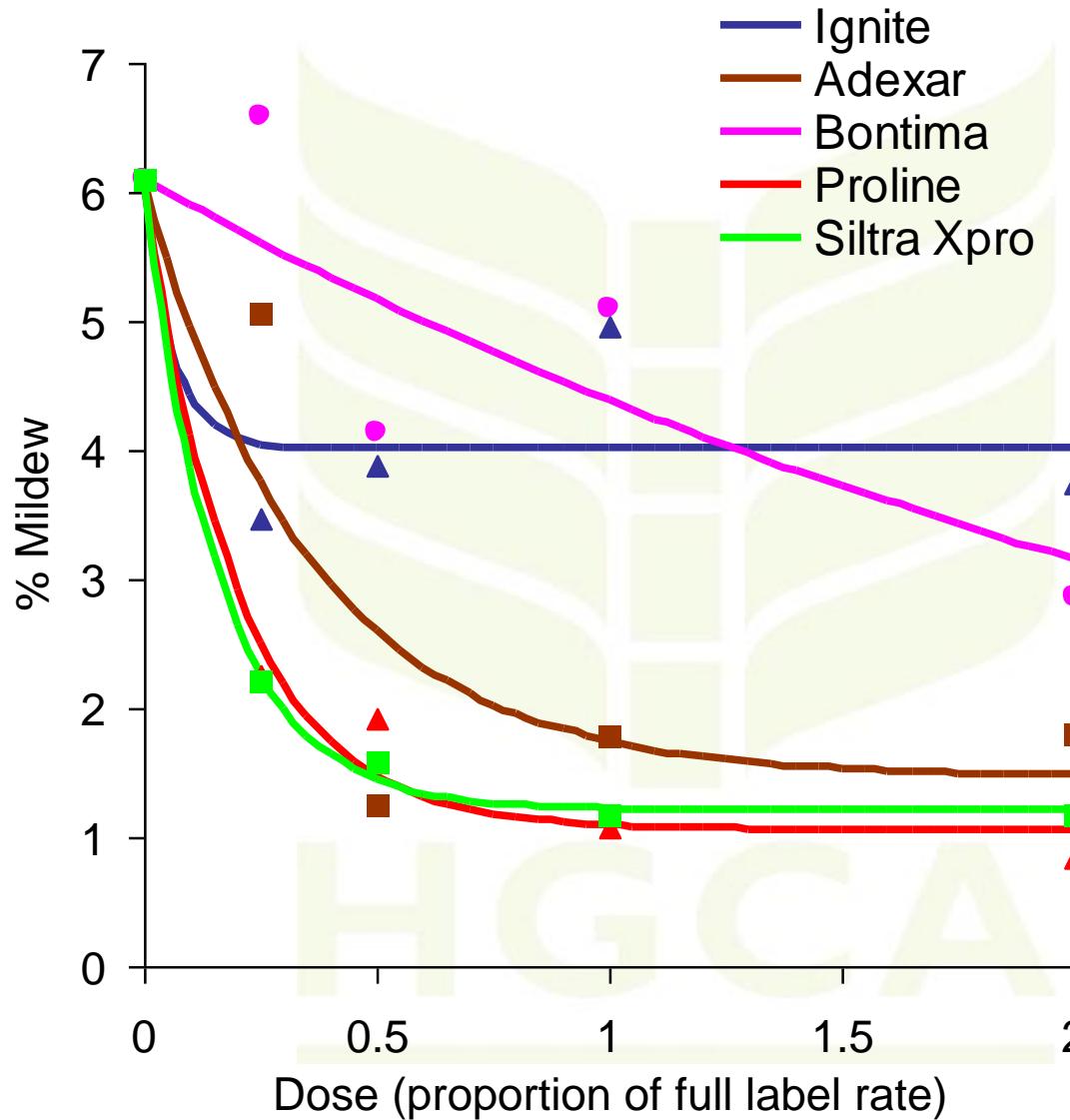
## Net Blotch eradicant



# Barley 2011 Mildew protectant

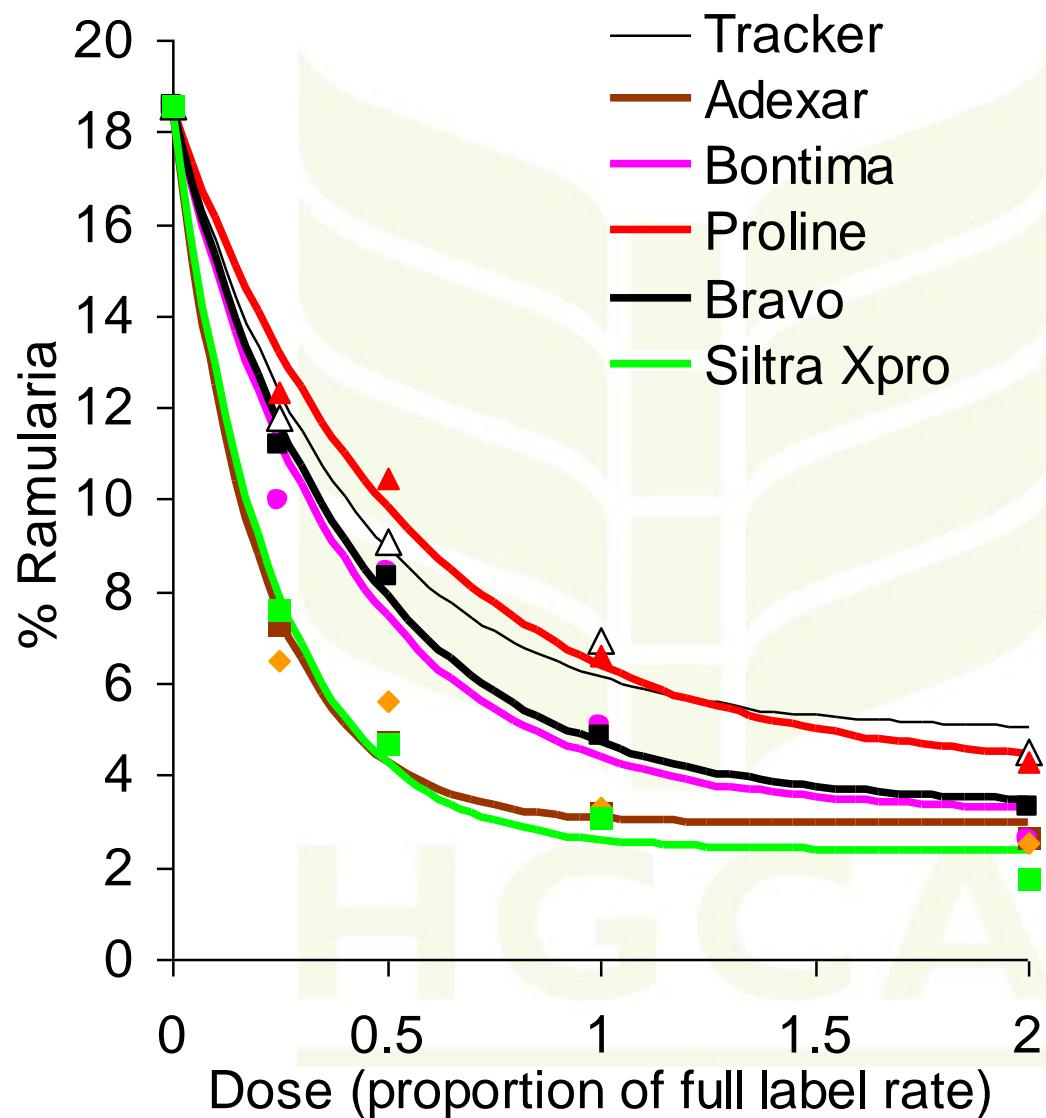


# Barley 2009-11 Mildew eradicant



# Barley 2009-11

## Ramularia protectant



# Conclusions on barley

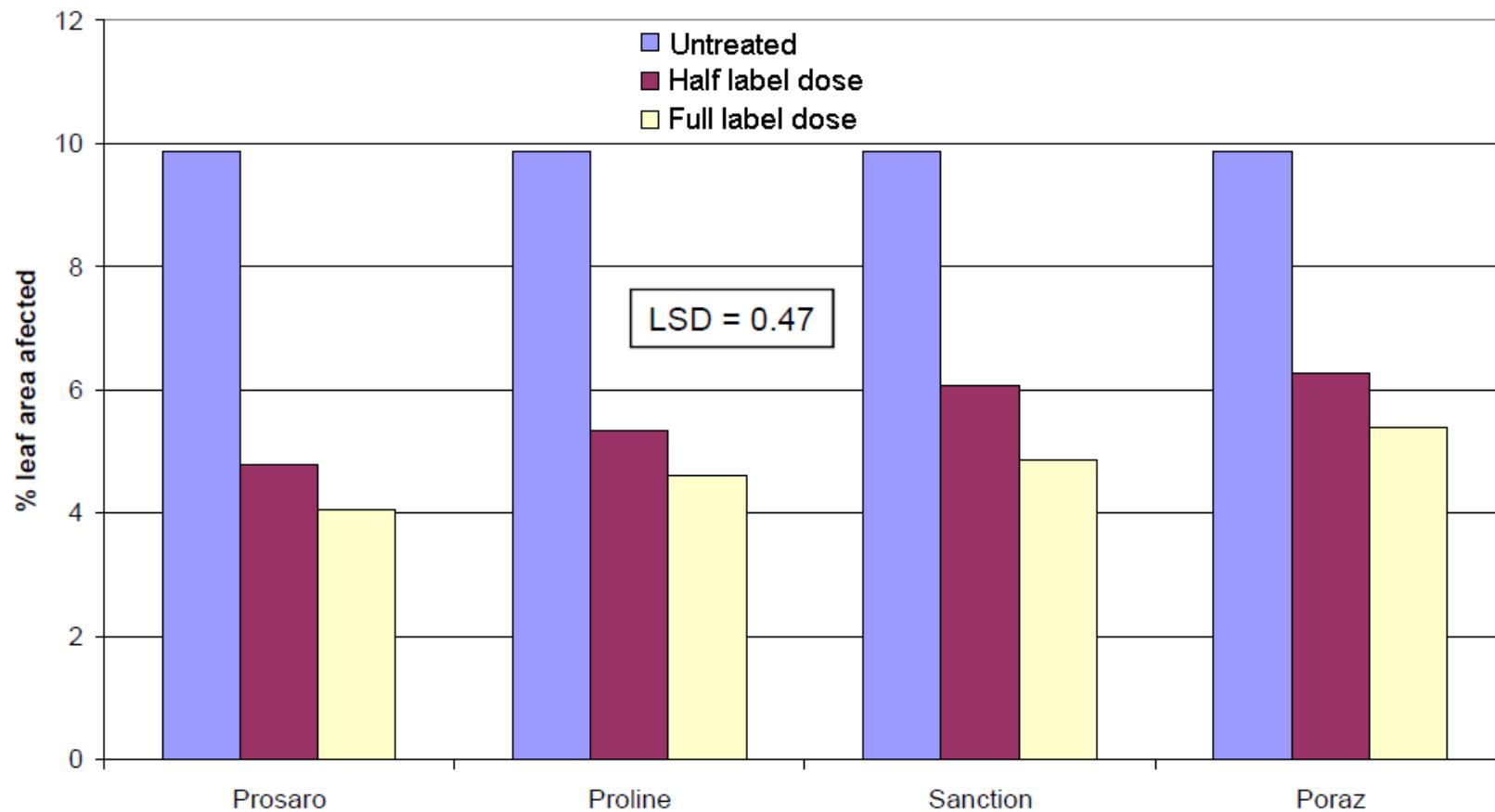
- SDHIs add useful efficacy on barley diseases;
- Siltra Xpro and Adexar are closely matched all-rounders, both more effective than their azole component alone;
- Bontima (IZM + cyprodinil) also very active on net blotch, ramularia, and brown rust;
- Strobilurins still active on rhynchosporium and rusts in particular.

## **Fungicide performance in Oilseed Rape – 2011 - 2012**

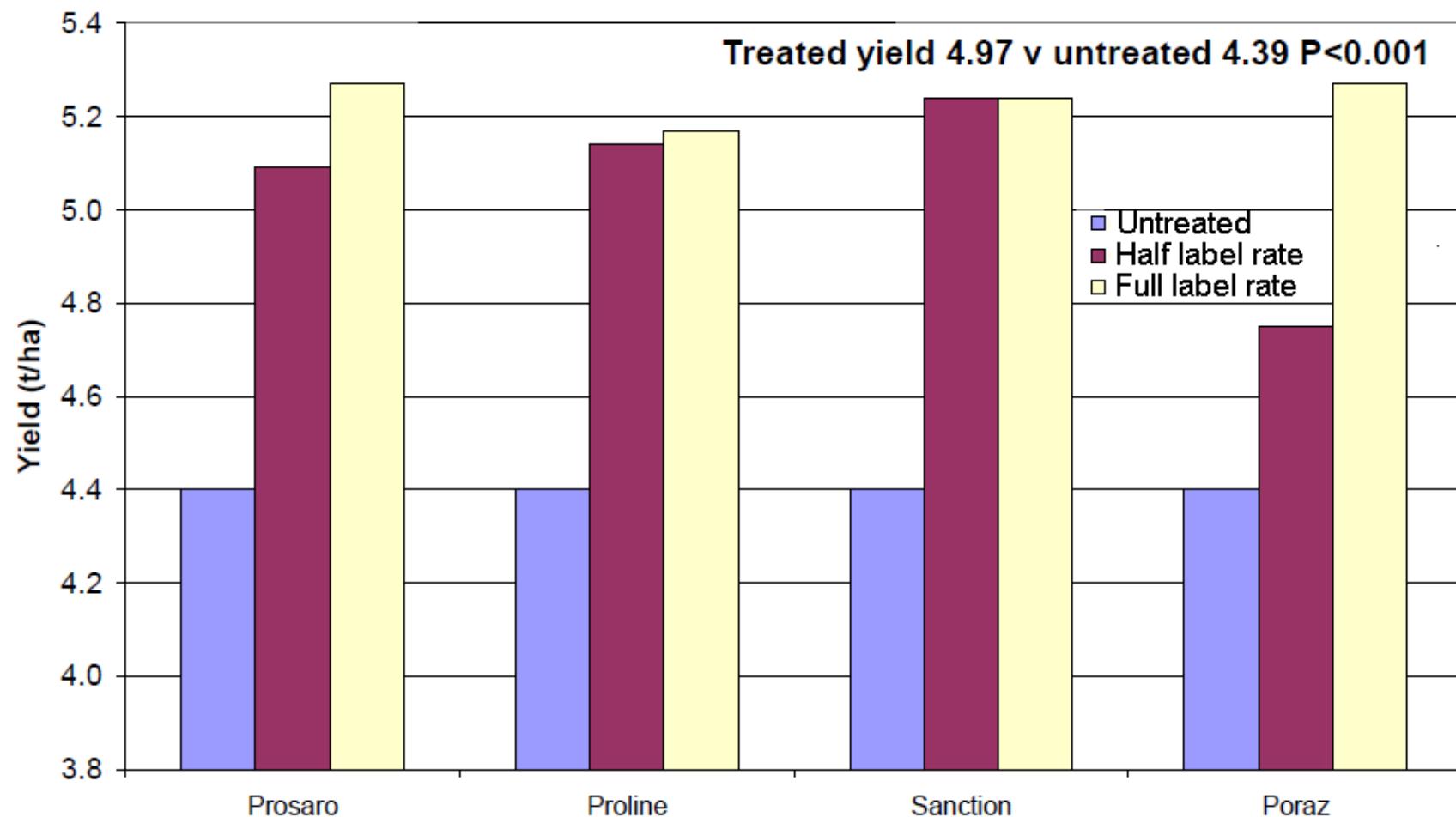
- Products tested at two rates: half and full label
- Light Leaf Spot – Good levels of disease at one site in N. Yorkshire
- Phoma – Moderate levels of disease at one site, high levels at second site
- Sclerotinia – no disease at one site, very little disease at second site, no new data from 2011

## Light Leaf spot control

North Yorkshire 2011 – Assessed 6 weeks after T2 spray

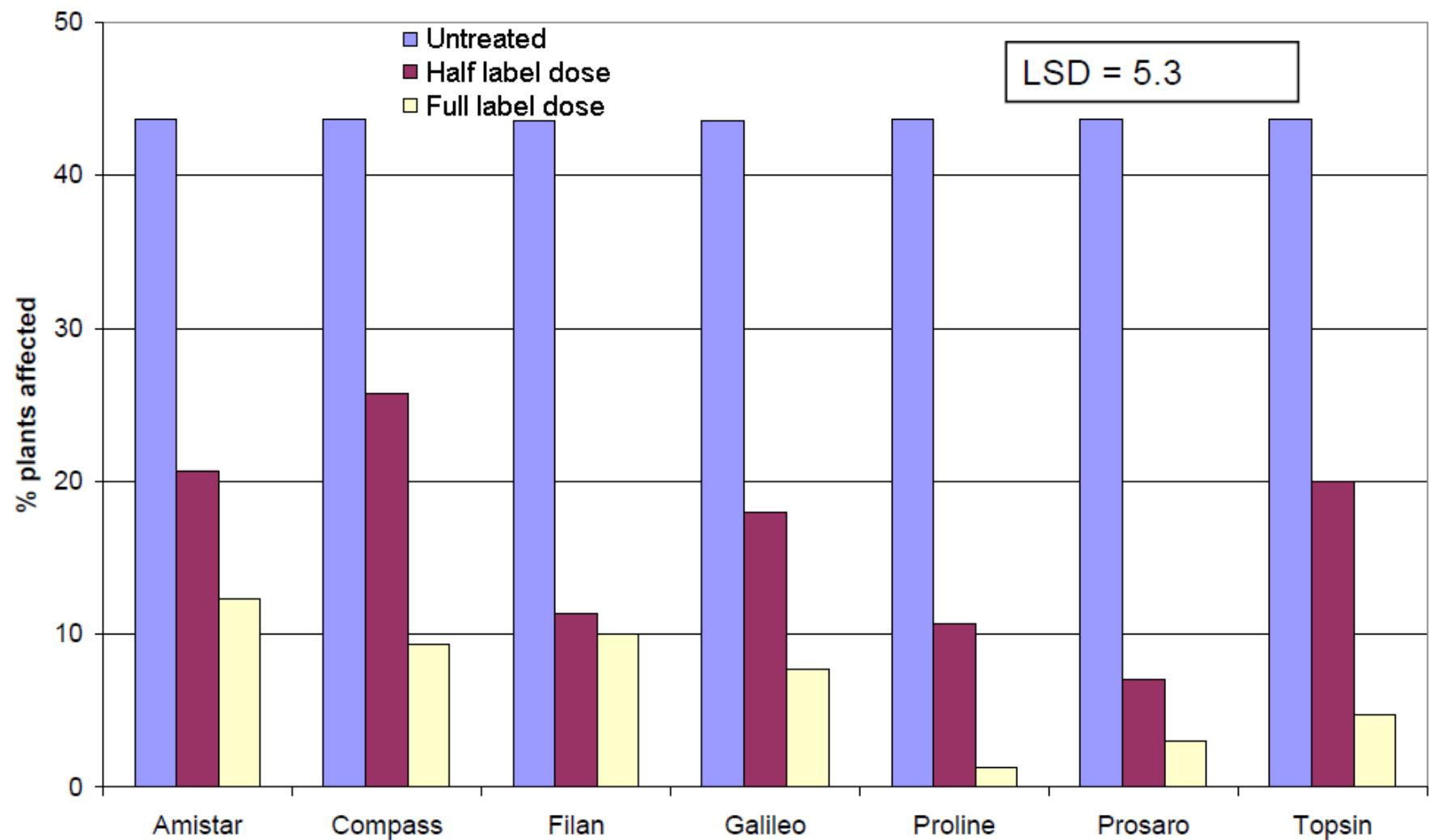


## Light leaf spot treatment – yield response N Yorkshire 2011

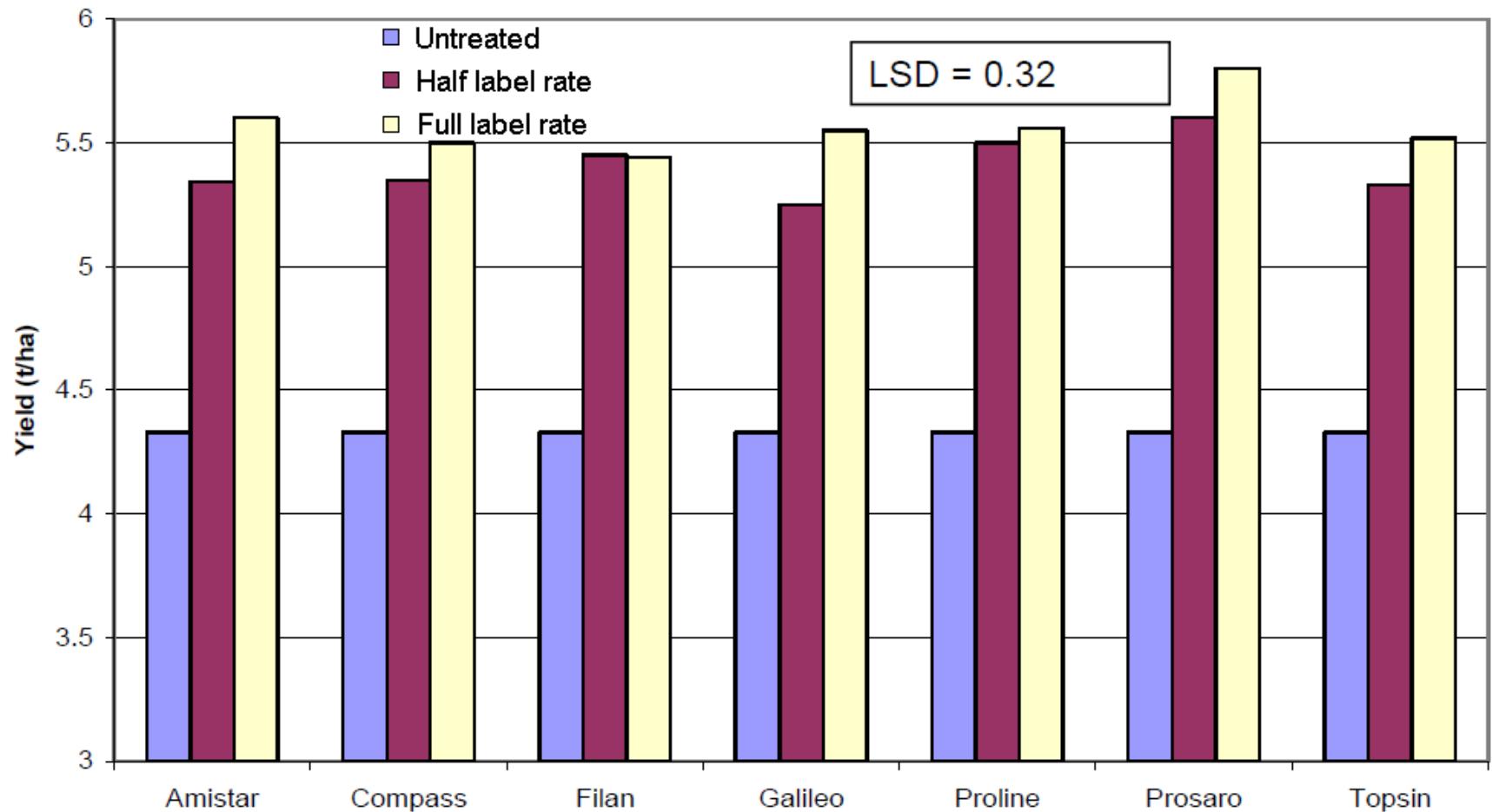


## Sclerotina control

Hereford 2010

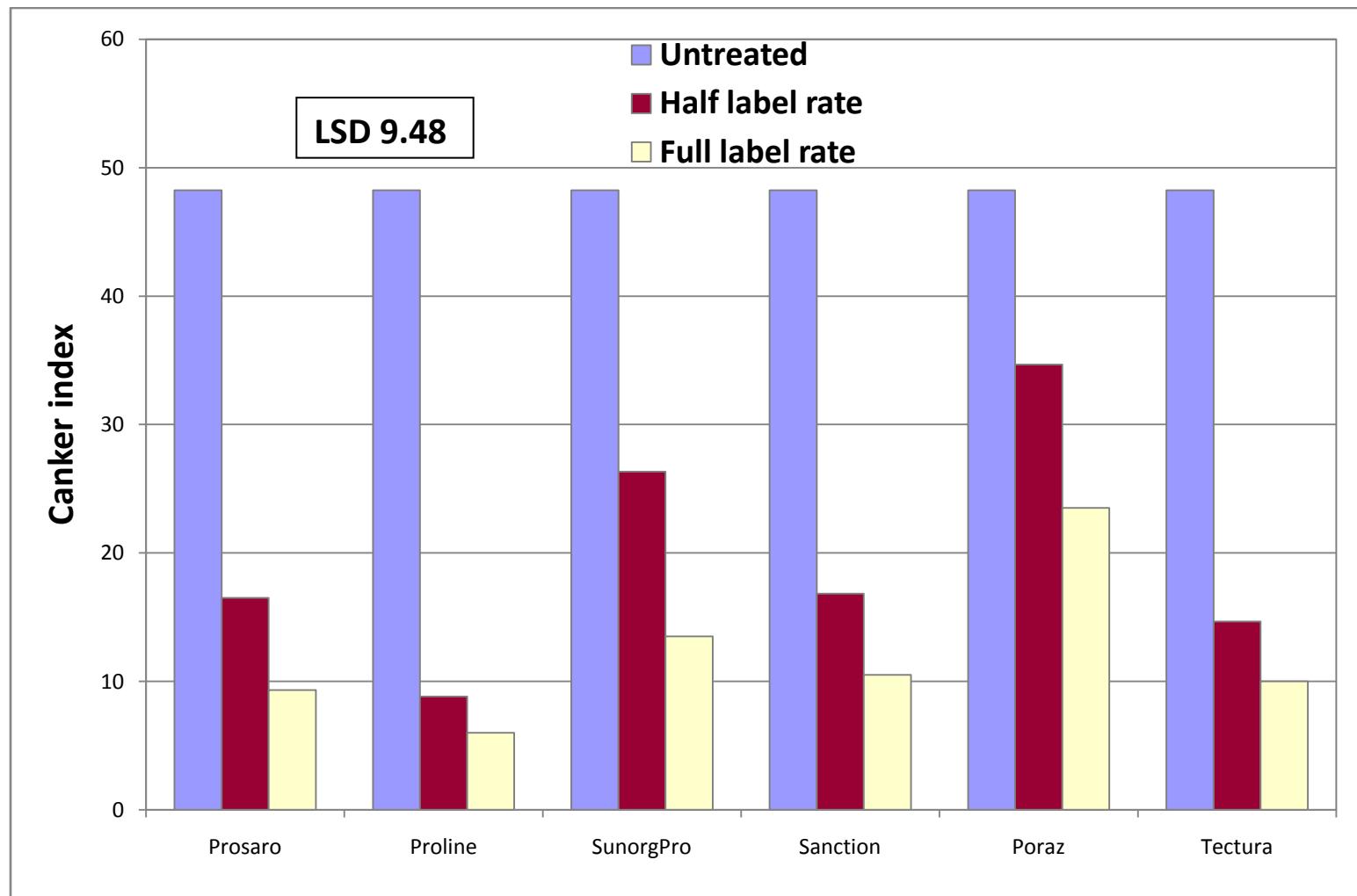


## Sclerorinia treatments - yield responses Hereford 2010



# Phoma canker control - 2011

Average of two sites - Products used in a curative situation



# Phoma canker treatments – yield responses 2011

Average of two sites - Products used in a curative situation

