Fungicide Performance in Wheat 2010 -2011

Septoria tritici (Mycosphaerella graminicola)

In 2009 and 2010

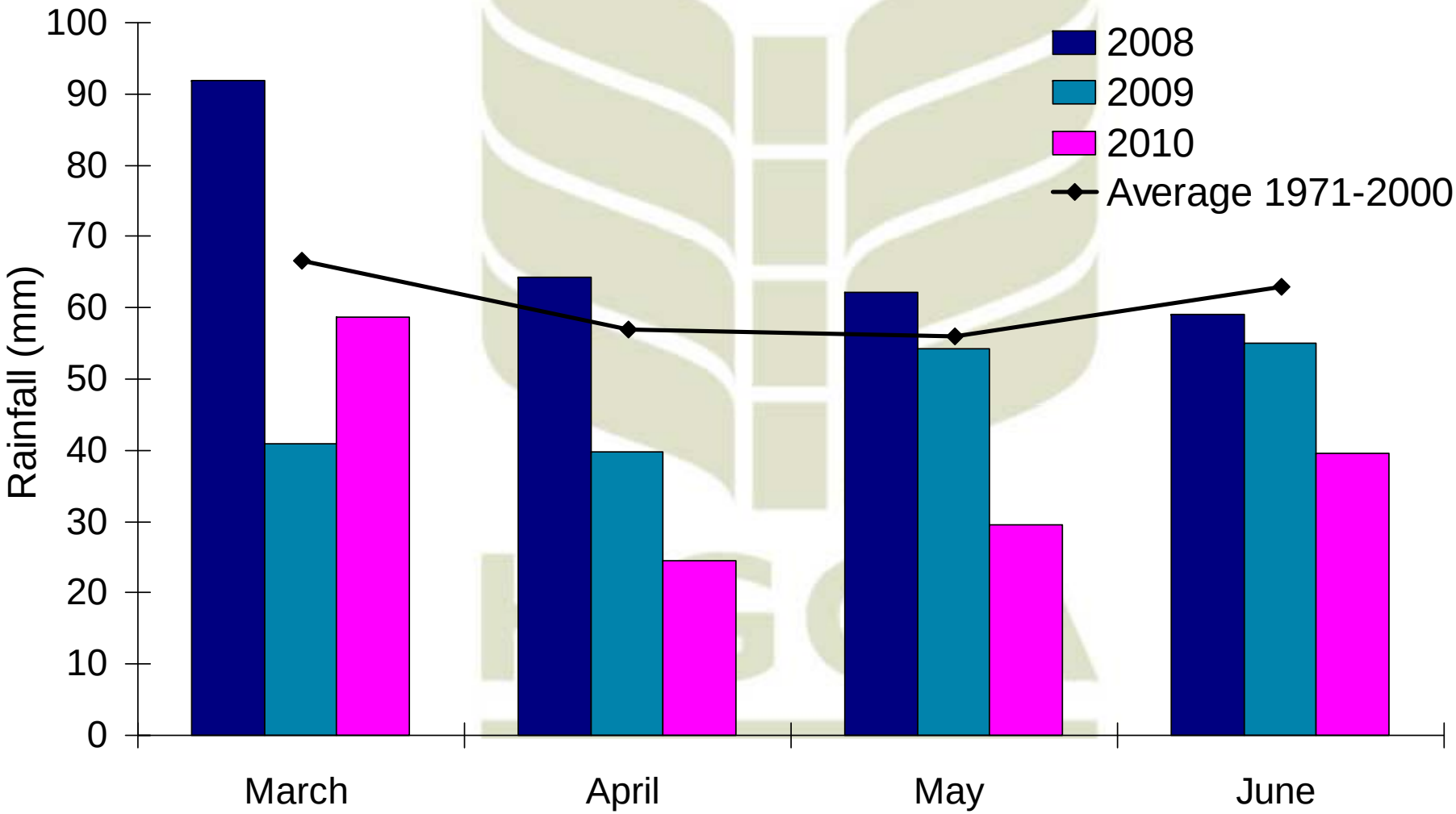
- Lower pressure due to dry springs
- Mainly protectant activity in 2010

In 2011

A danger of complacency:

- *Septoria tritici* is potentially the most yield damaging pathogen
- Spring rainfall will determine the extent of the epidemic

Below-average Spring rainfall in 2009 & 2010



New SDHI / triazole mixtures approved

Aviator235 Xpro

75 g/litre of bixafen + **160** g/litre of prothioconazole

- new active ingredient (bixafen) and formulation (Xpro)
- version tested contained 150 g/litre prothioconazole
- evaluated in HGCA trials since 2008.

Seguris

125 g/litre of isopyrazam + 90 g/litre of epoxiconazole

- new active ingredient (isopyrazam) in wheat
- tested as tank mix in 2008 & 2009, co-formulation in 2010.

New SDHI / triazole mixtures approved

Succinate Dehydrogenase Inhibitors (SDHI's)

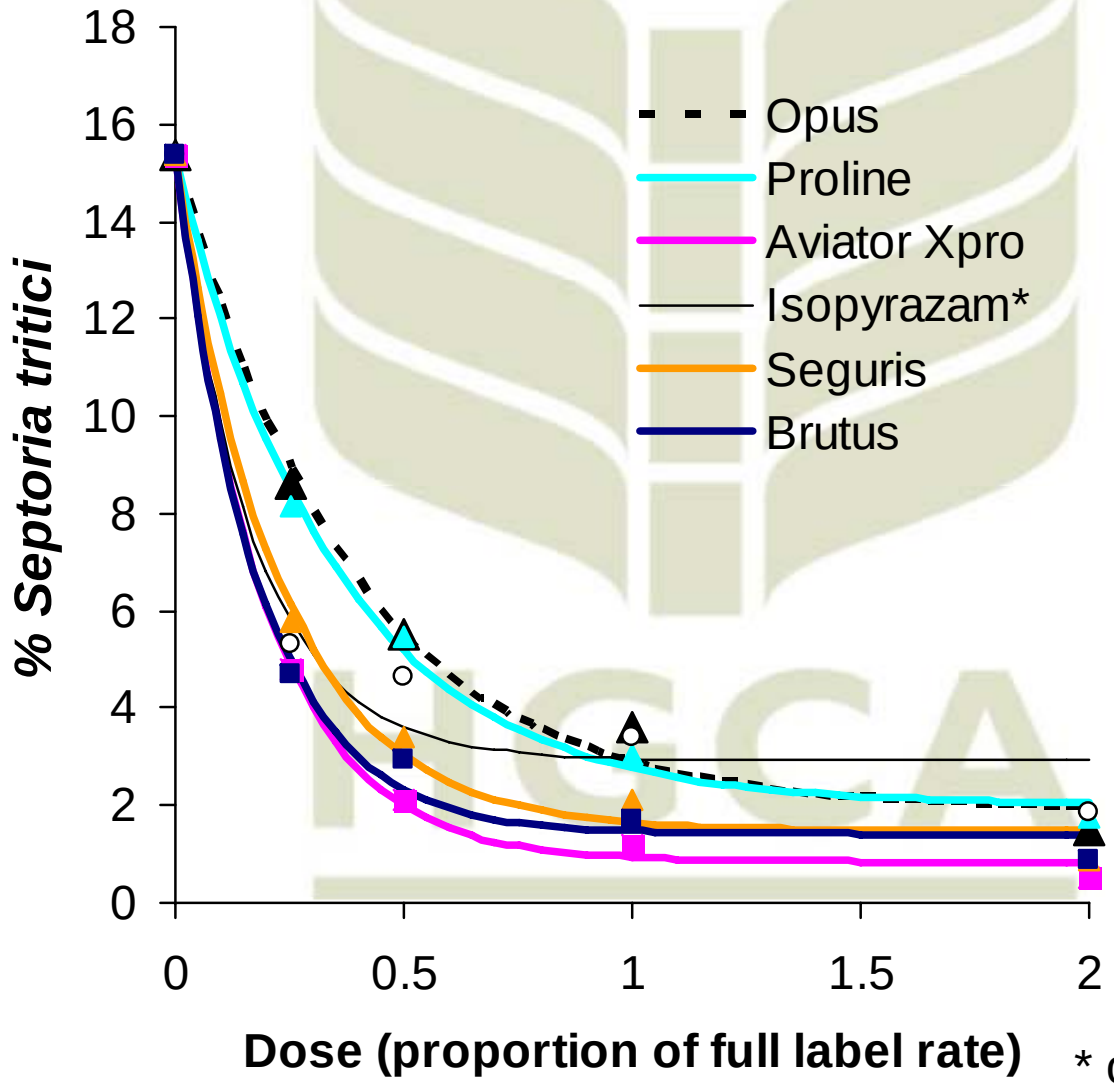
- a new mode of action for wheat foliar disease control
- same chemical group as boscalid (in Tracker)
- single site mode of action: use in mixtures *e.g.* with triazoles.

Fungicides included

Product Used	Full Dose (l/ha)	Active Ingredients
Aviator Xpro	1.25	75 g/l bixafen + 150 g/l prothioconazole
Seguris	1.0	125 g/l isopyrazam + 90 g/l epoxiconazole
Brutus	3.0	37.5 g/l epoxiconazole + 27.5 g/l metconazole
Opus	1.0	125 g/l epoxiconazole (SC)
Ignite	1.5	83 g/l epoxiconazole (EC) (from 2010)
Proline *(Proline275)*	0.8 *(0.72)*	250 g/l prothioconazole *(275 g/l prothioconazole) (from 2010)*
IZM solo	1.0	125 g/l Isopyrazam
Comet200	1.25	200 g/l pyraclostrobin
Firefly	1.5	50 g/l fluoxastrobin + 100 g/l prothioconazole

n=12 trials

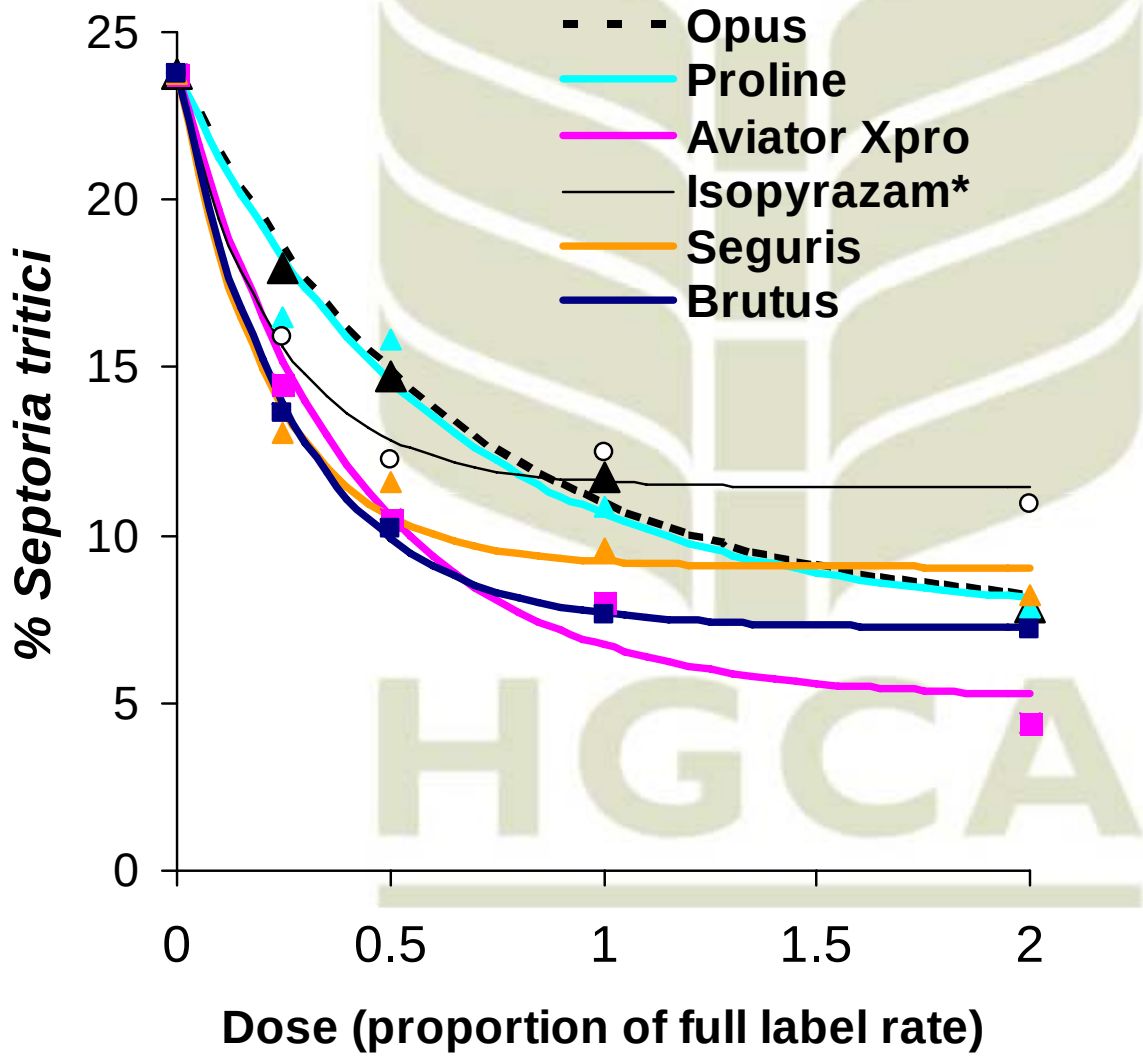
Septoria tritici protectant activity 2008 - 2010 (all sites)



* only available in mixtures

n=7 trials

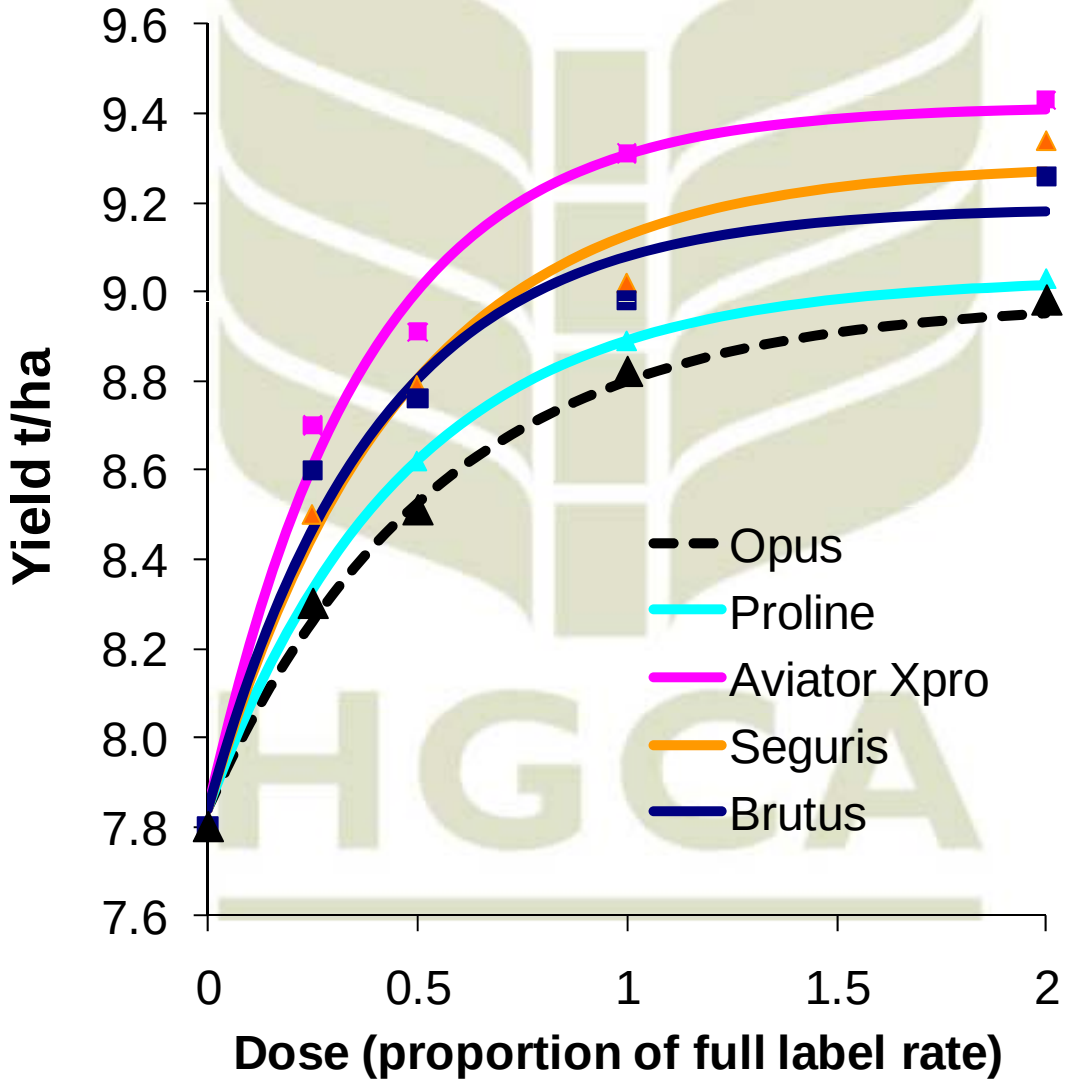
Septoria tritici eradicant activity 2008 - 2010 (all sites)



* only available in mixtures

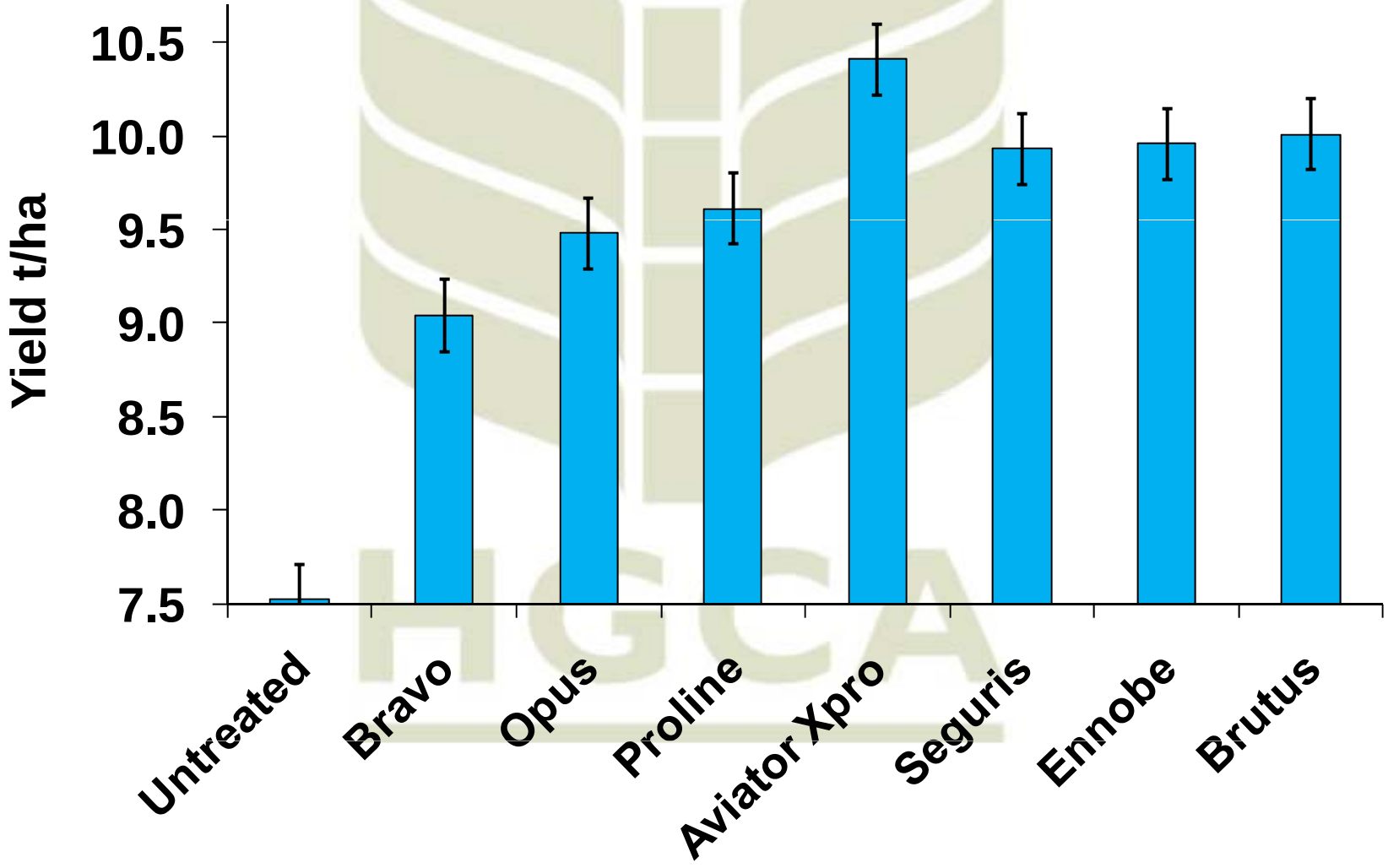
n=11 trials

Yield t/ha (single spray treatments) *Septoria tritici* sites 2008 – 2010



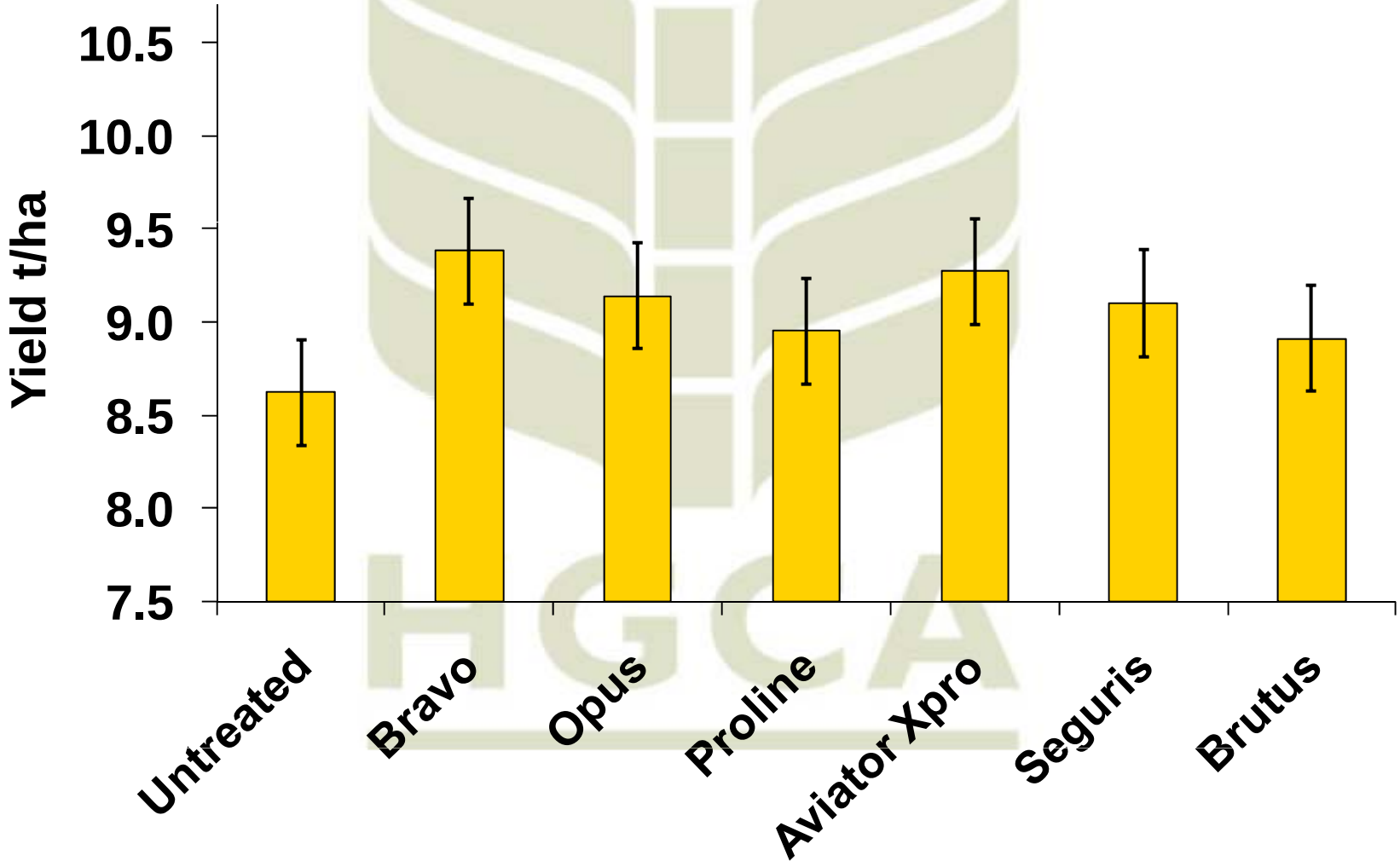
n=4 trials

Fungicide Performance *Septoria tritici* Half label rates at T1 & T2: 2008 Yields



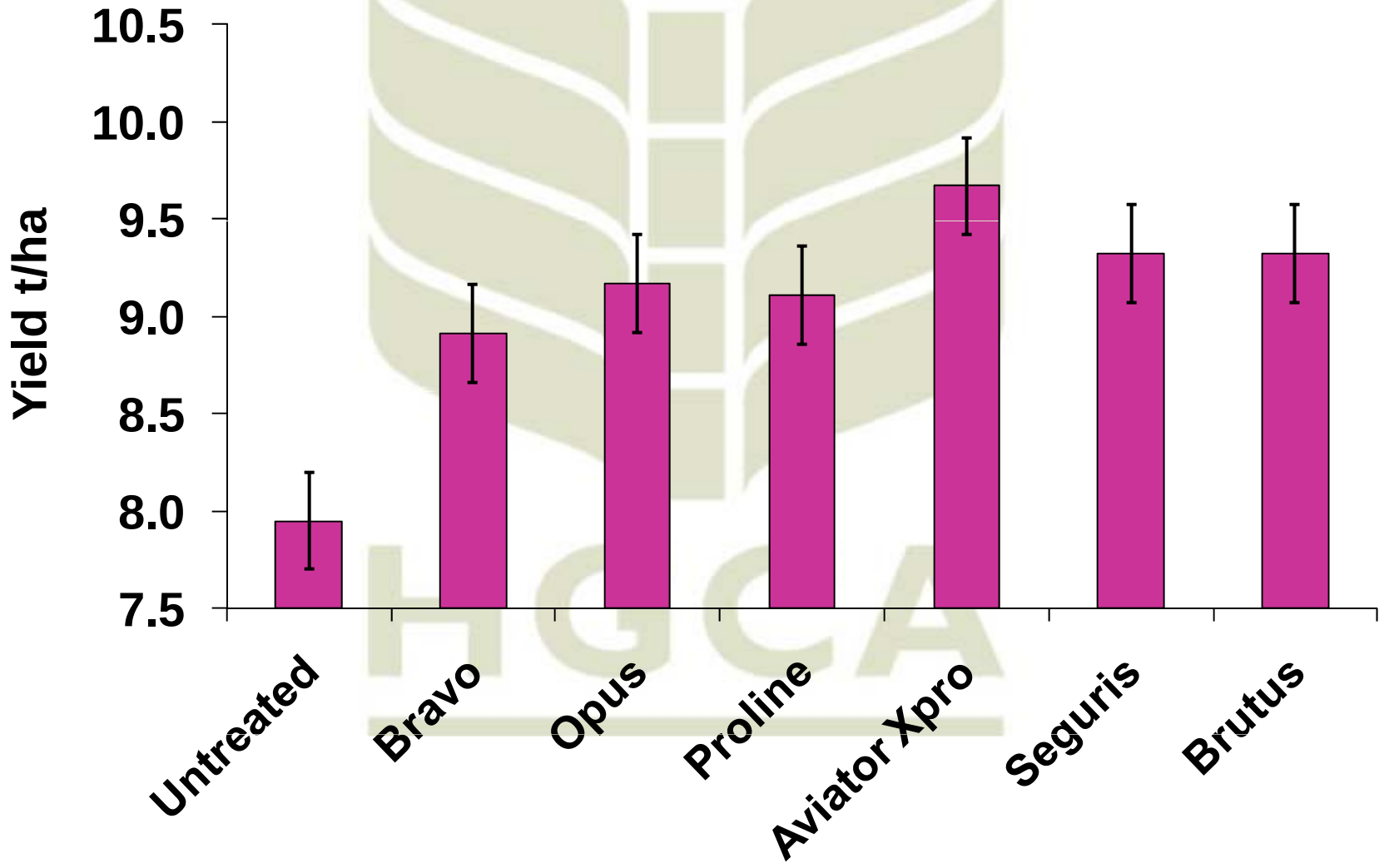
n=3 trials

Fungicide Performance *Septoria tritici* Half label rates at T1 & T2: 2010 Yields



n=11 trials

Fungicide Performance *Septoria tritici* Half label rates at T1 & T2: 2008 – 2010

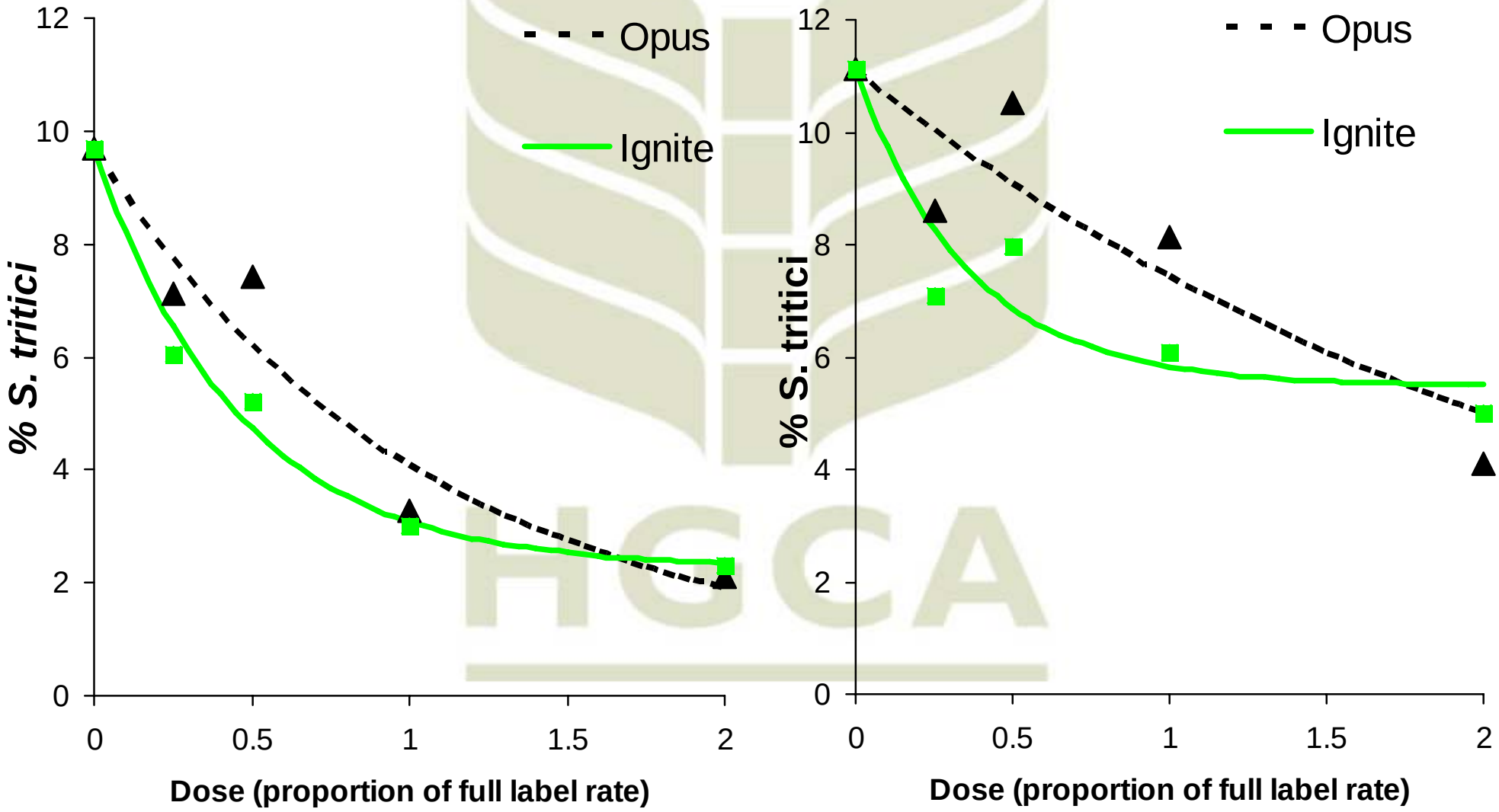


n = 2 trials

Septoria tritici activity 2010 (two sites)

Protectant

Eradicant



Summary: *Septoria tritici* and Yield

When compared as single or two-spray treatments:

- Combinations of bixafen + prothioconazole (as Aviator Xpro) and isopyrazam + epoxiconazole (as Seguris) add substantially to septoria control compared to Proline or Opus alone;
- Aviator Xpro has given similar level of septoria control to Brutus, and Seguris has shown comparable protectant activity;
- Aviator Xpro has given an average yield advantage of 0.35 t/ha over best triazole treatment (for half label rates applied twice);
- Seguris has given yields that are at least as good as Brutus;
- Ignite at least as effective as Opus against septoria in 2010.

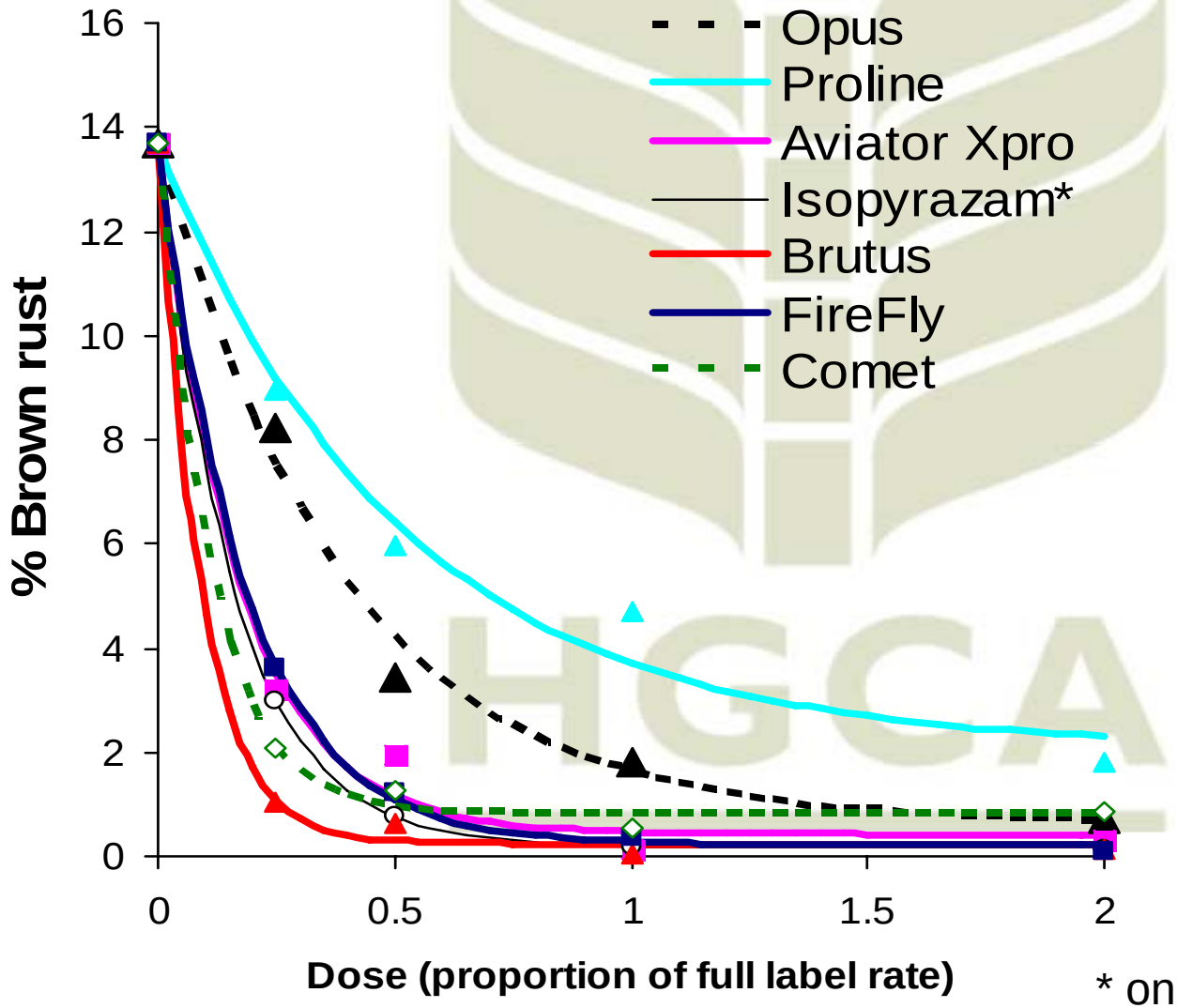
Brown rust: 2011 – a low risk season?

Brown rust development slowed by:

- ***Frosts***
  - affecting spore survival
- ***Overwinter temperatures***
  - reducing infection efficiency
  - extending latent period
- ***However, many varieties are at risk***
  - over 40% of UK wheat area rated 4 or less
  - susceptible varieties include:

Cordiale	Solstice
Grafton	Duxford
JB Diego	Gallant

Brown rust
2008 and 09



* only available in mixtures

Yellow rust

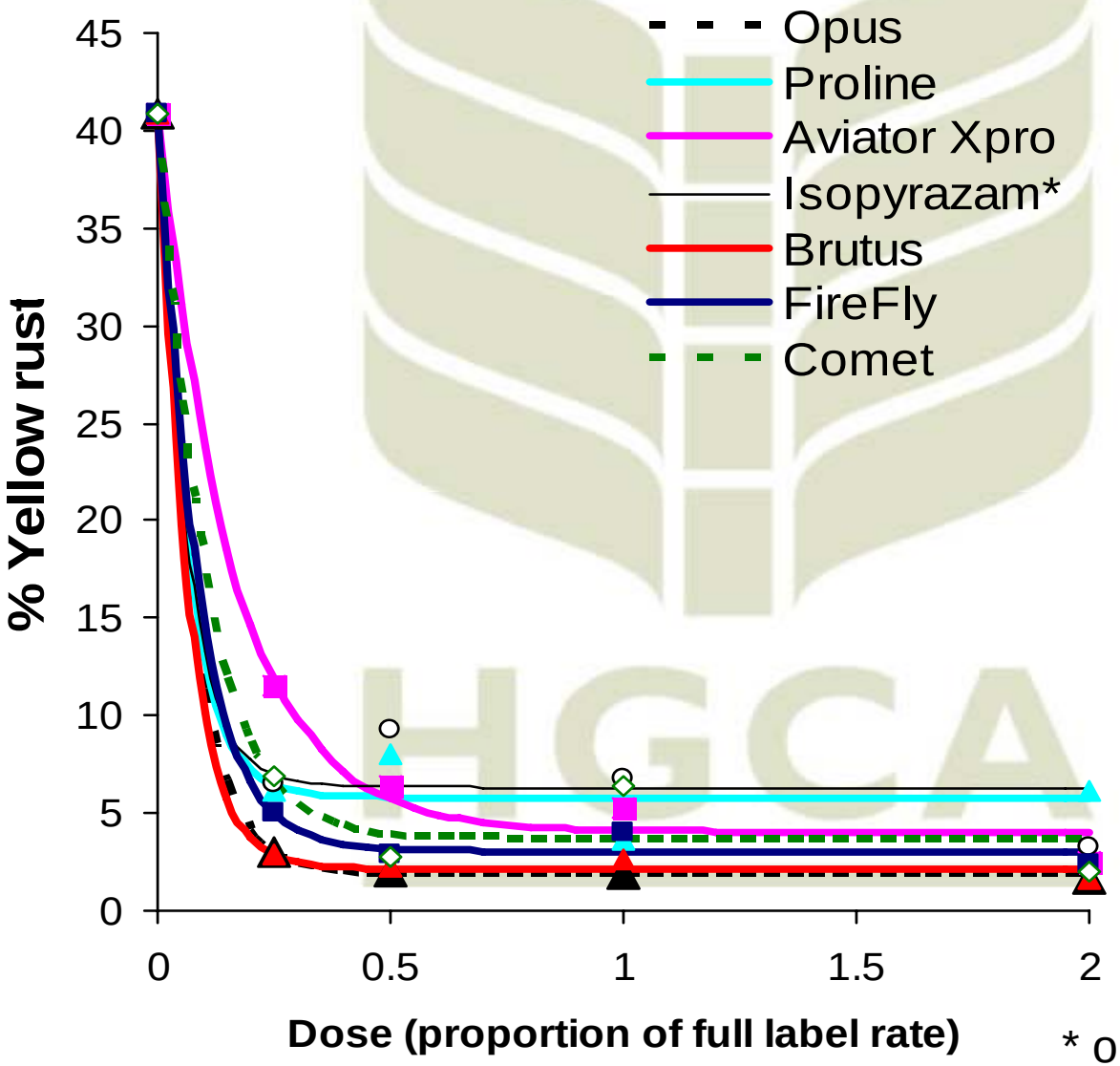
2010

- Epidemic checked by winter frosts and dry spring
- Significant disease developed in some areas from April onwards

2011

- Early epidemics now unlikely
- April / May threat large, if conditions favourable
  - Oakley and Robigus account for >10% of sown area
  - Further 25% of area rated 5 or less

Yellow rust 2008 and 2009



* only available in mixtures

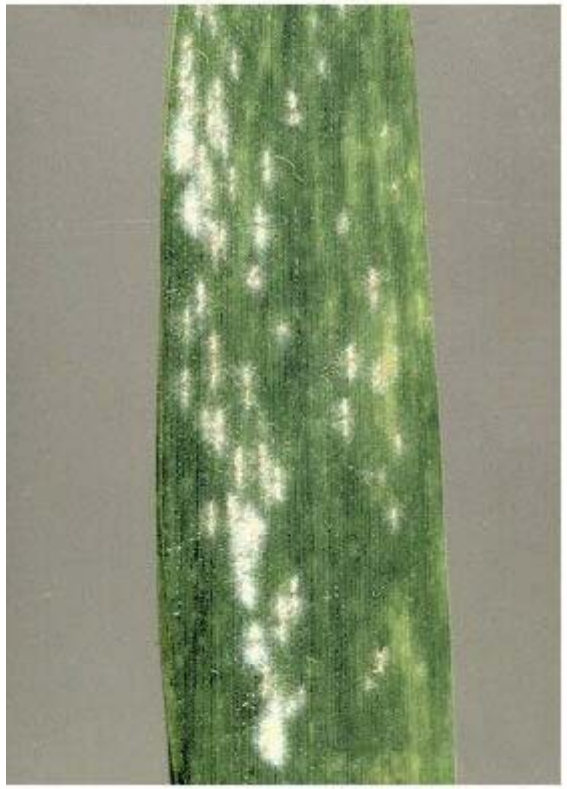
Powdery mildew

2010

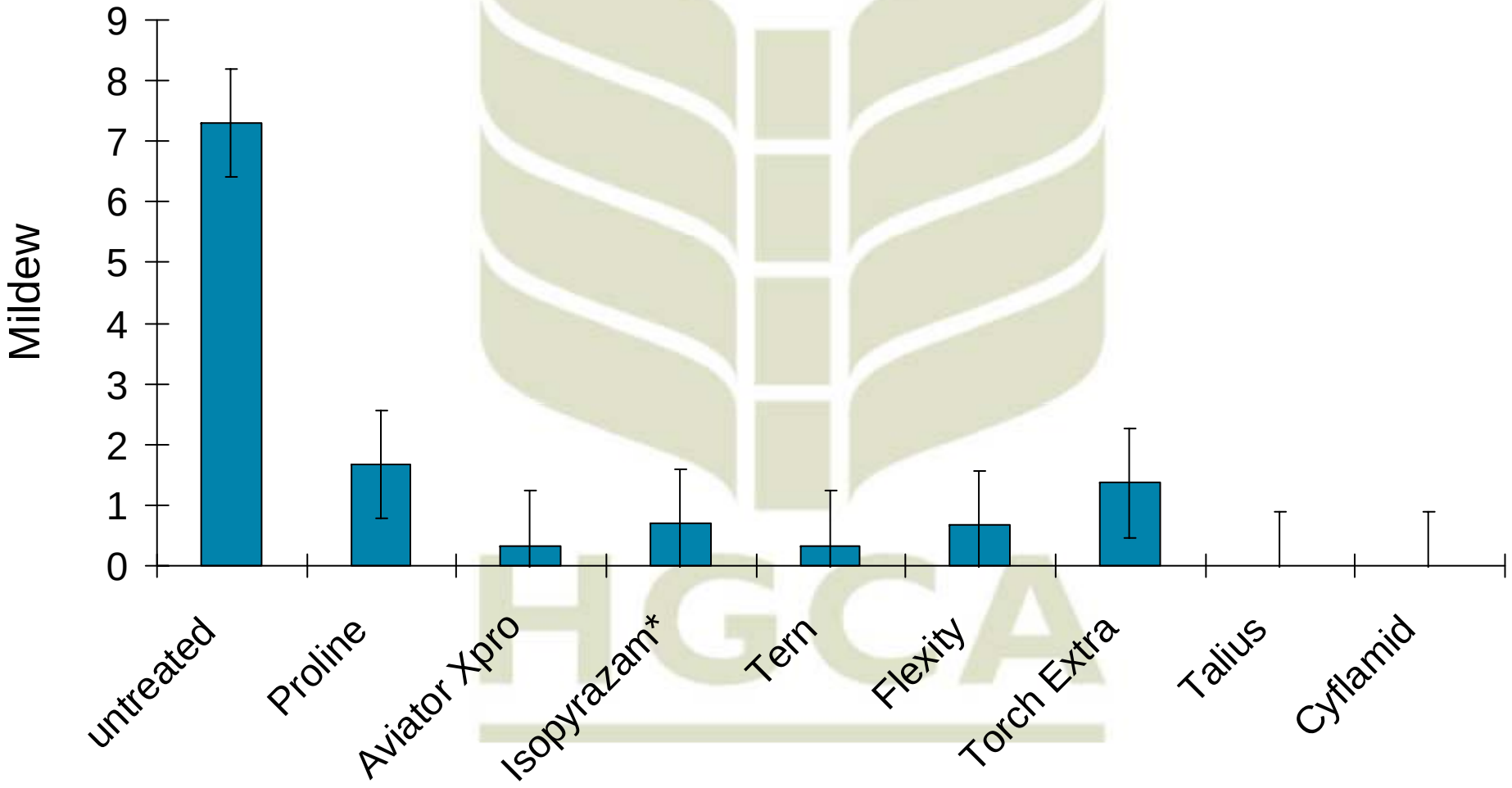
- Spring conditions generally too dry
- Slow N uptake / thin crops reduced pressure

2011

- Found widely in autumn 2010
- Later sowings / backward crops likely to favour disease development
- Significance will depend on spring conditions



2009 Half label rates at T1 and T2 – mildew



* only available in mixtures

Summary: Other diseases

Yellow Rust

- Brutus and Opus have been the most effective products;
- New SDHI Isopyrazam very active on yellow rust.
- Aviator Xpro gave good control of yellow rust, especially at more than half label rate .

Brown Rust

- Brutus and Comet (pyraclostrobin) highly active on brown rust;
- Aviator Xpro has given very good control, significantly better than prothiconazole alone (Proline).
- Isopyrazam highly active on brown rust

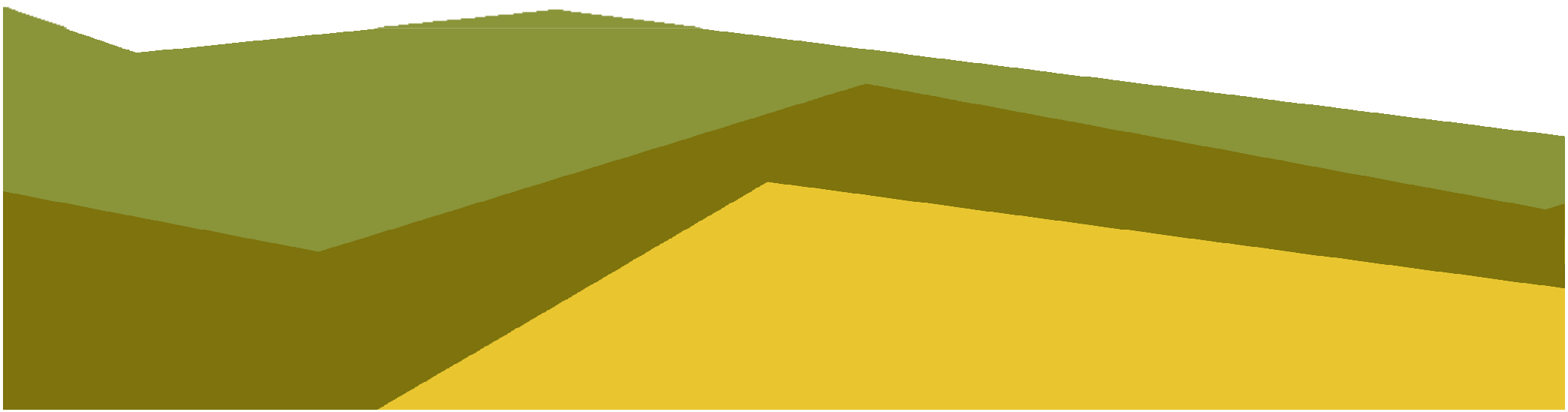
Mildew

- Data from 2009 indicates that Aviator Xpro can give good control, comparable to standard mildewicides.
- Isopyrazam adds useful activity on mildew control

For more information…

Website: **www.hgca.com/diseasecontrol**

Barley Fungicide Performance 2010 – 2011



New SDHI Products

Siltra Xpro

bixafen 60 g/l + prothioconazole 200 g/l

Bontima

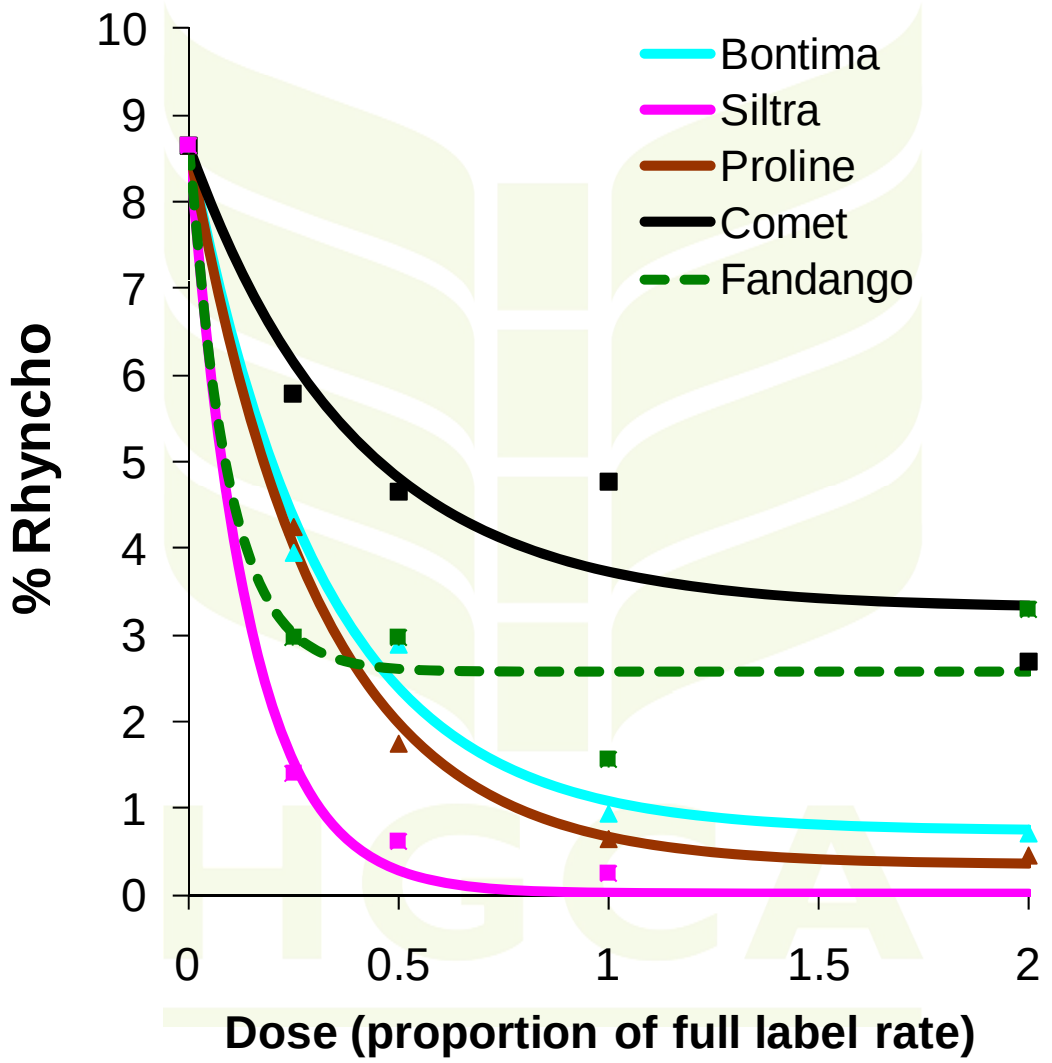
cyprodinil 187.5 g/l + isopyrazam 62.5 g/l

Fungicides included

Product Used	Full Dose (l/ha)	Active Ingredients
Bontima	2.0	187.5 cyprodinil + 62.5 g/l isopyrazam
Comet200	1.25	200 g/l pyraclostrobin
Fandango	1.25	100 g/l fluoxastrobin + 100 g/l prothioconazole
Proline *(Proline275)*	0.8 *(0.72)*	250 g/l prothioconazole *275 g/l prothioconazole (2010 only)*
Siltra Xpro	1.00	60 g/l bixafen + 200 g/l prothioconazole
Bravo	2.0	500 g/l chlorothalonil
Tracker	1.5	233 g/l boscalid + 67 g/l epoxiconazole

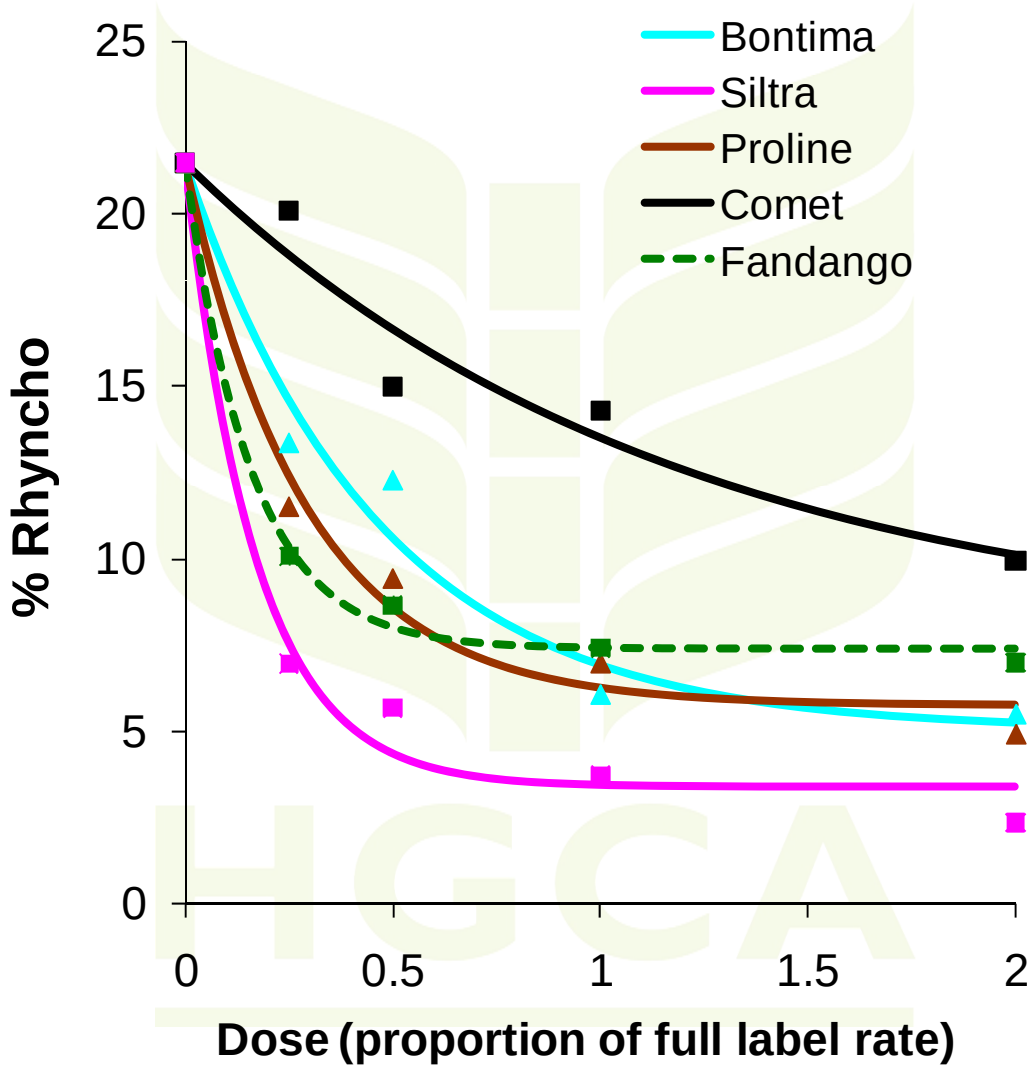
n = 4 trials

Rhynchosporium protectant activity 2009 - 2010



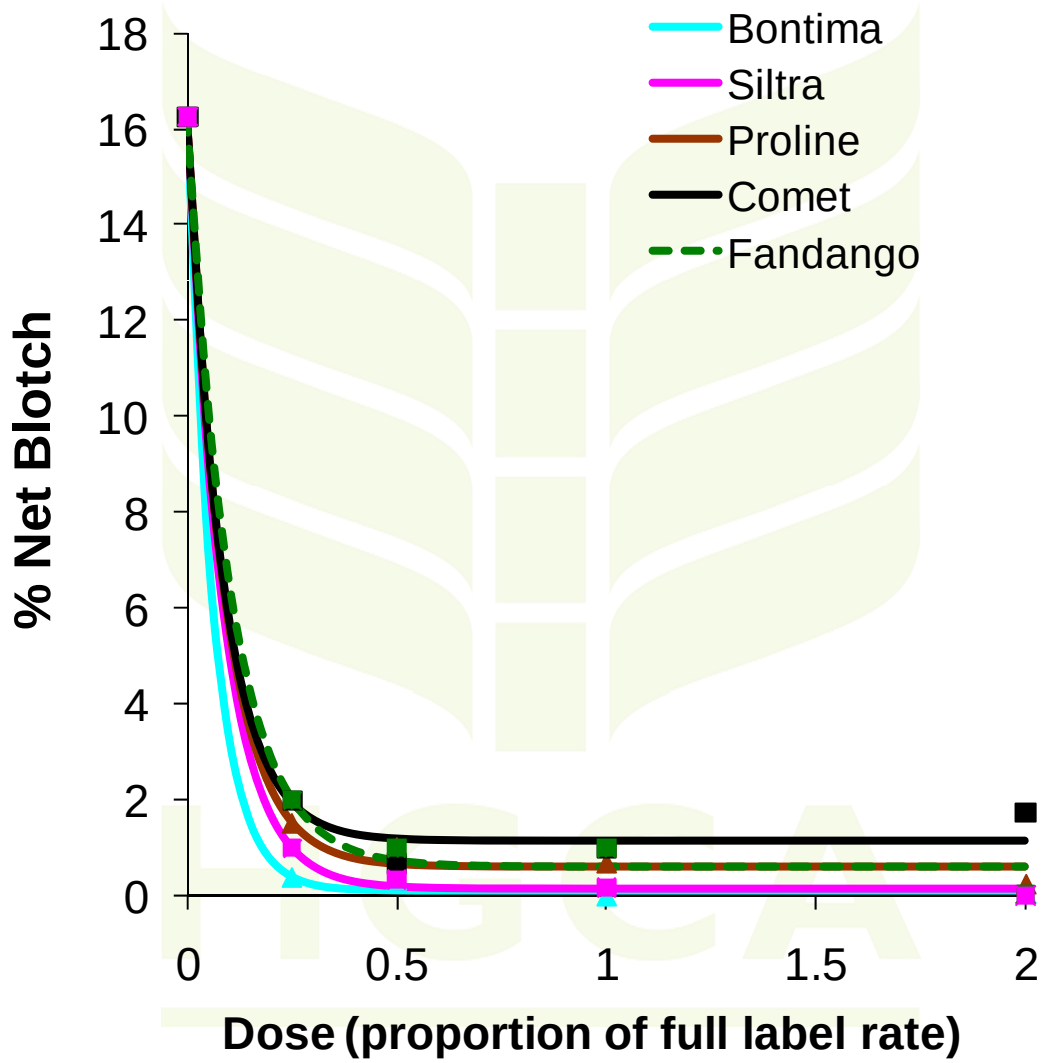
n = 4 trials

Rhynchosporium eradicant activity 2009 - 2010



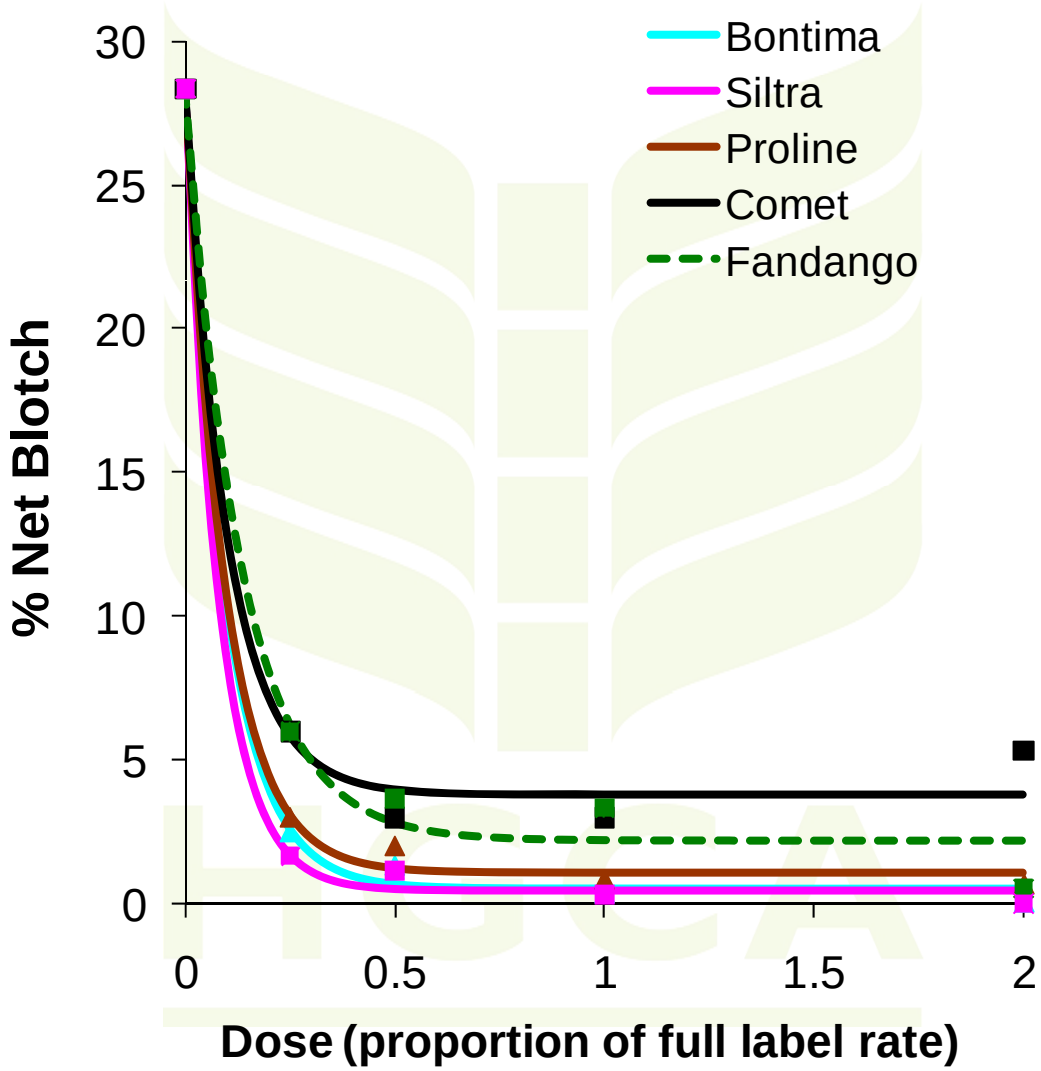
n = 2 trials

Net Blotch protectant activity 2010



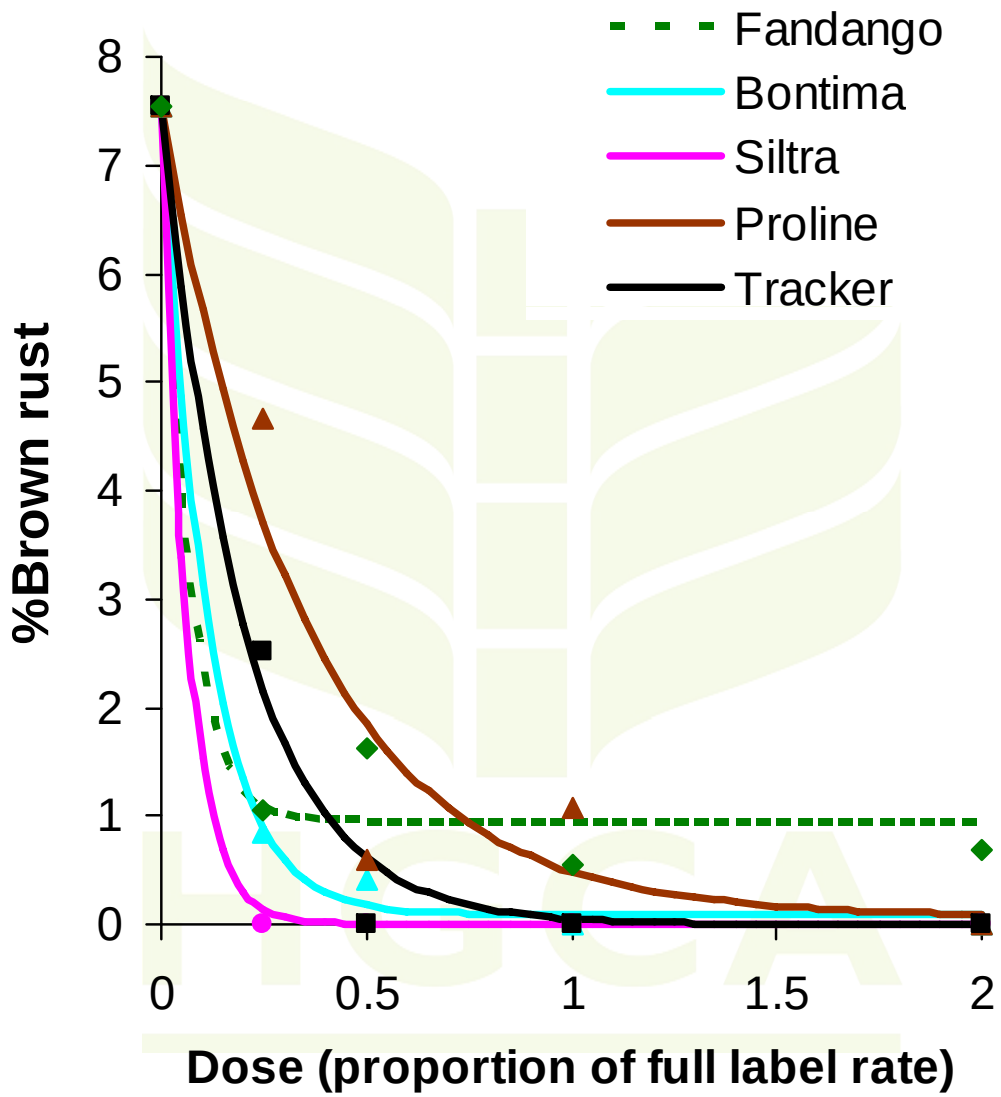
n = 2 trials

Net Blotch eradicant activity 2010



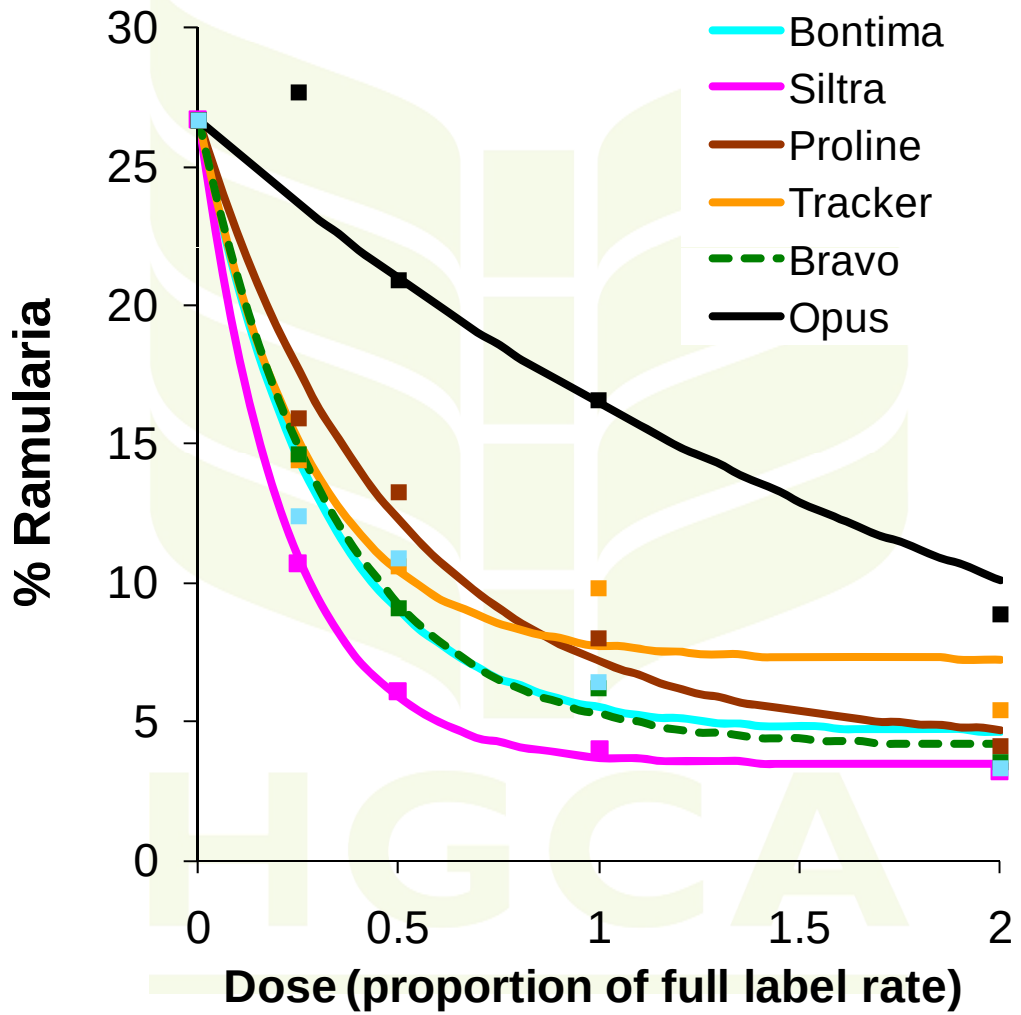
n = 2 trials

Brown rust protectant activity 2008 - 2009



n = 3 trials

Ramularia protection 2009 - 2010 Spring barley



Barley Summary

Siltra Xpro

- Very good control of all foliar diseases tested;
- New standard for rhynchosporium;
- Useful mildew activity.

Bontima

- Very good control of net blotch, ramularia, brown rust;
- Good control of rhynchosporium (but inferior to Proline / Siltra);
- Useful mildew activity.

Thank you

Fungicide performance in oilseed rape 2010 - 11

Phoma leaf spot and stem canker

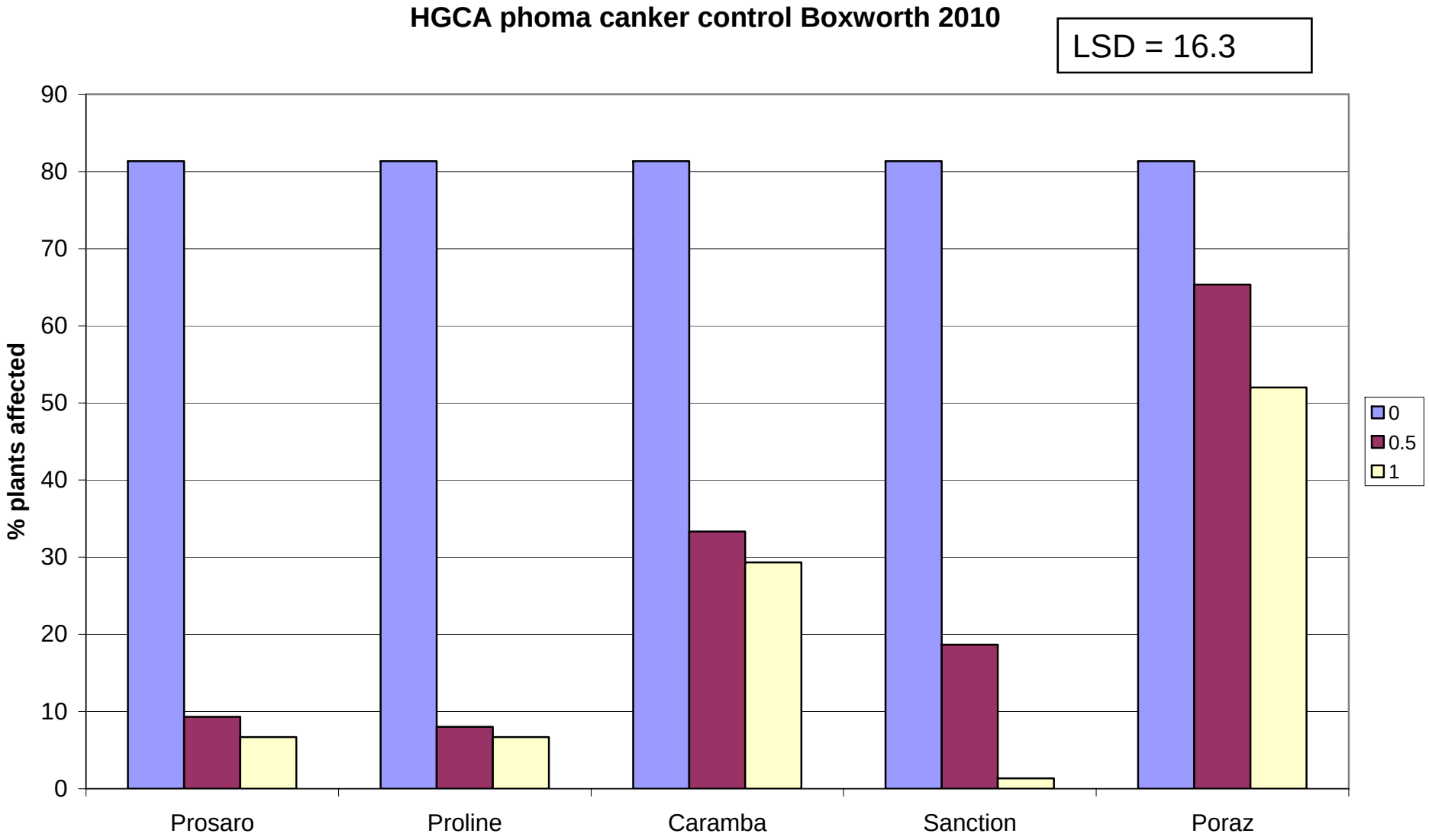
- Late epidemic in 2009/2010
- Earlier onset in 2010 – October
- Delayed by cold conditions
- Re-infection occurring in crops now

Phoma fungicide trial – spray dates 2010

- cv Catana
- Boxworth sprayed 1 Dec (GS 1,6-1,9) and 15 Feb - 42% phoma at T1
- Terrington sprayed 1 Dec (GS1,6-1,8) and 6 Jan - 47% phoma at T1

I2

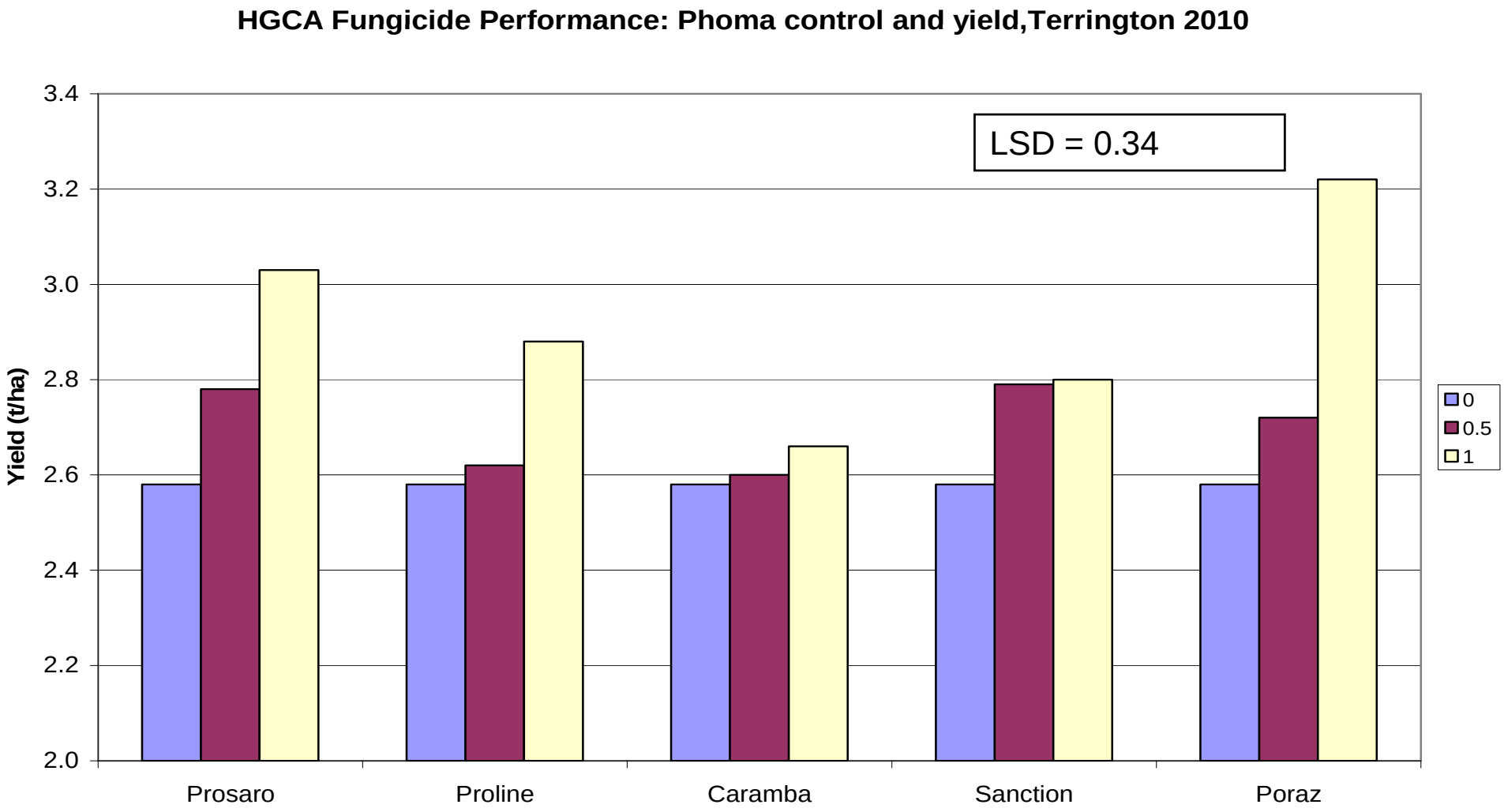
Product choice important – use Poraz as a protectant



Slide 4

I2 Change title - suggestion was 'Choose your product carefully'
laurat, 12/01/2011

Significant responses to full rate Prosaro and Poraz at drought-stressed site

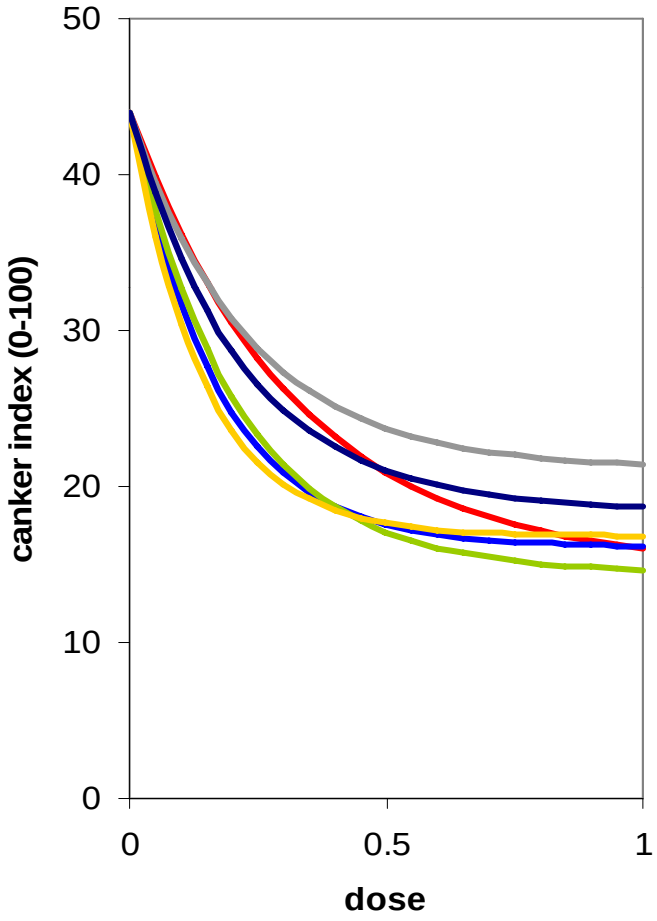


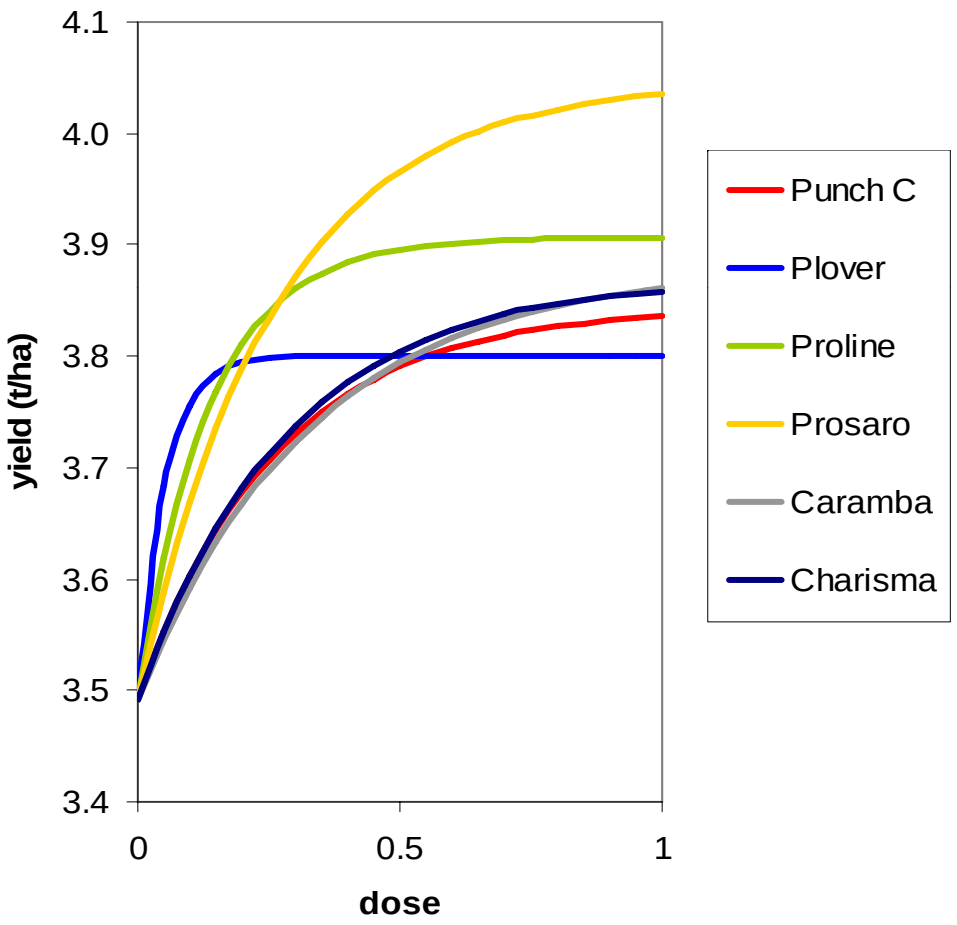
Slide 5

I5 Can we tailor this slide to 'Managing the threat? and show how disease control can be reduced from last year, but explain the threats that still remain

laurat, 12/01/2011

Product performance – moderate disease canker and yield





Source: Six HGCA trials 2006 - 2008

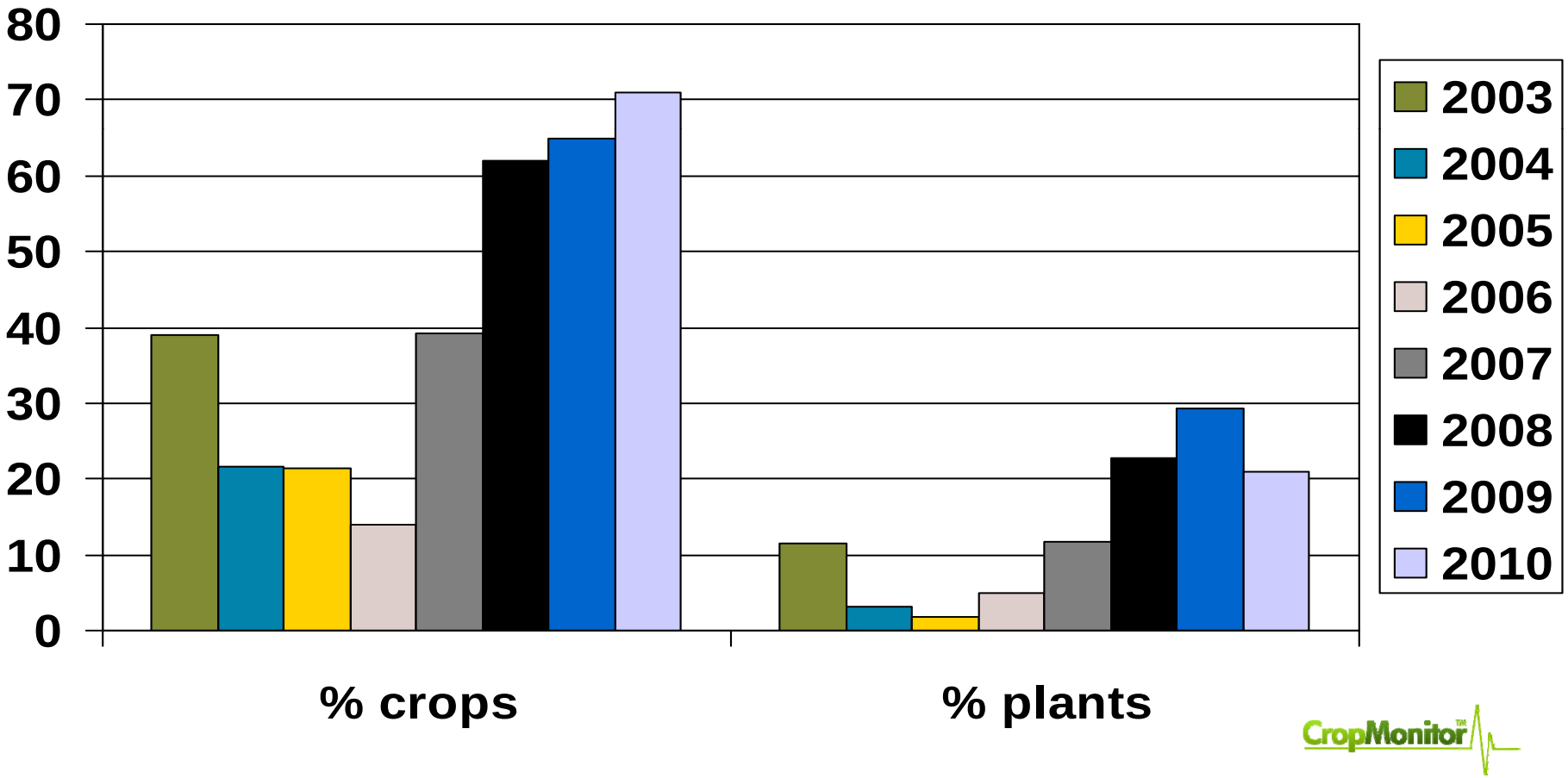
Phoma control

- Good control with fungicides at half dose
- Positive yield trends in low disease situations
- Prochloraz should be used as a protectant treatment
- Responses in drought stressed situation in 2010
- Potential for responses of 0.5 t/ha in 2011

Light leaf spot

- 2010 – epidemic less damaging to yield than usual (cold + dry spring)
- 2011– most crops had at least one autumn fungicide
- Incidence increasing in all regions – CropMonitor

Light leaf spot in spring has been increasing for the last 5 years



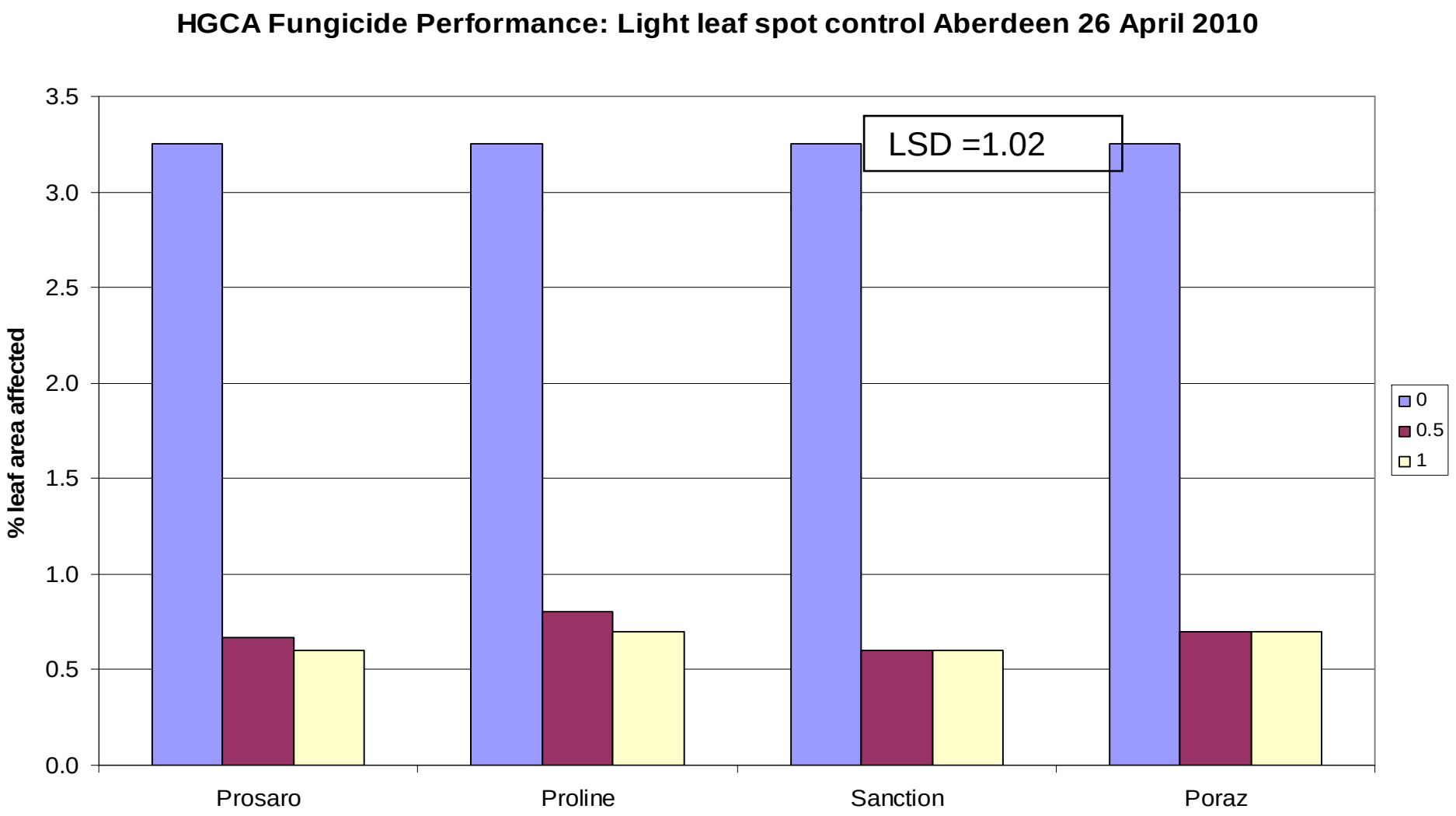
Slide 9

I8 Old logo for Crop Monitor. Will send new one.
laurat, 12/01/2011

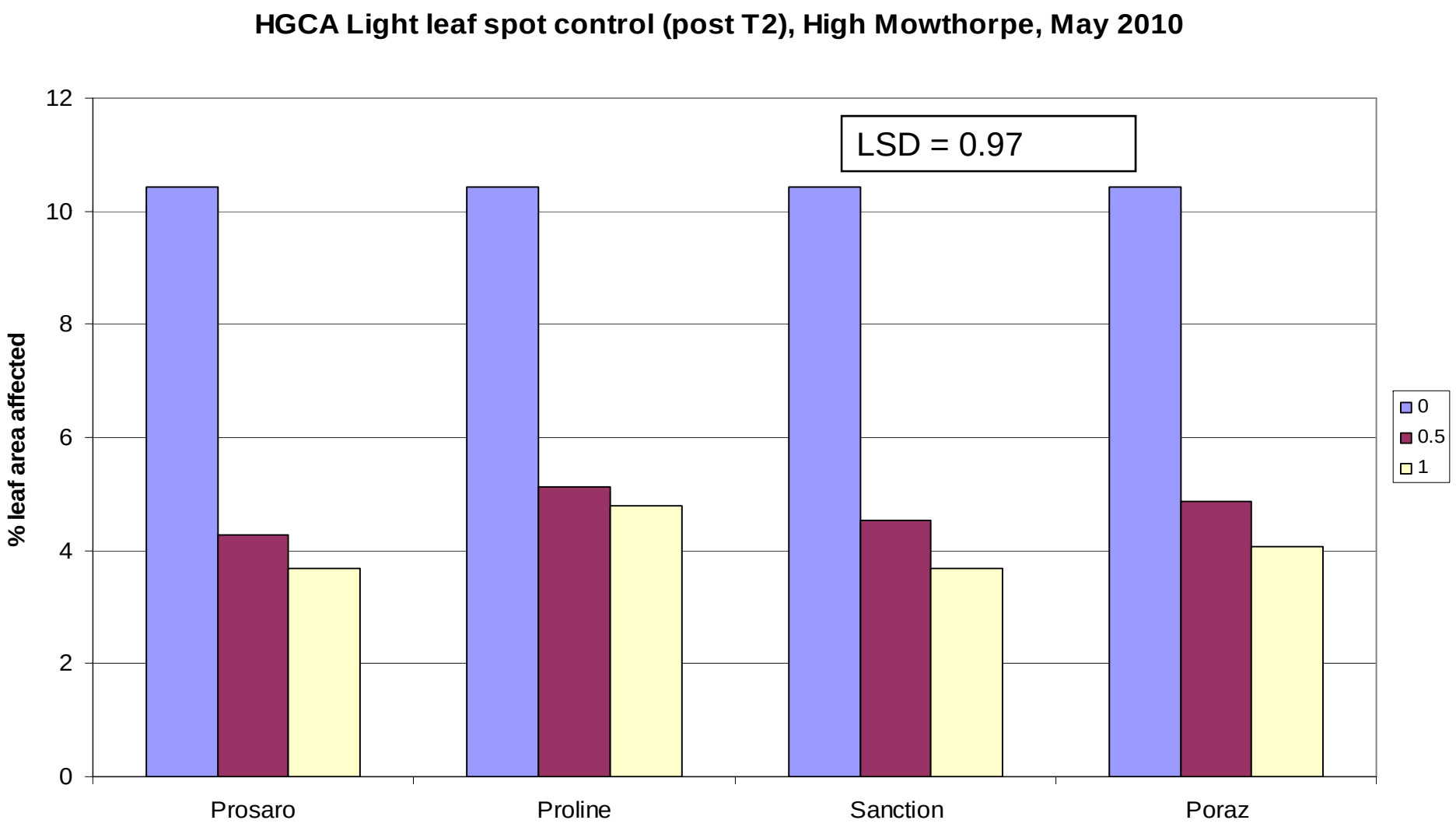
Light leaf spot fungicide trial – spray dates 2010

- cv Castille
- Malton sprayed 4 Dec (GS 1,6) and 8 April
- cv NK Bravour
- Aberdeen sprayed 28 Oct (GS1,4) and 26 April

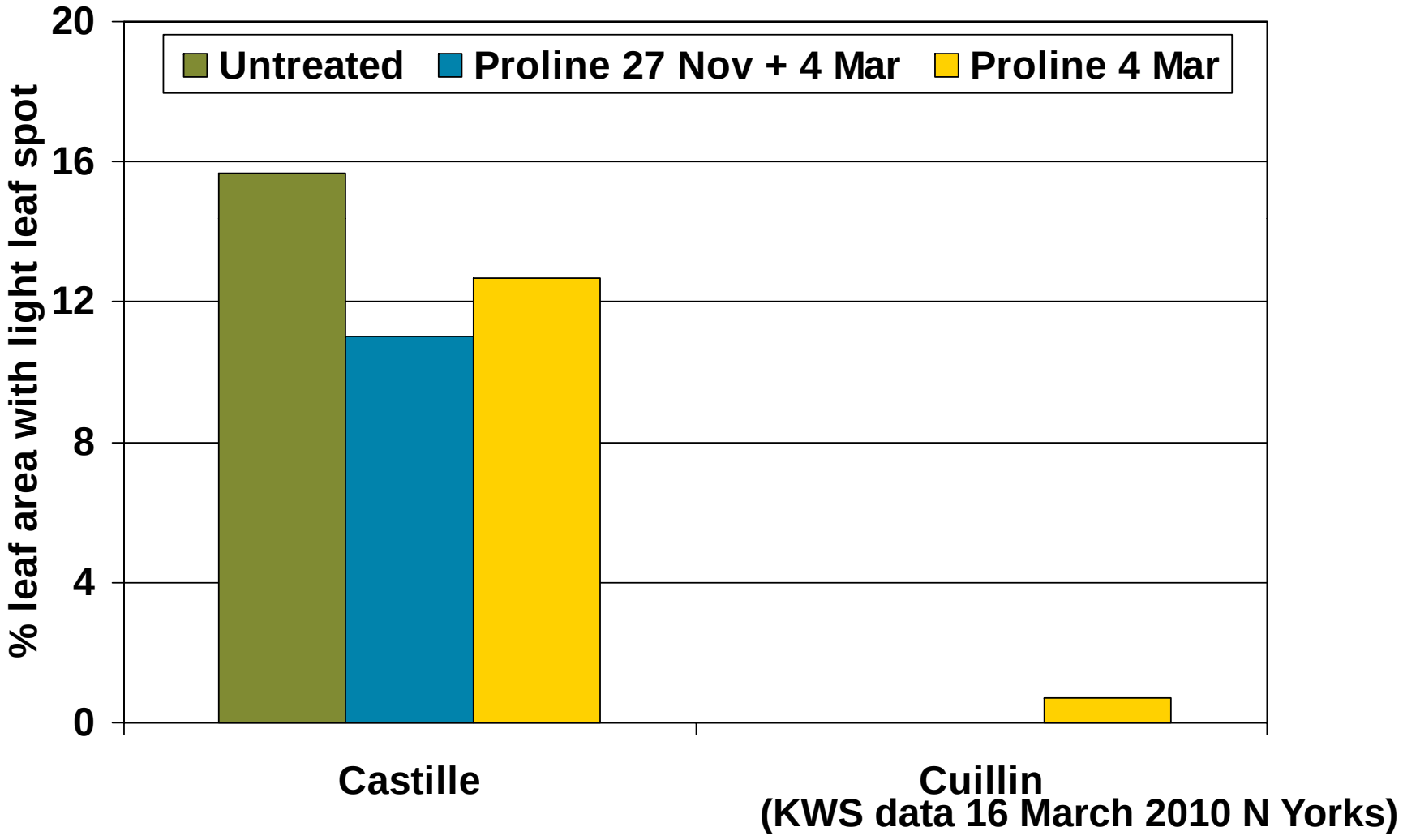
All treatments gave light leaf spot control in Aberdeen - low severity



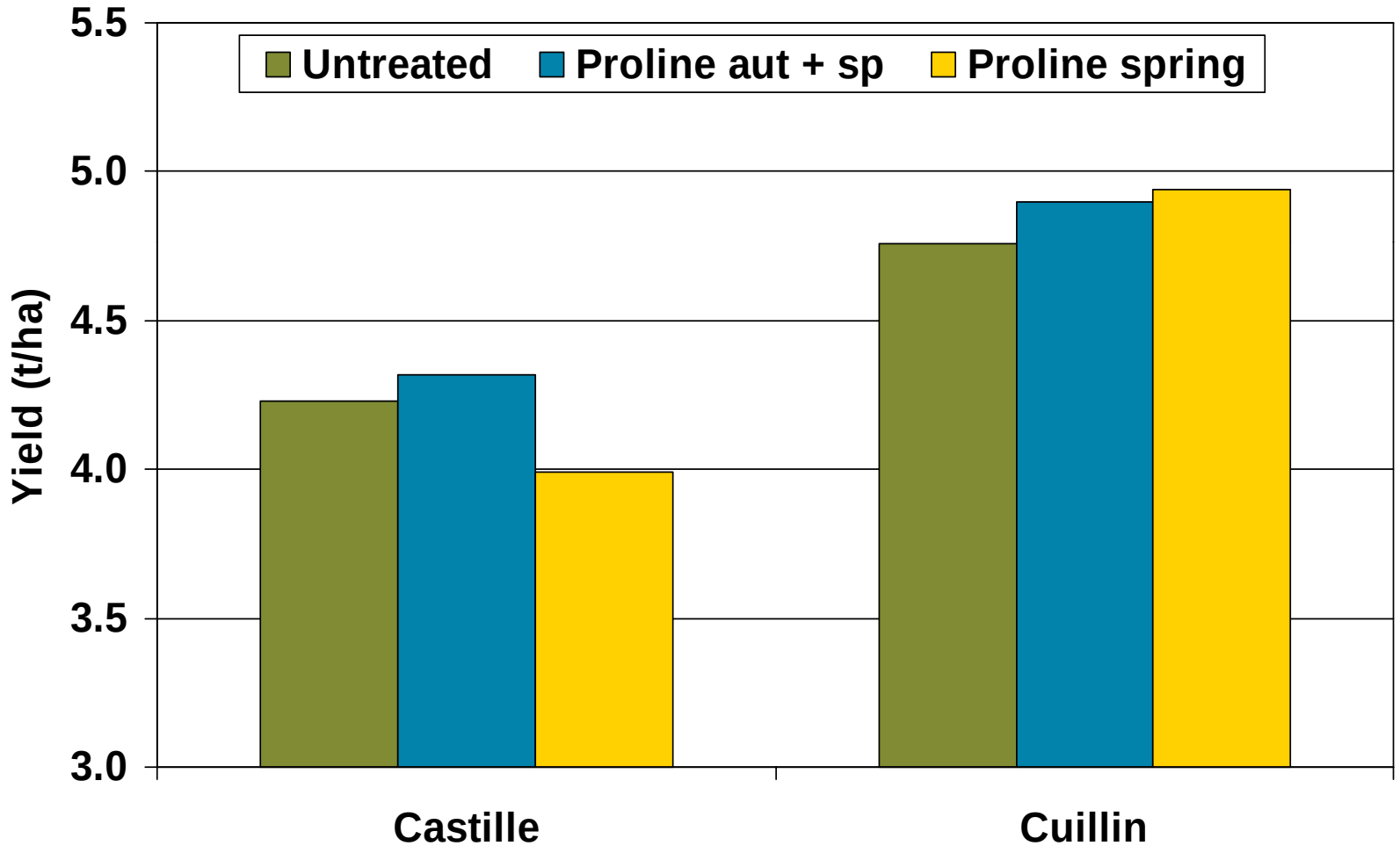
All treatments gave control of light leaf spot, Malton, N Yorks – no yield differences



Use resistant varieties for light leaf spot control



Large yield benefits from varieties with good light leaf spot resistance



Castille 4.19 Cuillin 4.84 LSD =0.2

(KWS data 2010 N Yorks)

Light leaf spot control

- Importance in England still underestimated
- 15% planted affected at stem extension = 5% yield loss
- Older azoles still giving control and economic responses
- Exploit varieties with good resistance where farms have difficulty controlling light leaf spot

Sclerotinia stem rot in 2010

- Late infection recorded into June
- Sclerotinia infection found after some single fungicide sprays
- Two spray programmes worked well at high risk sites

SkleroPro infection model – Koch et al. 2006

- Minimum requirements for infection:

  7ºC and 80% RH for 23hr

- Potential decision making tool

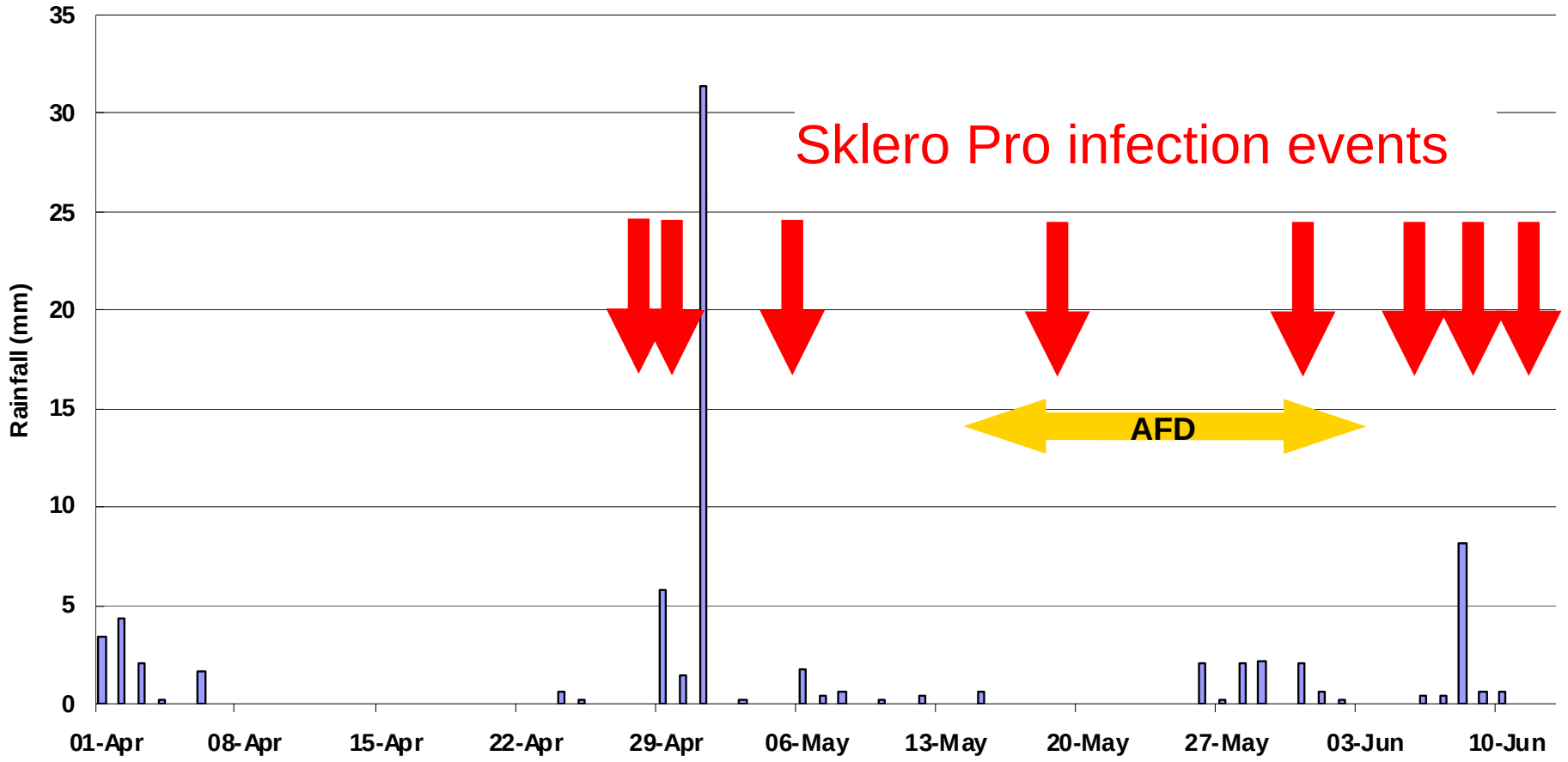
- Identifies infection events in England

Slide 17

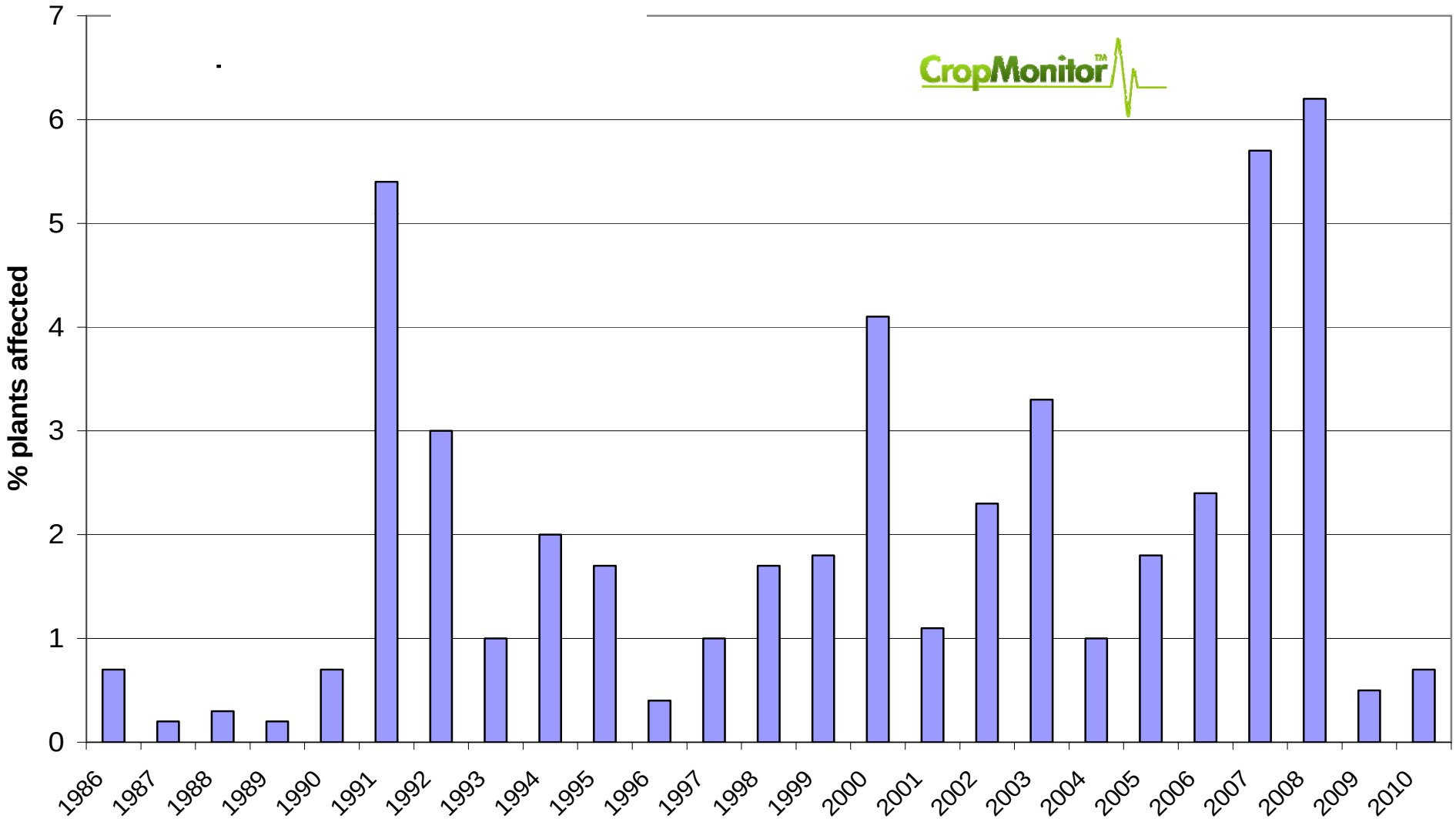
I9 Enlarge the reference for Koch and give longer explanation of SkleroPro and how it is not a tool that growers can easily use

laurat, 12/01/2011

Fungicide persistence 3 weeks – needed 2 sprays in 2010



Sclerotinia surveys WOSR England 1986-2010 – low in 2010



Slide 19

I6 Crop Monitor logo

laurat, 12/01/2011

Sclerotinia incidence (% plants)

Region	2007	2008	2009	2010
East	1.9	7.9	0.1	1.3
M & W	2.5	2.0	0.9	0.3
North	1.6	3.4	0.2	0.2
South East	6.5	6.8	1.8	0
South West	34.7	7.6	0.4	0.9
Mean	5.7	6.2	0.5	0.7

Slide 20

I7 Crop Monitor logo

laurat, 12/01/2011

Sclerotinia fungicide trial – spray dates 2010

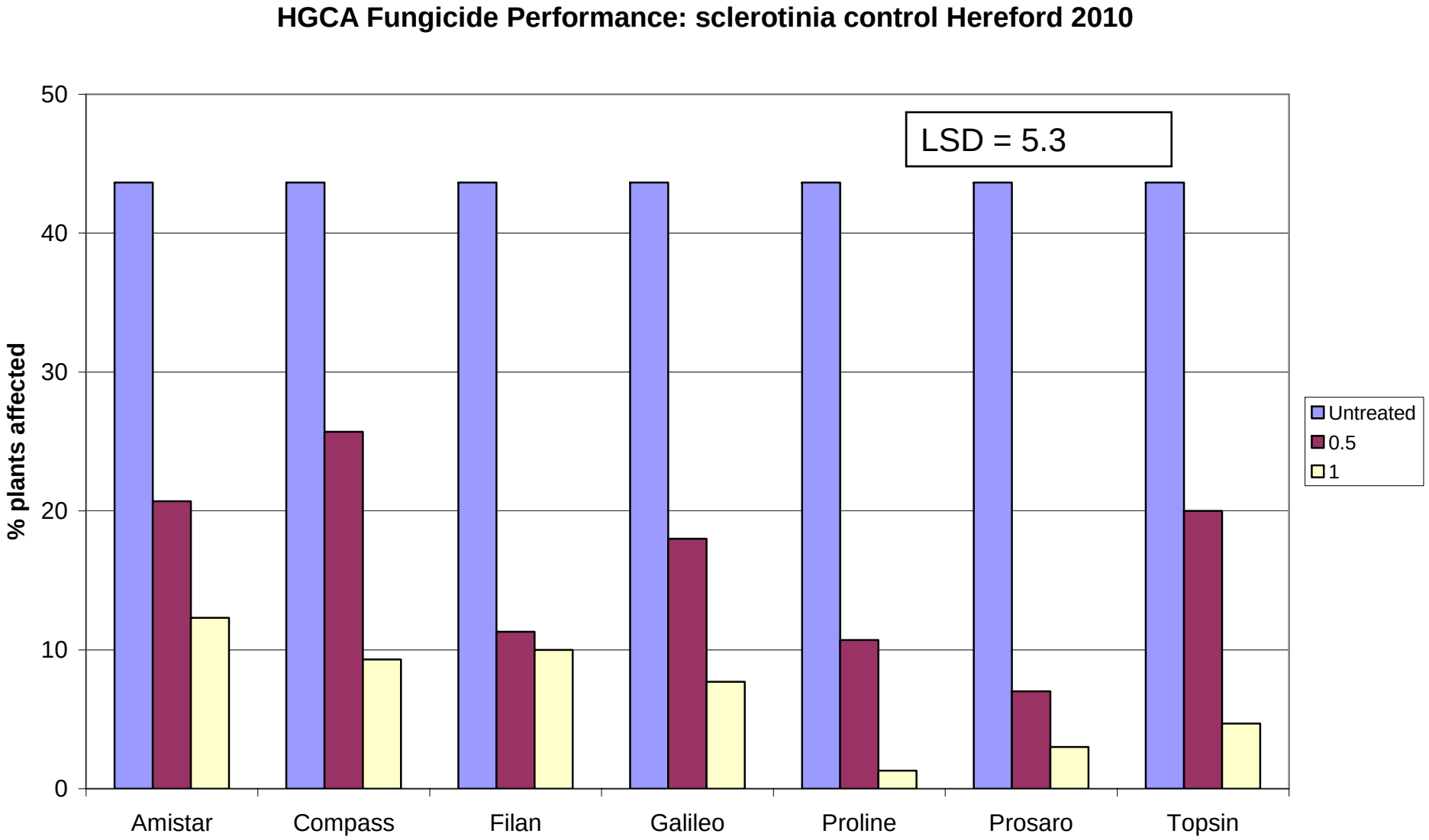
- Hereford cv DK Cabernet

  Sprayed 13 May GS 4,5

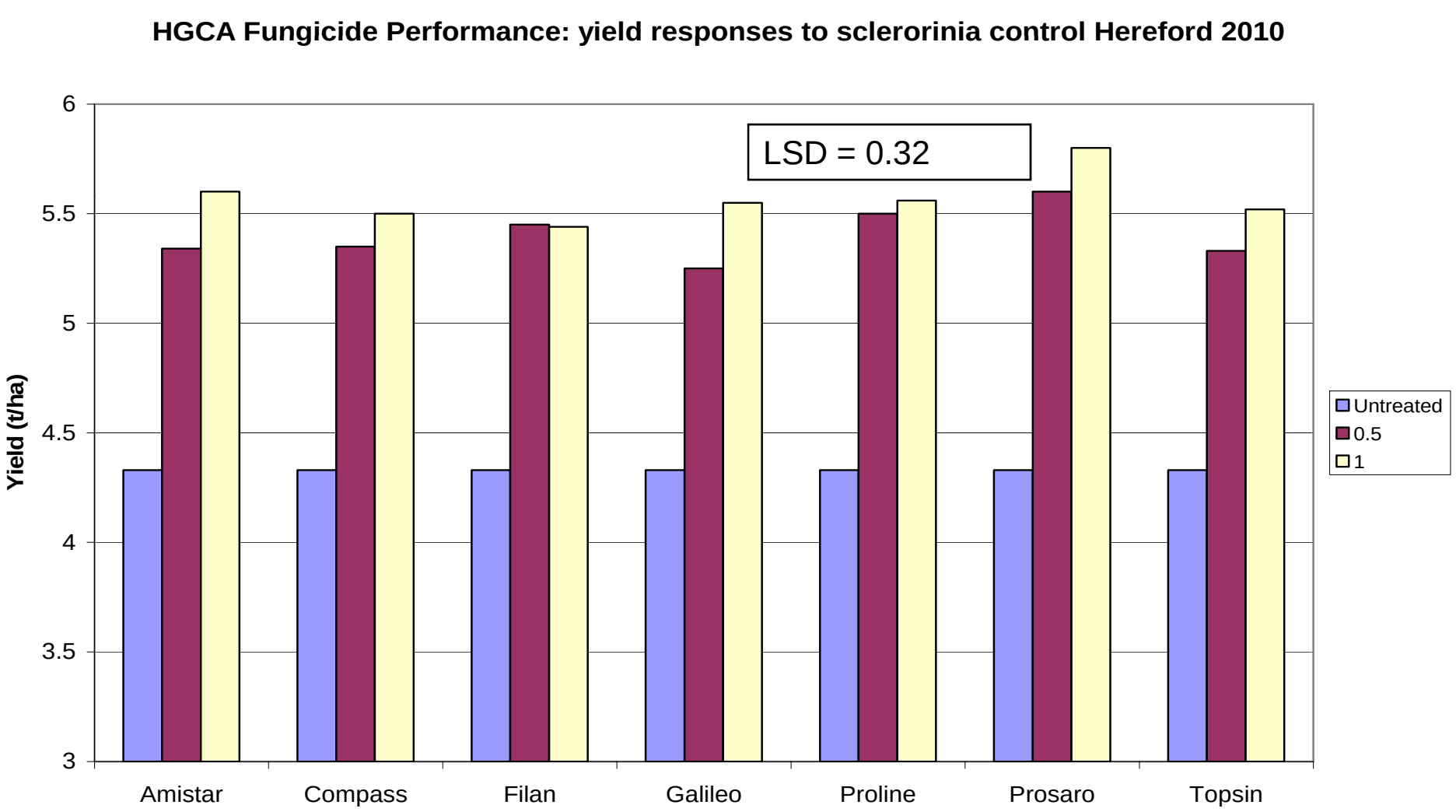
- Essex cv Vision

  Sprayed 5 May GS 4,5

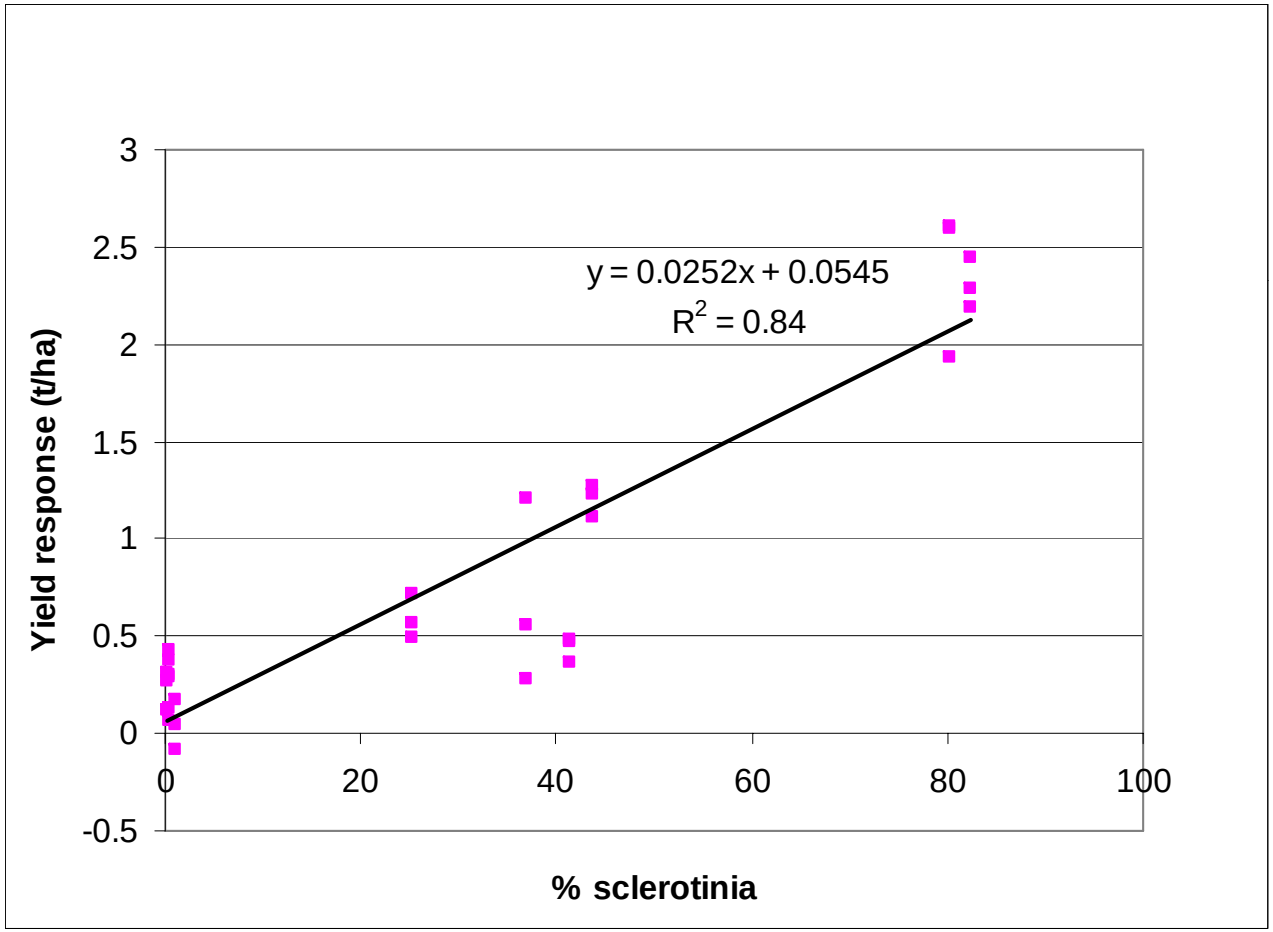
Products stretched in 2010 by late flowering infection (early June)



Responses c. 1 t/ha from all products, Hereford 2010



Untreated sclerotinia incidence and yield response to control



(data taken from 3 products at full dose from HGCA-funded Fungicide Performance trials 2006 - 2010)

Action points on sclerotinia control

- Higher risk for next few years
- Sclerotinia control usually justifies high doses
- Spray timing is critical
- Protectant activity for 3 weeks
- Consider 2-spray programmes for high risk sites