



Department of
Agriculture and Food



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Unravelling factors affecting Sclerotinia stem rot in canola particularly in the light of fungicide spray decisions



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Outline

1. Sclerotinia levels
2. Epidemiology
3. 2014 Petal testing
4. Case studies
5. Key messages



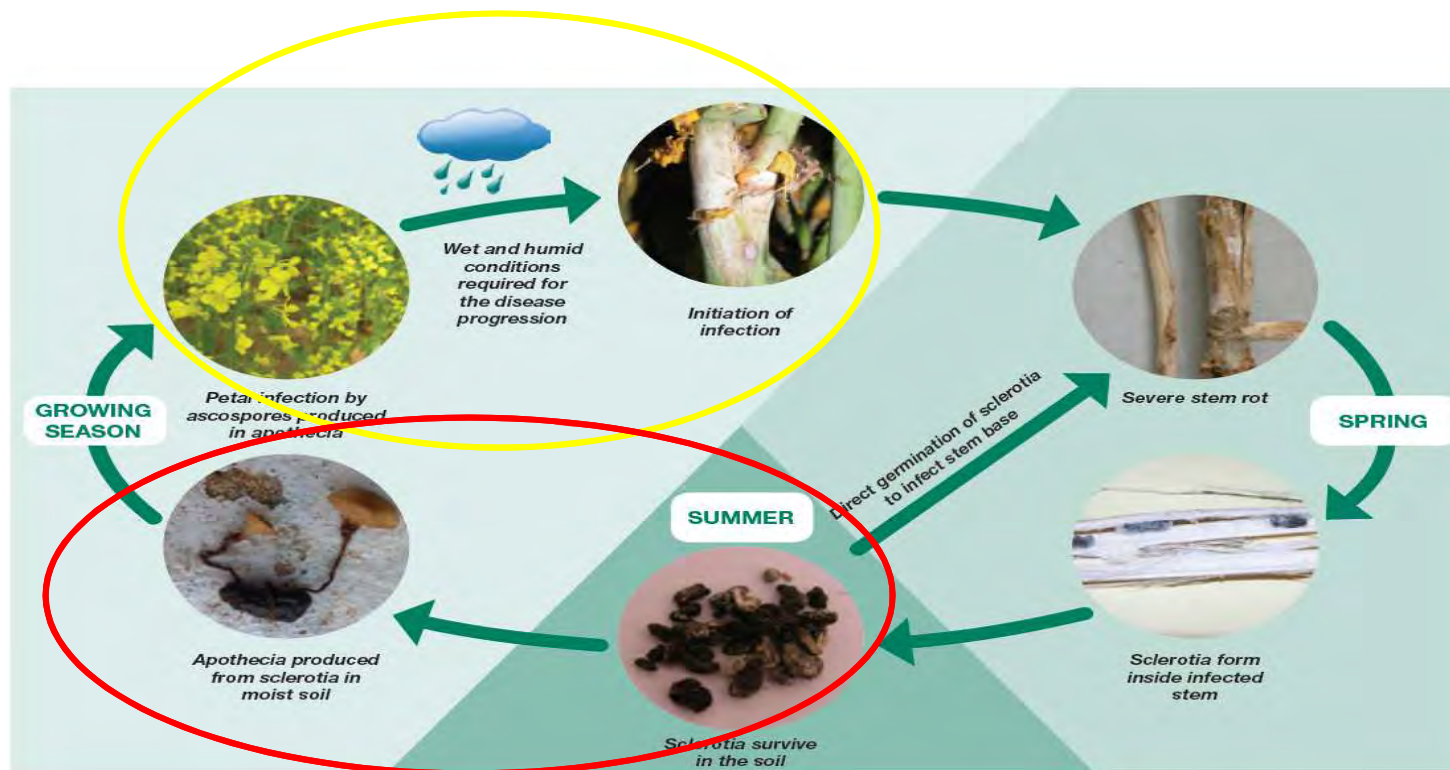
Photo: Kith Jayasena, DAFWA

Sclerotinia Stem rot incidence in WA in 2014

- Widespread but not severe
- Few crops still suffered economic losses
- Early development of apothecia
- Less favourable conditions post flowering
- Sclerotinia caused an estimated loss of \$23M in 2014



Sclerotinia Life Cycle



Epidemiology of SSR: Pre-infection

- Spore trapping
- Apothecia monitoring
 - Petal testing



Petal Testing

- 2010-2014
- 6 sites
- Daily temperature, rainfall and relative humidity recorded

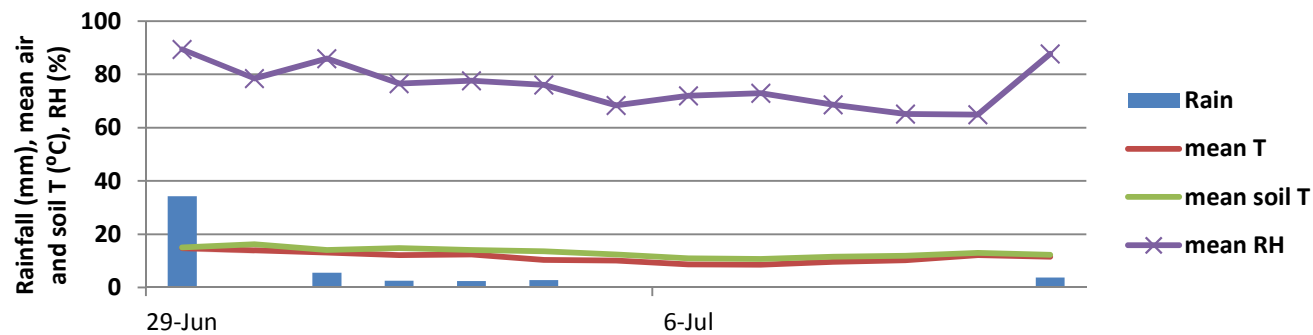


Petal testing – Key findings

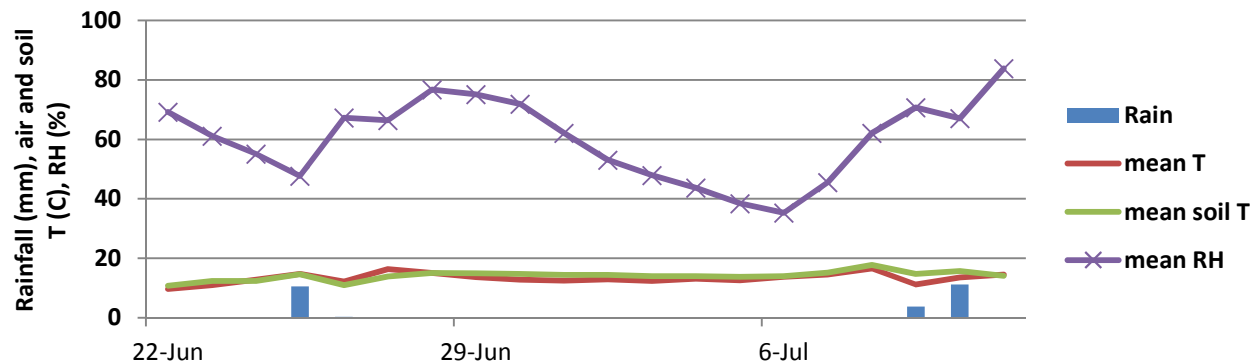
- Timing and frequency of petal infection depended on
 - Rainfall*
 - Relative humidity*
- Air and soil temperature not significant



Conditions prior to max petal infection



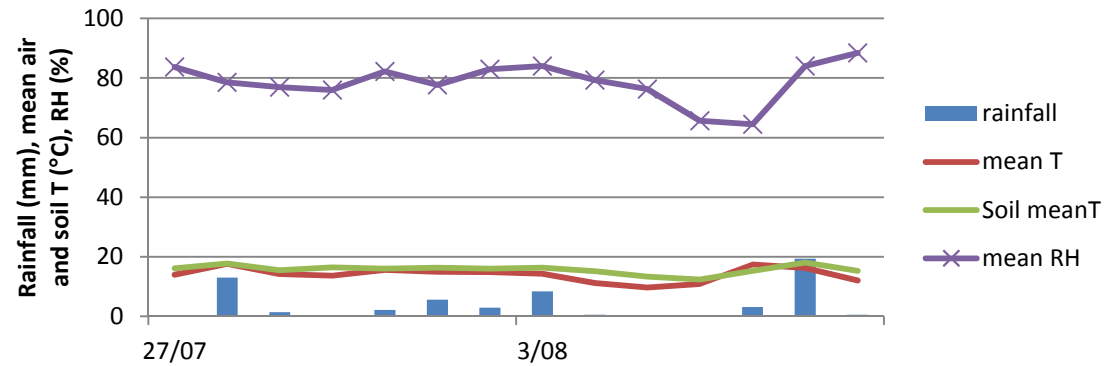
Conductive year



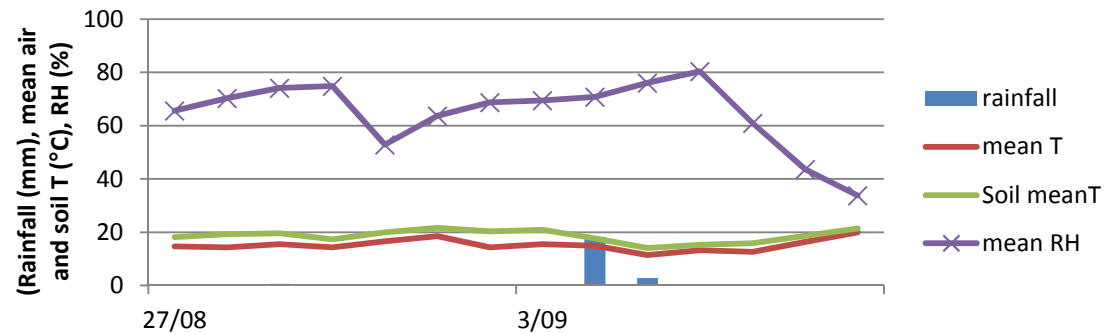
Non conducive year



Conditions after max petal infection



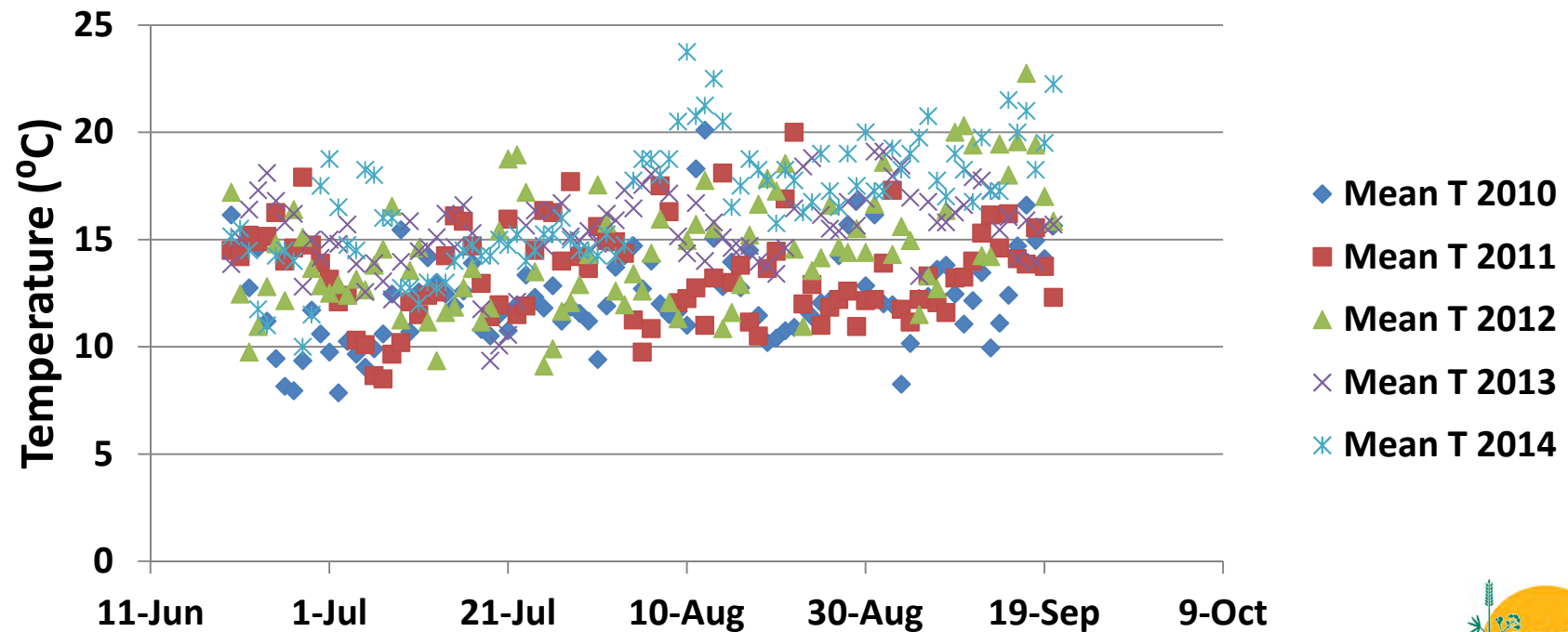
Conductive year



Non conducive year



Mean air temperature (Chapman)

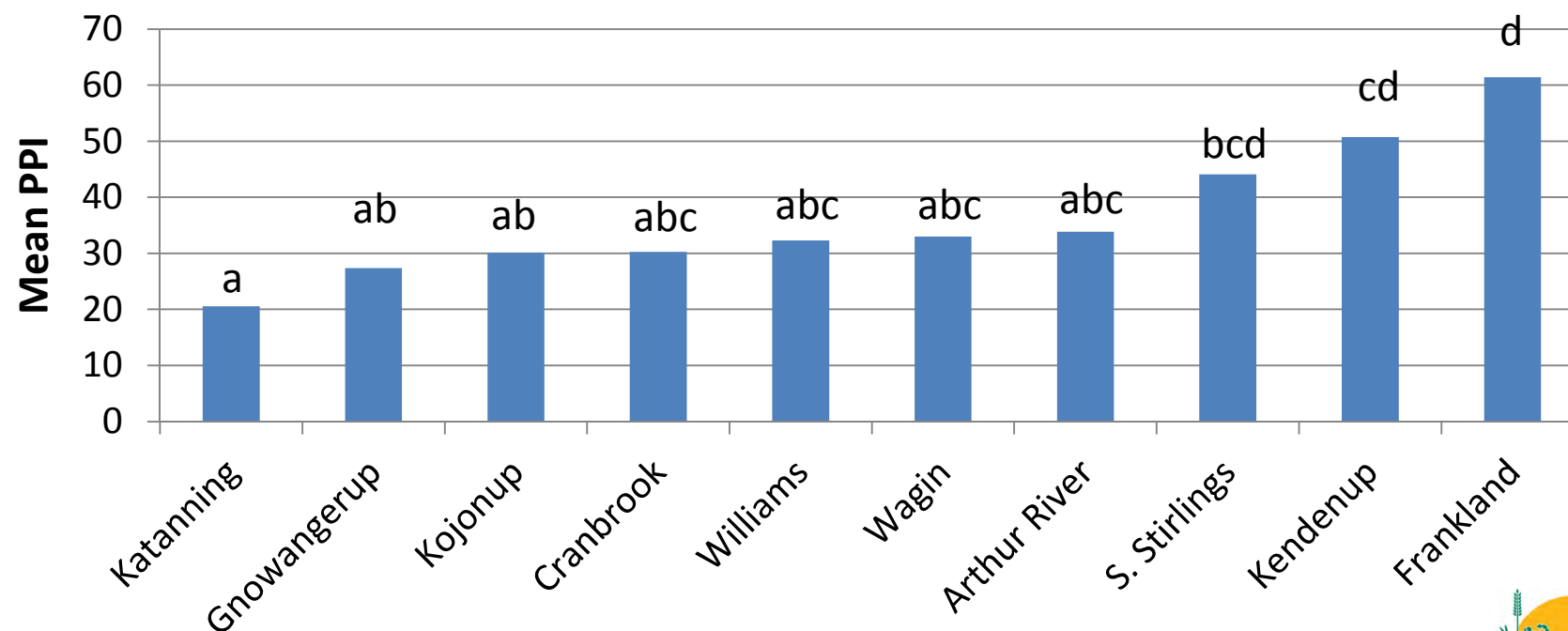


Large scale petal testing in 2014

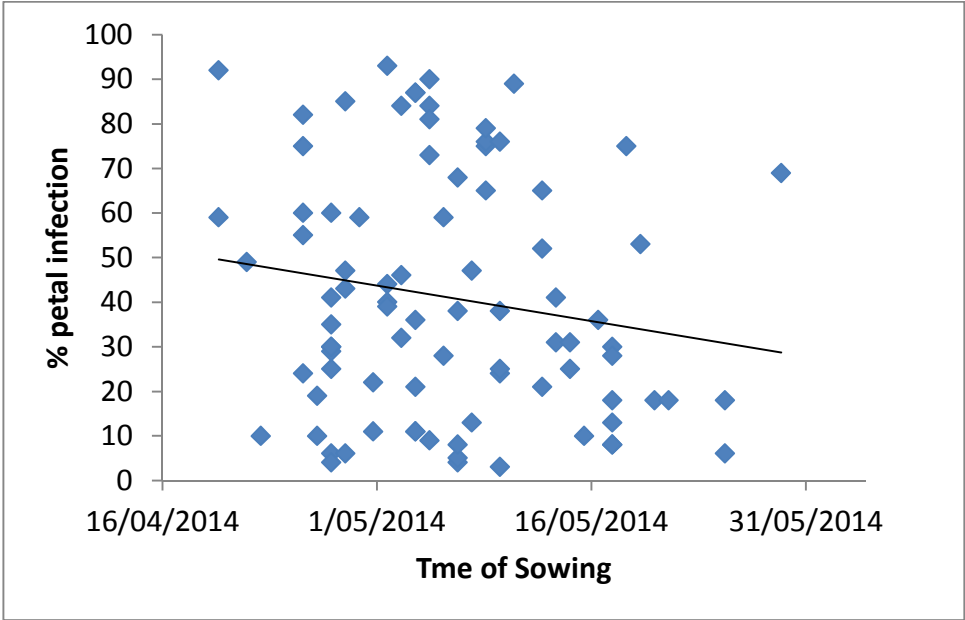
- Southern/South Coastal region
 - 10 shires
- >200 samples
 - 10 varieties
- sclero selective medium



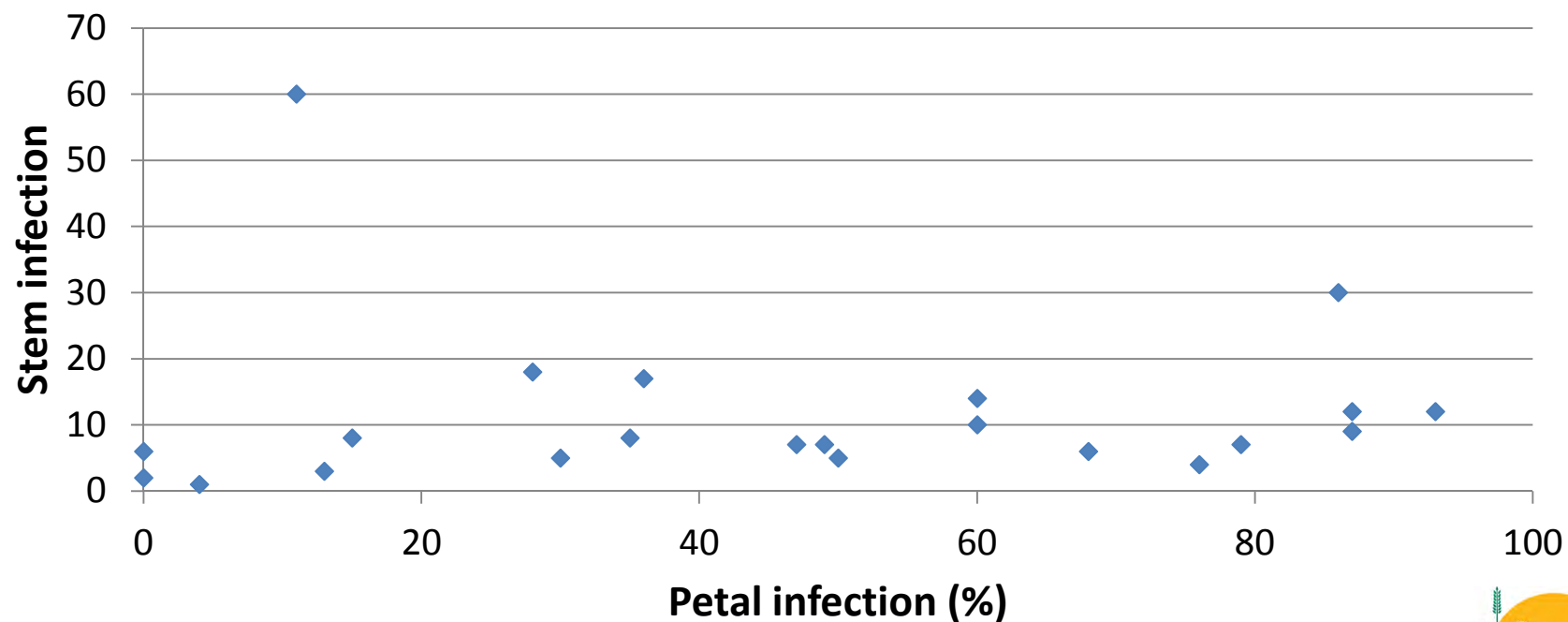
Mean Petal infection in different shires



Percent petal infection-TOS



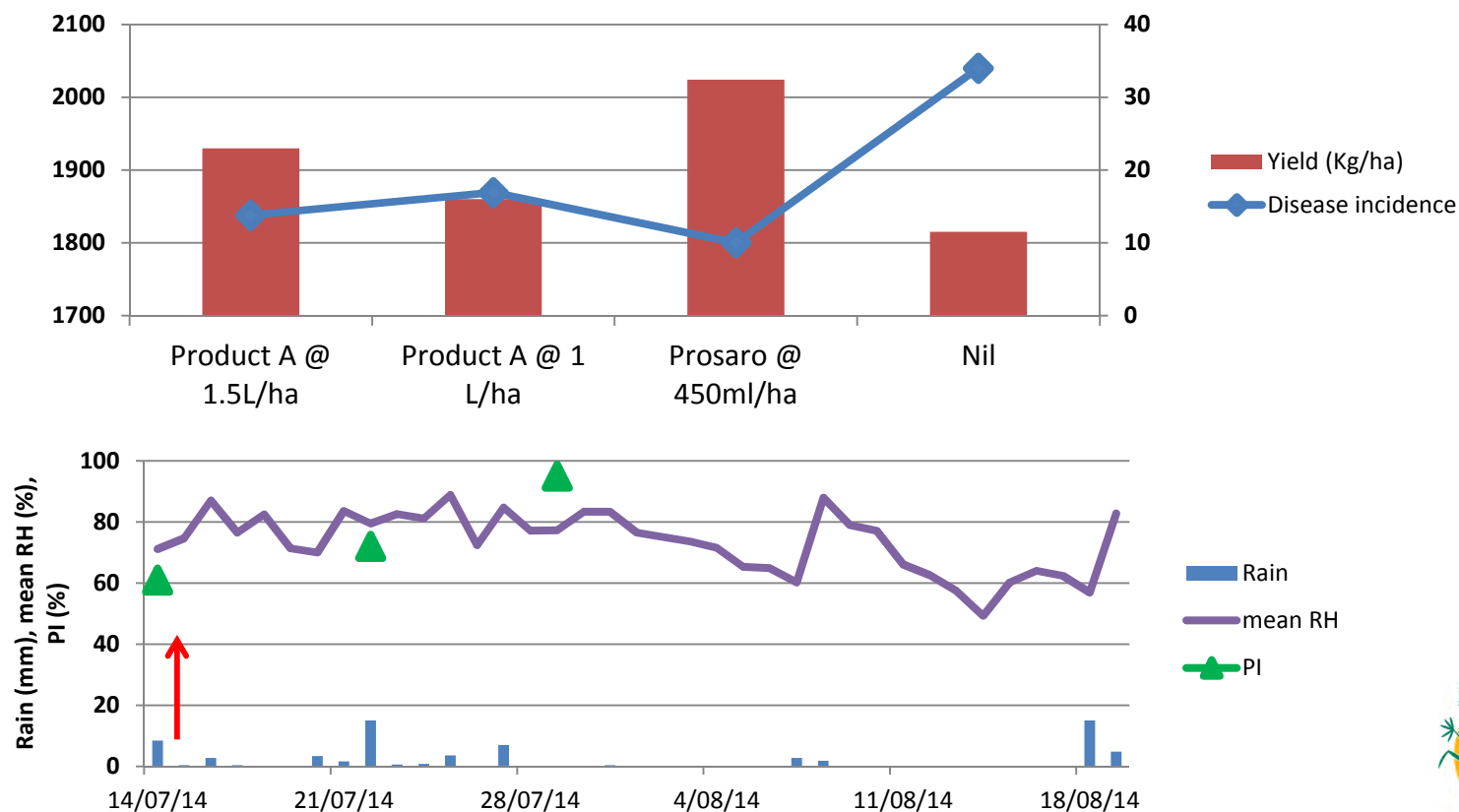
Petal infection vs Stem infection 2014



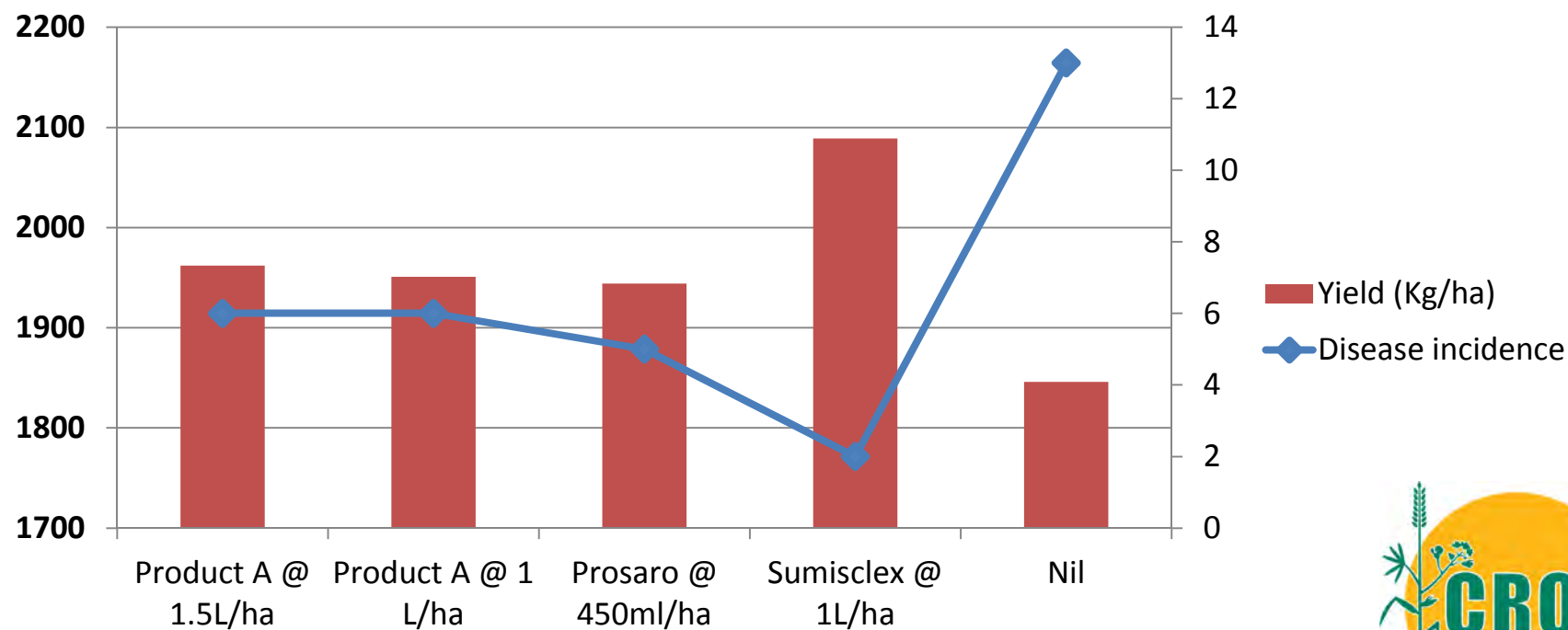
From 20 of 200 paddock validated for stem infection



Case study 1: Moora

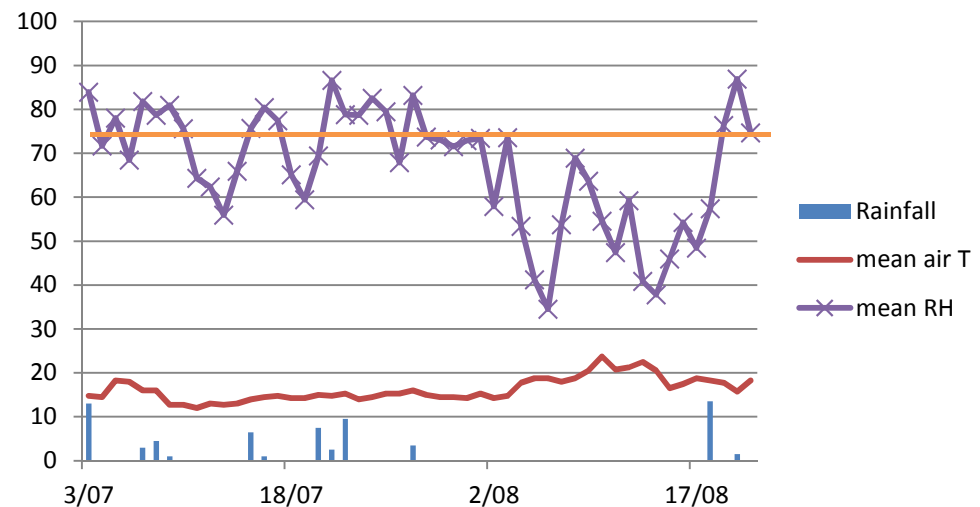


Case study 2: Wagin



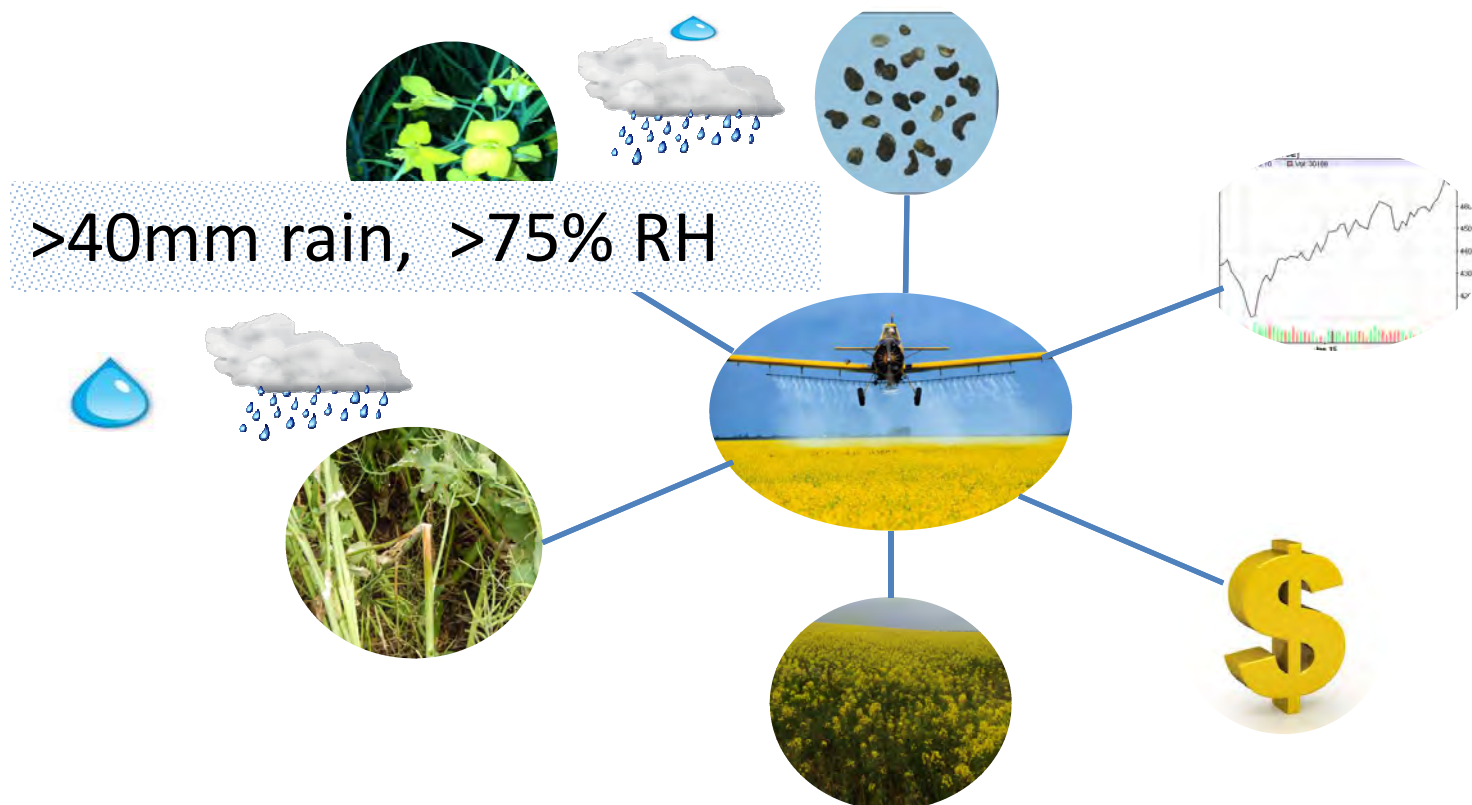
Row spacing, Prosaro and Density

Treatment	Disease incidence	Isd	Yield/ha	S.E.
Prosaro @ 450ml/ha				
Nil	24	12	2359	75
Treated @ 30% bloom	13*		2568*	
Variety				
Cobra	16*	4	2247	43
Hyola 404	21		2725*	
Row spacing				
22cm	18	4	2452	51
44cm	19.5		2520	
Plant density				
15 plants /m ²	17.7	4	2418	41
30 plants /m ²	19.7		2554*	



Estimated ROI from using Prosaro \$50/ha

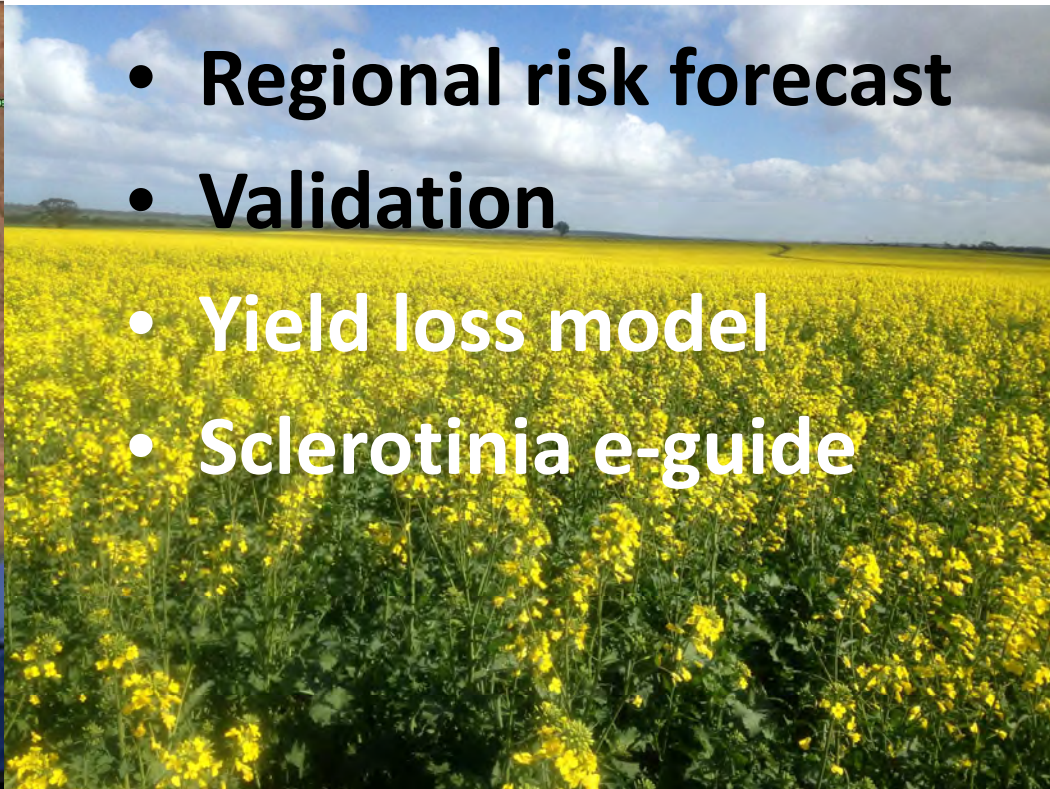
Decision to spray



Where to from here?



- Regional risk forecast
- Validation
- Yield loss model
- Sclerotinia e-guide



Key Messages

- Breakthrough in understanding the triggers
- >40mm rain and >75% RH in the 3 week period before and after early bloom
- Temperature doesn't seem to be a limiting factor
- WA's first Sclerocast is on the way



Acknowledgements

- Grains Research and Development Corporation
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Thank You





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Questions?

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