



Department of  
Primary Industries and  
Regional Development

Protect  
Grow  
Innovate

PestFacts WA Webinar

# Broadacre crop disease outlook for the WA grainbelt in 2023

## Project acknowledgements:

- **CES2204-001RTX – IPMforGrains.**
- **DAW2104-003RTX - Disease surveillance and related diagnostics for the Australian grains industry (Western region).**
- **DAW2112-002RT - Disease epidemiology, modelling and delivery of management decision support tools.**
- **DAW2104-002RTX- Sclerotinia management for narrow leaf lupin crops in Western Australian farming systems.**
- **DAW2104-001RTX - Management of spot form of net blotch in the low rainfall zones of Western Australia.**

# Webinar agenda

WA's broadacre crop disease outlook for 2023.

Geoff Thomas. DPIRD research scientist.

Net form net blotch risk this season.

Kithsiri Jayasena. DPIRD research scientist.

Question and Answer session.





Department of  
Primary Industries and  
Regional Development

Protect  
Grow  
Innovate

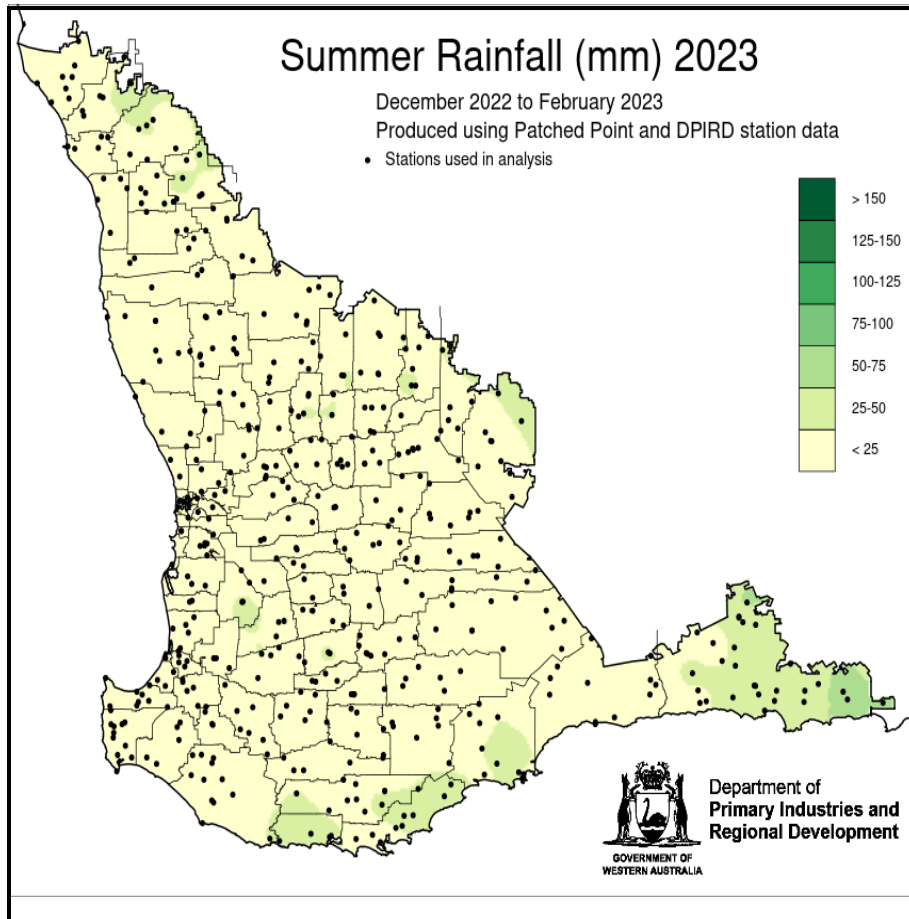
# Broadacre crop disease outlook 2023

Geoff Thomas, Andrea Hills, Ciara Beard, Kith Jayasena, Jean Galloway,  
Jason Bradley, Zia Hoque, Kylie Chambers, Ben Congdon, Daniel Huberli

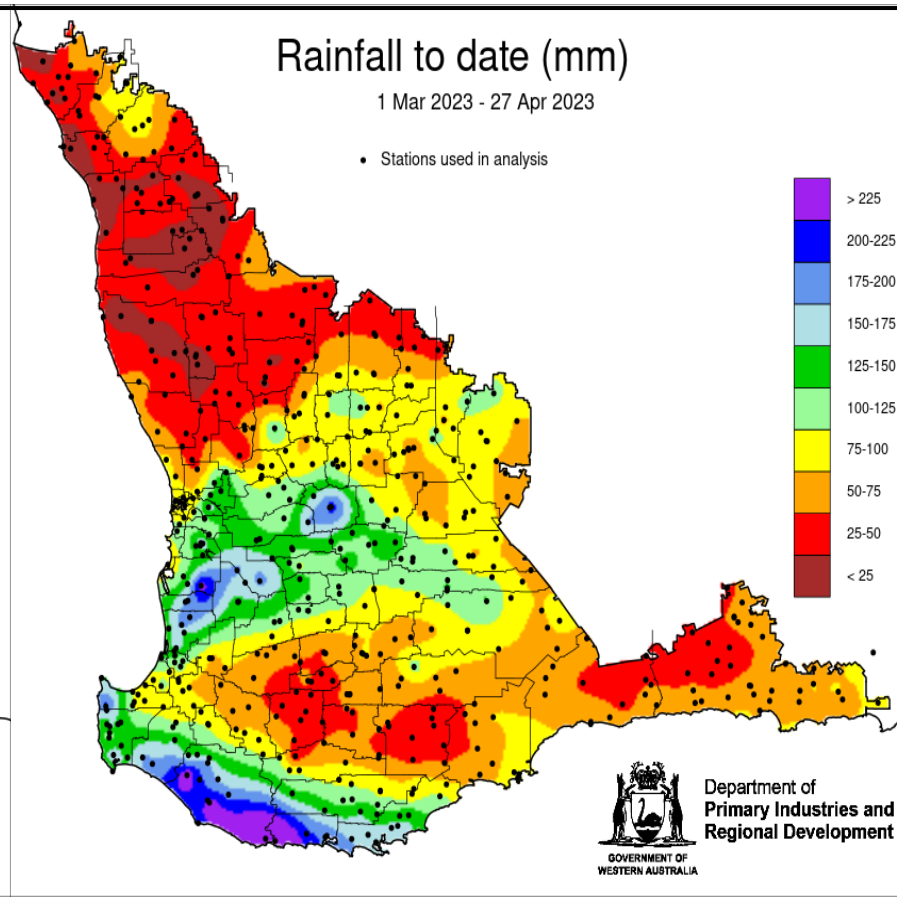
Department of Primary Industries and Regional Development

# Over summer conditions

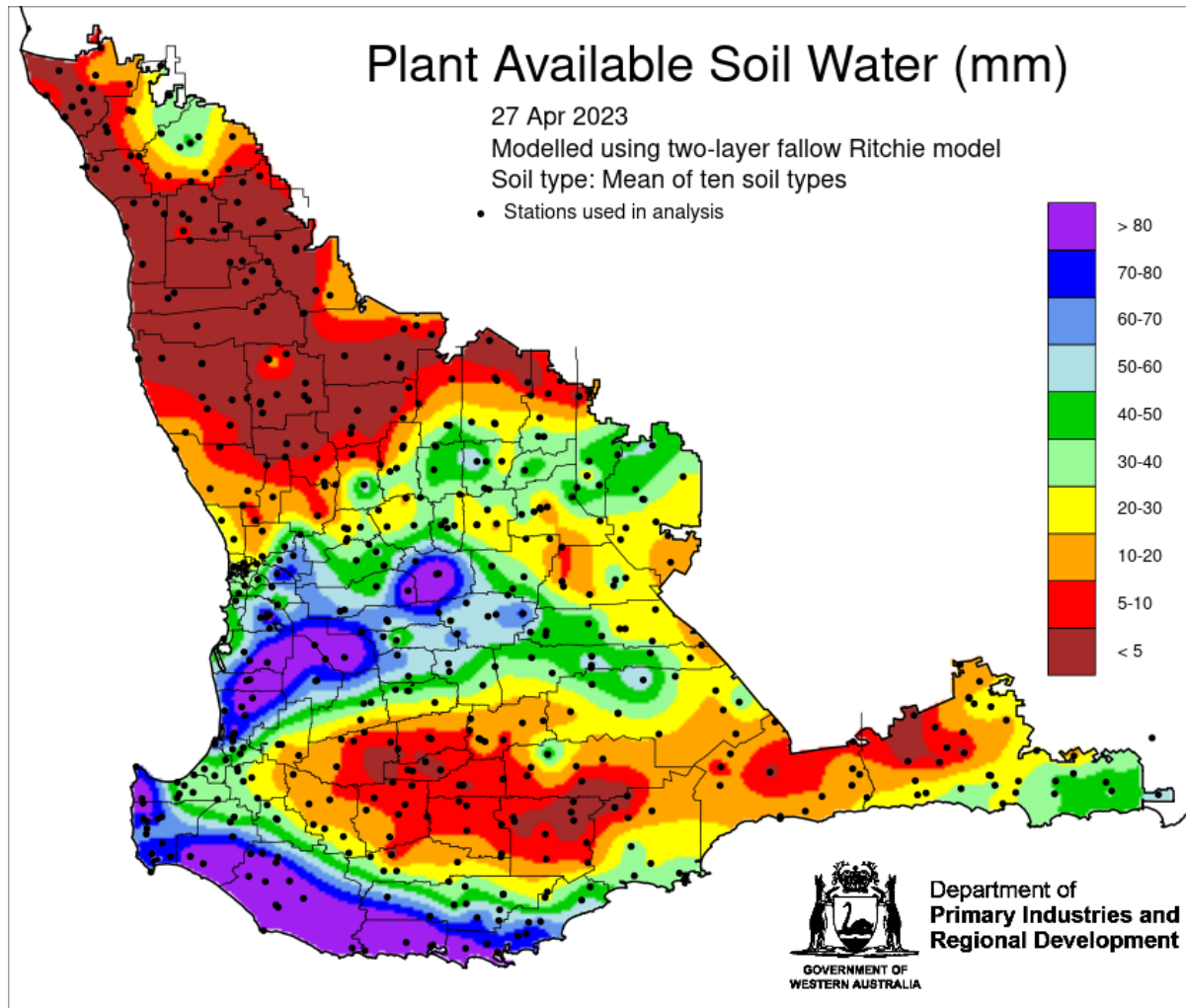
**December 2022 to February 2023**



**March to April 2023**



# Over summer conditions



- Potential for some green regrowth in areas of March – April rain

# Seasonal outlook (Bureau of Meteorology)

<http://www.bom.gov.au/climate/outlooks/#/rainfall/summary>

## Drier than average May to July for almost all of Australia

For May to July, below median rainfall is likely (60% to 80% chance) for most of Australia, with **much of the South-West Land Division in WA very likely to be below median (greater than 80% chance).**





# Diseases of note from 2022



- **Powdery mildew in wheat**
- Net form net blotch
- Scald in barley
- Blackleg in canola
- Sclerotinia in legumes
- Wheat leaf rust (Geraldton)
- Botrytis in legumes



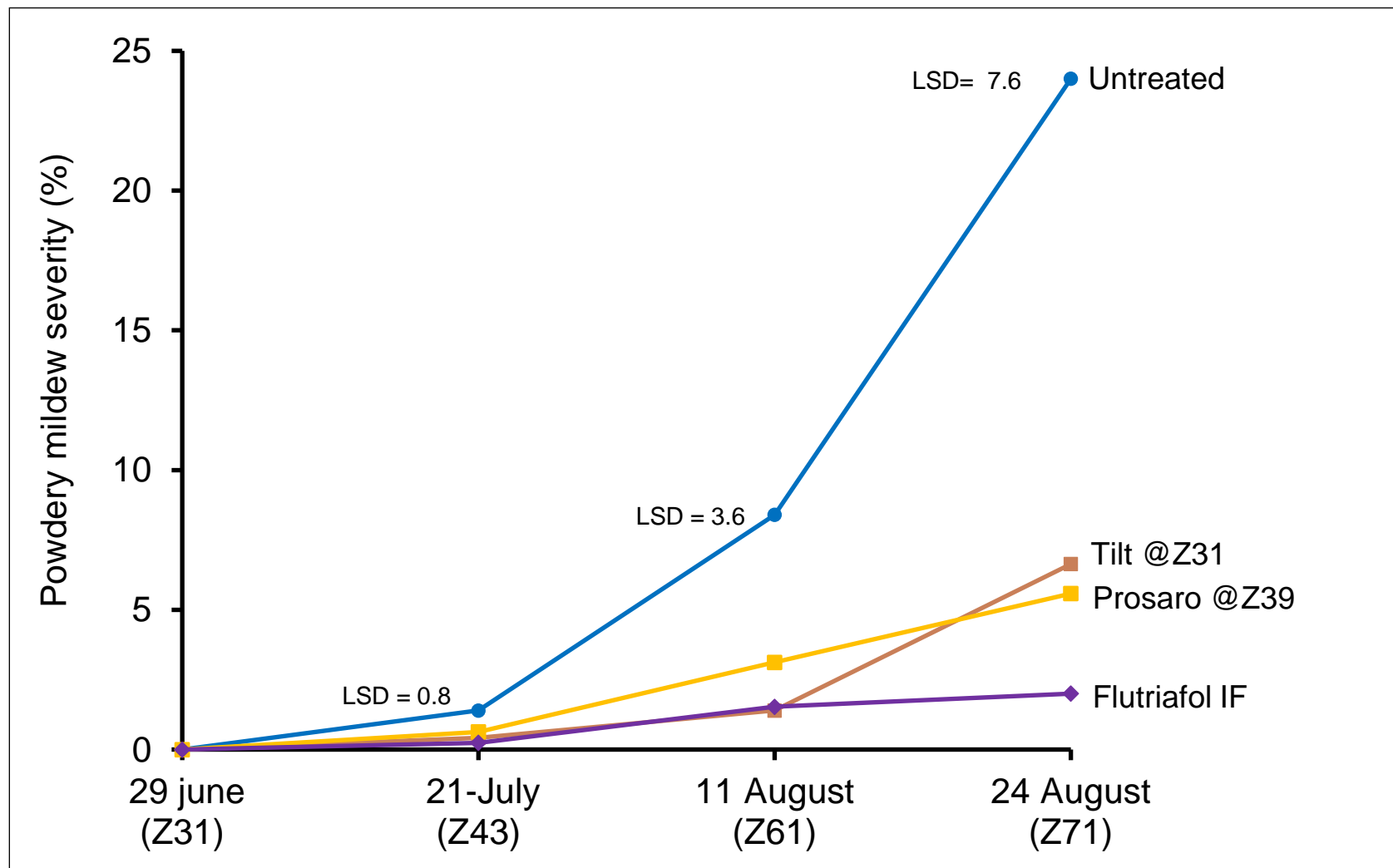
# Wheat powdery mildew



- Inoculum on stubble widespread.
- Susceptible variety spectrum
  - 37 varieties in DPIRD Crop Variety Guide;
  - 10 are SVS (incl. Devil, Vixen...)
  - 13 are S (incl. Scepter ...)
- Mild wet autumn will predispose to further infection in 2023.

# Upfront fungicide reduces powdery mildew

Leaf area affected top 3 leaves, Wyalkatchem wheat, Geraldton 2016



Data: Ciara Beard (DPIRD)

# Diseases of note from 2022



- Powdery mildew in wheat
- **Net form net blotch**
- **Scald in barley**
- Blackleg in canola
- Sclerotinia in legumes
- Wheat leaf rust (Geraldton)
- Botrytis in legumes



# Barley scald – one to watch



Laperouse – South Stirling

- Increasing incidence and severity across south coast barley growing areas.
- Stubble and seed borne pathogen.
- Disease to watch if replacing Planet in 2023
  - Minotaur (VS), Leabrook (S), Laperouse (S), Beast (S), Combat (Sp), Commodus CL (S), Bottler (S), Rosalind (S), Titan AX (Sp).





# Barley scald – changing virulence



- Scald highly variable pathogen.
- Maximus / Spartacus MR in variety guide.
- Both varieties affected by scald in 2022
  - Esperance, Albany, Narrogin, Darkan, Merredin
- If your crop has high levels of scald, treat it as susceptible.

# Diseases of note from 2022



- Powdery mildew in wheat
- Net form net blotch
- Scald in barley
- **Blackleg in canola**
- Sclerotinia in legumes
- Wheat leaf rust (Geraldton)
- Botrytis in legumes



# Canola blackleg

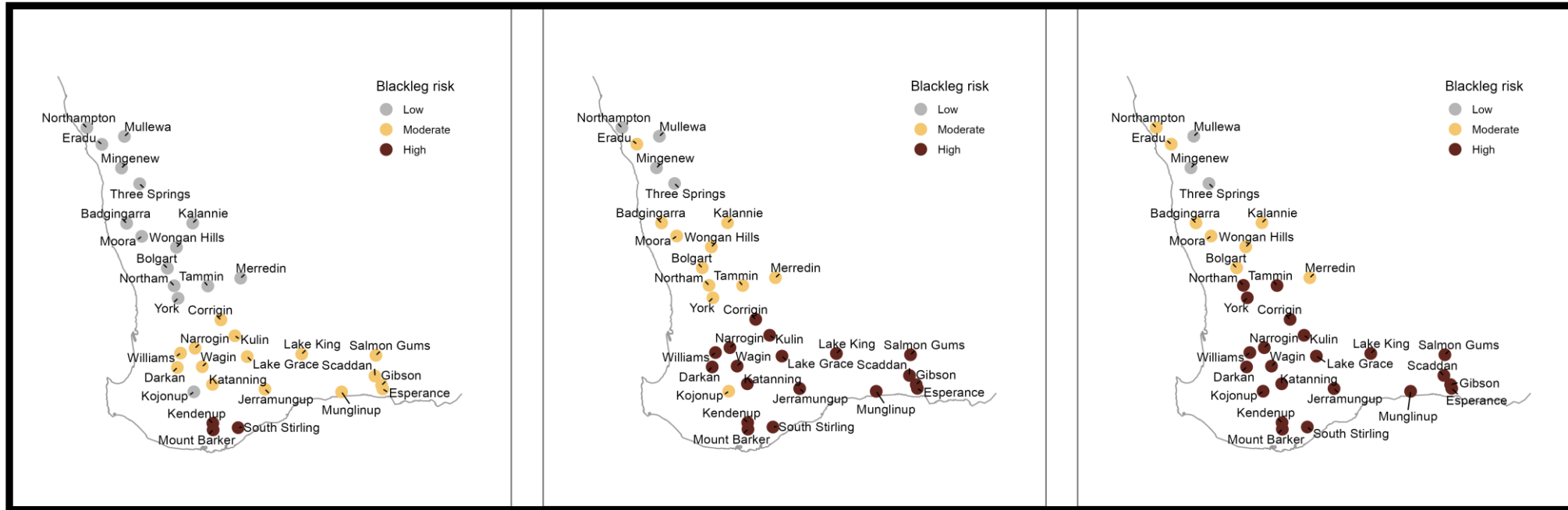


# Canola blackleg spore maturity forecast for Western Australia

March 31<sup>st</sup>

April 17<sup>th</sup>

May 2<sup>nd</sup>



- Maturation should be well advanced in the Esperance, Albany and Great Southern areas.
- Canola crops in these regions could be at risk during the 4-8 leaf stage of developing crown canker



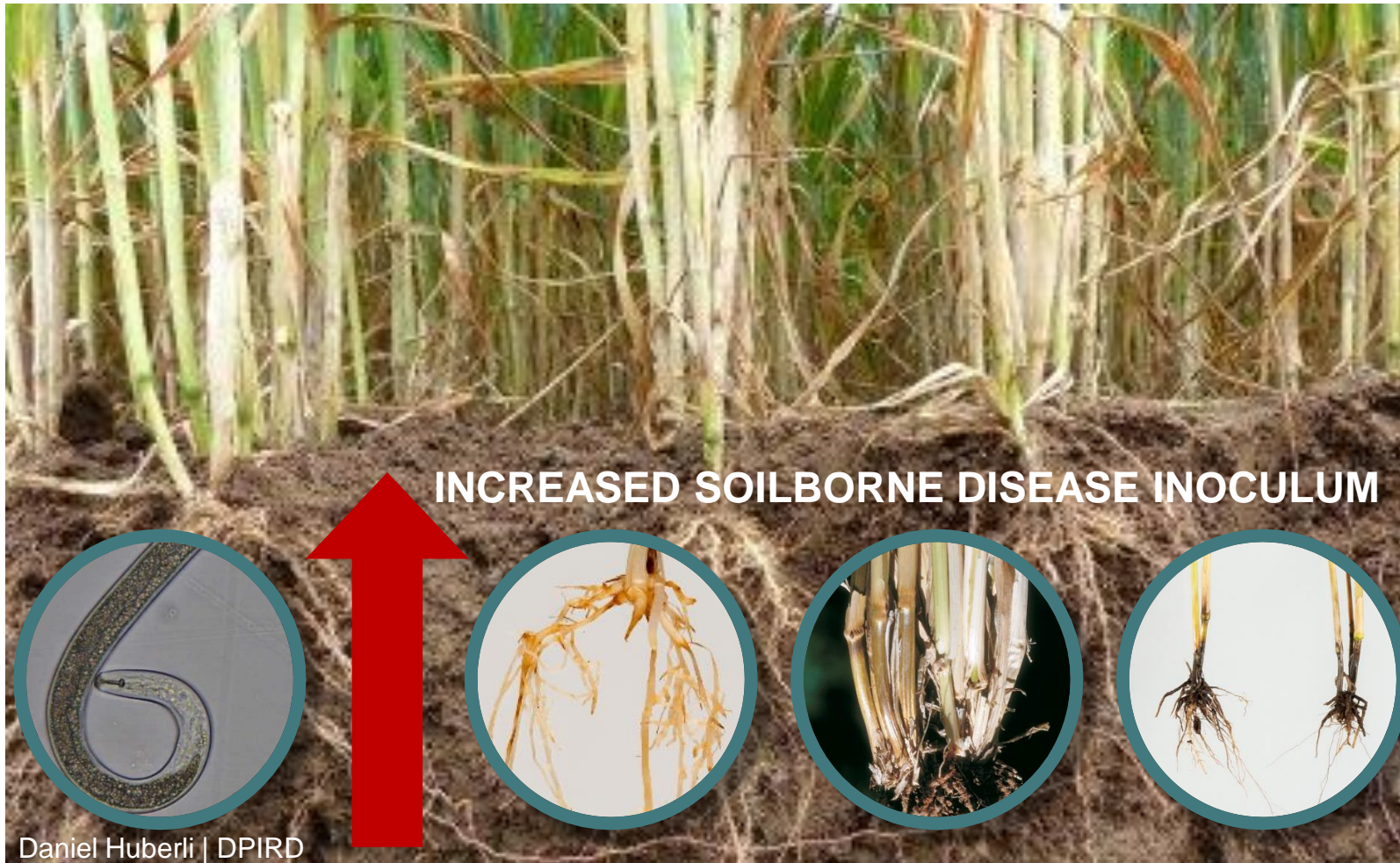
# Diseases of note from 2022



- **Powdery mildew in wheat**
- Net form net blotch
- Scald in barley
- Blackleg in canola
- **Sclerotinia in legumes**
- **Wheat leaf rust (Geraldton)**
- **Botrytis in legumes**

# Root and crown diseases

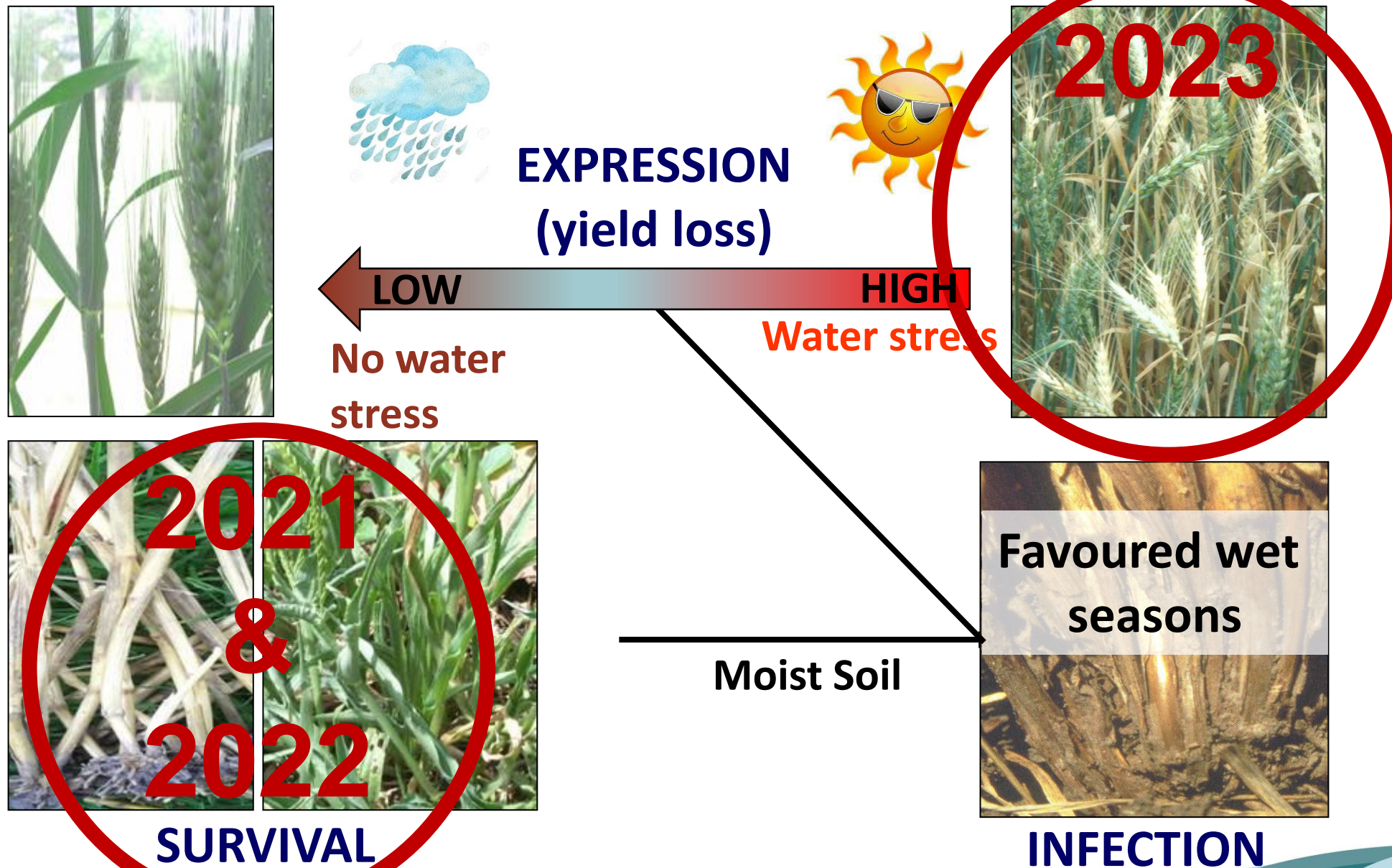
**Good seasons 2021 and 2022 = large biomass**





# Crown rot disease cycle

(© 2015 S. SIMPFENDORFER)



# Reports this year

Downy mildew- Canola



Hilary Wittwer (Farmworks) – Kauring

Net blotch - barley



David Cameron (Farmanco) - Pithara



# Thank you

[dpird.wa.gov.au](http://dpird.wa.gov.au)



## Important disclaimer

The Chief Executive Officer of the Department of Primary Industries and Regional Development and the State of Western Australia accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.

Copyright © State of Western Australia (Department of Primary Industries and Regional Development), 2023.



Department of  
Primary Industries and  
Regional Development

Protect  
Grow  
Innovate

# Net Form Net Blotch (NFNB) risk for this season 2023

**Kith Jayasena, DPIRD, Albany**

Project DAW2112-002RT - Disease epidemiology,  
modelling and delivery of management decision  
support tools

# NFNB risk for 2023



**Medium or high risk?**  
(depends on rainfall during the  
cropping season)



**Why?**  
(risk parameters)

- 2021 & 2022 epidemics in the region
- Stubble borne disease (pathogen survival)
- No-till farming practice (stubble retention)
- Close rotation (stubbles less than 2 years)
- Very often barley on barley sowing





# NFNB in 2022

Spring 2022



NFNB infection widely  
seen in the region

After harvest 2022



Left over NFNB infected  
stubbles after harvest

# What can be noticed on those stubbles?



Stubble carries resting fruiting bodies



- Ascospores 2 years to mature
- Short distance spread

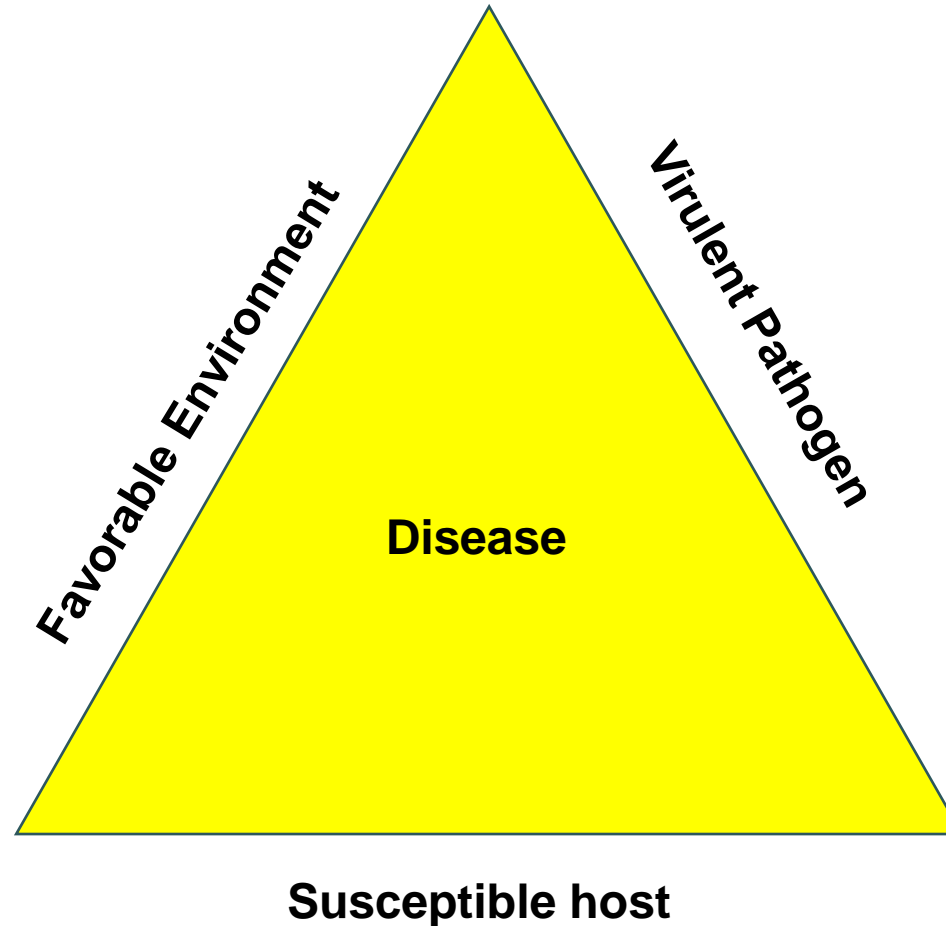


- Conidia primary source of infection
- Long distance spread
- 3 days after wet stubbles can produced conidia



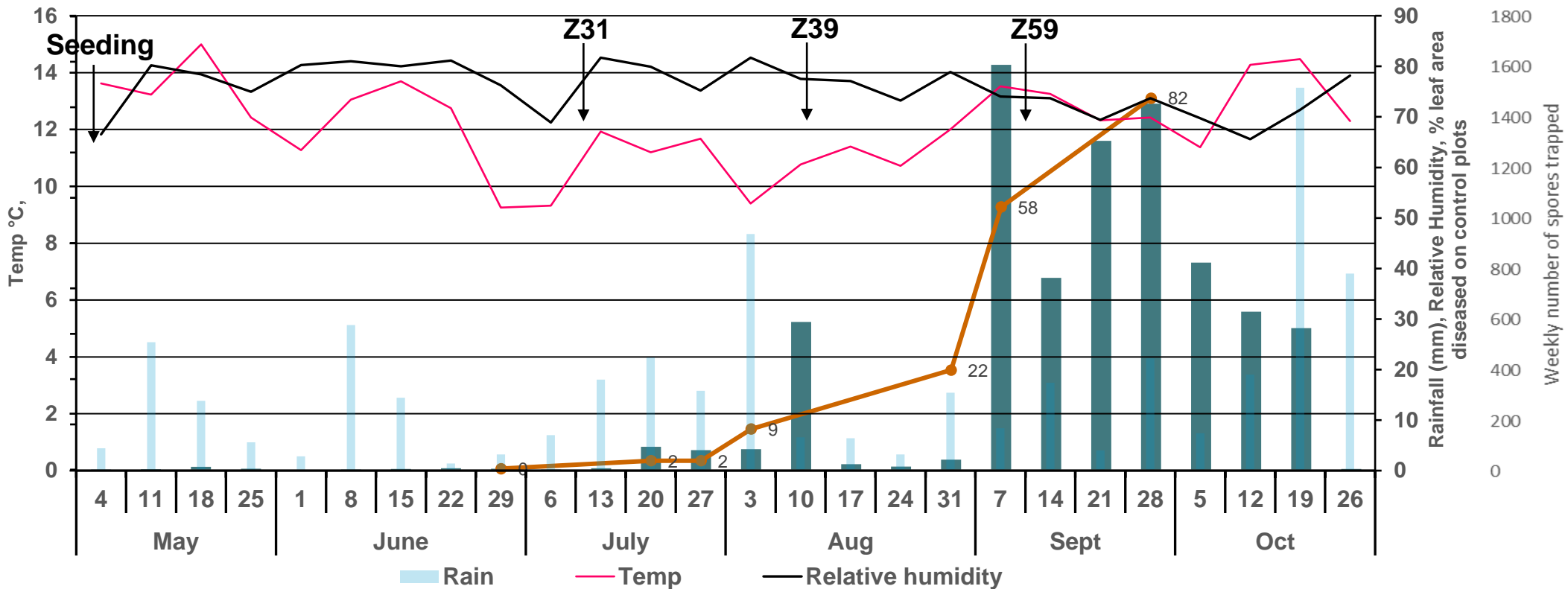
3<sup>rd</sup> week of  
March 2023

# What are the factors contributing to manifest the disease ?





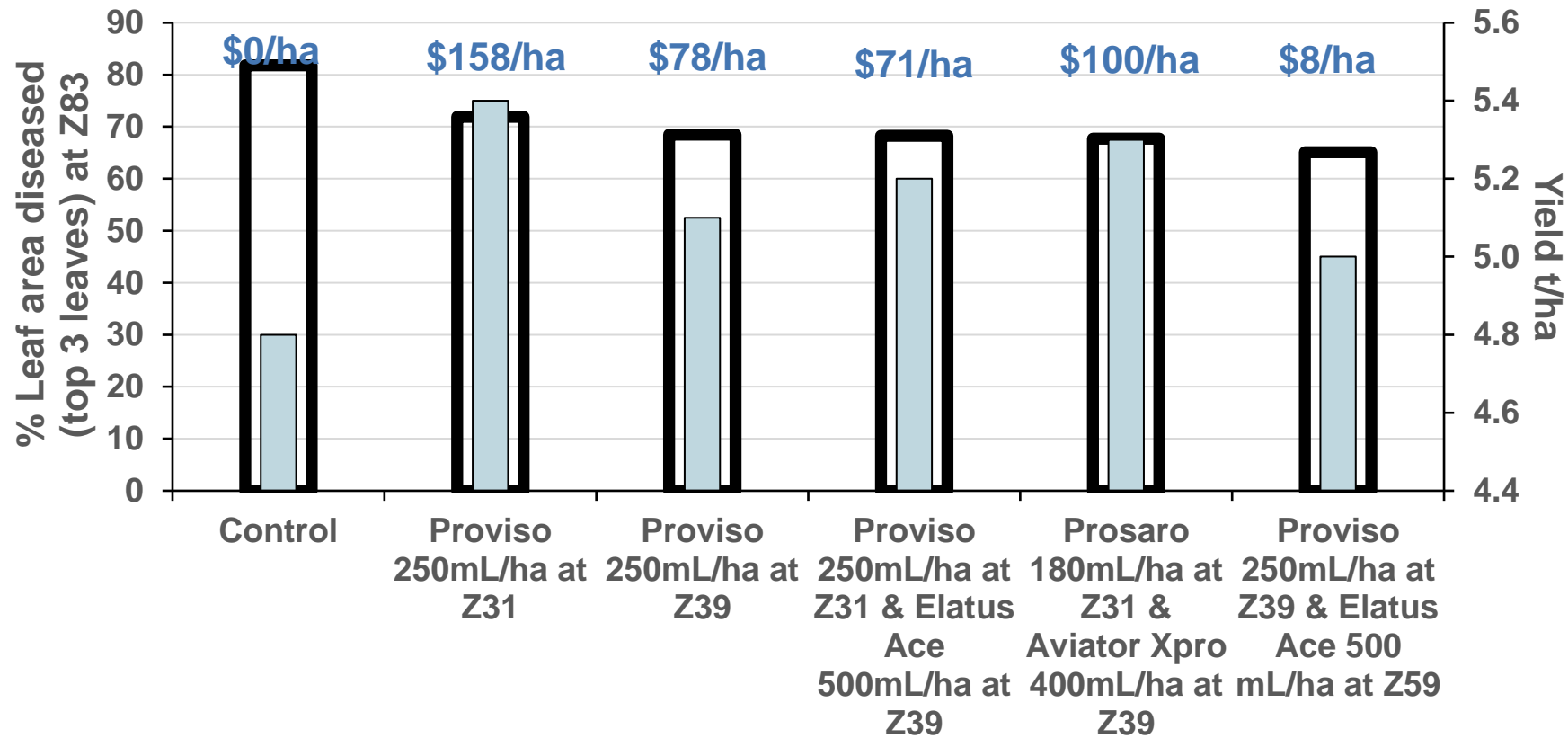
# Weekly weather parameters and Net Blotch conidia trapped at Kojaneerup South in 2022



Date	# Spores tapped	RF (mm)	Temp °C	RH%	Rainy Days
7/9-14/9	1608	8.4	13.5	74.1	4
14/9-21/9	762	17.4	13.3	73.7	6
21/9-28/9	1306	4	12.3	69.4	2
28/9-6/10	1454	22.2	12.4	73.7	6
6/10 - 12/10	823	7.4	11.4	69.7	4
12/10-19/10	628	19	14.3	65.6	4
19/10 - 27/10	562	75.8	14.5	71.4	6
		154.2			32

DAW2112-002RTX

 @KithsiriJayase3



### Uniform in-furrow under all treatments

- The best impact on yield was seen when fungicide was applied early in epidemic development.
- Timely application of a foliar fungicide at growth stage Z31 increased yield by 13% as compared to the control.

# NFNB virulence to some barley varieties 2022

Variety name	Reason	Gibson	Cascade	South Stirling	Wellstead
Beecher	Extra control	2	2	2	2.5
Beecher	Test Set	2.5	2	2	2.5
Cyclops	Test Set	8	7.5	6	7
Laperouse	Test Set	7	8	7.5	8
Maximus	Test Set	7	7.5	6	7
Minotaur	Test Set	7	4,6,7 Mix	6.5	7.5
Oxford	Extra control	7	7	7	7
Oxford	Test Set	3,7 Mix	8	7	7.5
Planet	Test Set	5,6,7 Mix	7.5	8	8
Planet	Extra Control	6,7 Mix	7.5	8	8
Rosalind	Test Set	7	7	3,7 Mix	7
WABAR 2029	Extra Control	8	8	7.5	8

**RGT Planet virulent pathotype present in south coast and more aggressive than Oxford virulent pathotype**

**Source: Sanjiv Gupta (DPIRD).**

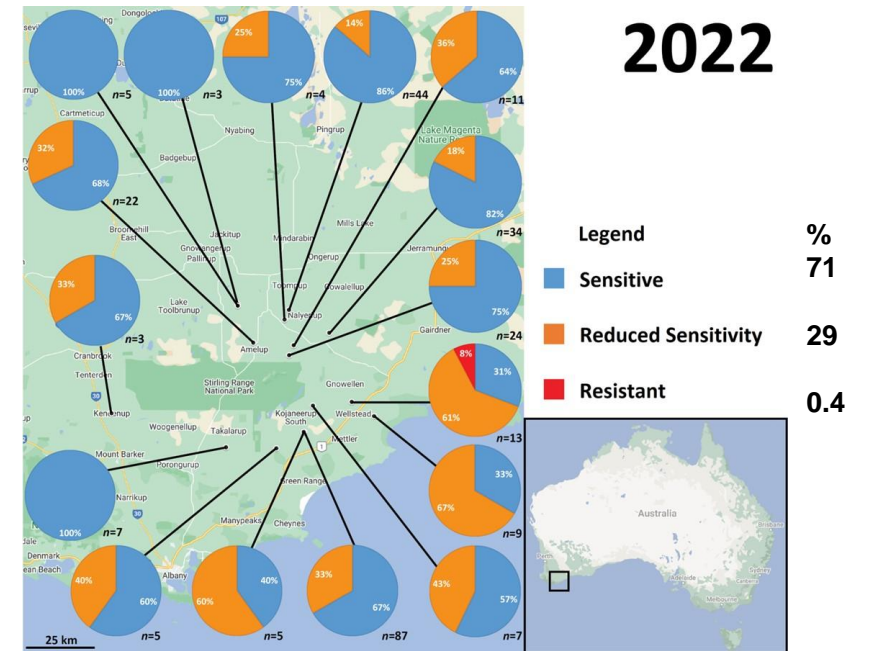


# Strategies for NFNB management

Select better variety - except Oxford,  
Rosalind in HRZ

## If choice is Planet:

- Delay sowing.
- Delay first foliar fungicide if little disease present at stem extension - shift fungicide protection later into grain filling.
- Consider Systiva\* - **ONLY** if no fungicide resistance to Group 7 (SDHI) in your region **except APZ or Uniform *in-furrow* with fertiliser**



Source: Fran Lopez Ruiz  
(CCDM)

# Thank you

[dpird.wa.gov.au](http://dpird.wa.gov.au)



## Important disclaimer

The Chief Executive Officer of the Department of Primary Industries and Regional Development and the State of Western Australia accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.

Copyright © State of Western Australia (Department of Primary Industries and Regional Development), 2023.

# Question and Answers session

- Type them in the “Q&A” tool.



- Webinar recording will be put on DPIRD's YouTube channel.
- PowerPoint slides will be published on [www.agric.wa.gov.au/crop-diseases/about-pestfacts-wa](http://www.agric.wa.gov.au/crop-diseases/about-pestfacts-wa)



# What are you finding?

We want to hear about what insects and plant diseases you find! In return you can get a free diagnosis.

- Use our free PestFacts WA Reporter app.
- Email: [pestfactswa@dpiird.wa.gov.au](mailto:pestfactswa@dpiird.wa.gov.au)



Follow @DPIIRDbroadacre for #PestFactsWA tweets.

# Presenter contact details

## Geoff Thomas

- Phone: 9368 3262 or 0428 947 287
- Email: [geoff.j.thomas@dpird.wa.gov.au](mailto:geoff.j.thomas@dpird.wa.gov.au)

## Kithsiri Jayasena

- Phone: 9892 8477
  - Email: [kithsiri.jayasena@dpird.wa.gov.au](mailto:kithsiri.jayasena@dpird.wa.gov.au)
- 

## Project acknowledgements:

- **CES2204-001RTX – IPMforGrains.**
- **DAW2104-003RTX - Disease surveillance and related diagnostics for the Australian grains industry (Western region).**
- **DAW2112-002RT - Disease epidemiology, modelling and delivery of management decision support tools.**
- **DAW2104-002RTX- Sclerotinia management for narrow leaf lupin crops in Western Australian farming systems.**
- **DAW2104-001RTX - Management of spot form of net blotch in the low rainfall zones of Western Australia.**



# Thank you

[dpird.wa.gov.au](http://dpird.wa.gov.au)



## Important disclaimer

The Chief Executive Officer of the Department of Primary Industries and Regional Development and the State of Western Australia accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.

Copyright © State of Western Australia (Department of Primary Industries and Regional Development), 2023.