

# How changed farming practices changed blackleg disease

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MGP:  
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Living Farm:  
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NSW DPI:  
Kurt Lindbeck



BlacklegCM apps (DPIRD) –  
Art Diggle  
Rebecca O’Leary  
Anna Hepworth  
Adam Sparkes  
Jean Galloway  
Fumie Horiuchi  
Steve Collins



DPIRD:  
Andrea Hills



UM:  
Alex Idnurm  
Angela Van de Wouw

CSIRO:  
Susie Sprague





2/10/2023





2/10/2023



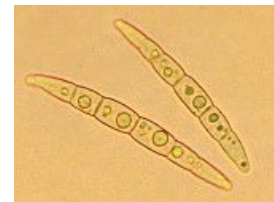








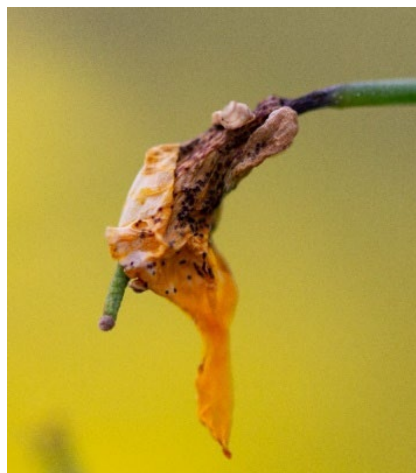




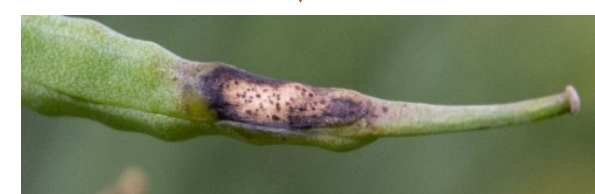
**Crown canker:**  
Infection during seedling stage

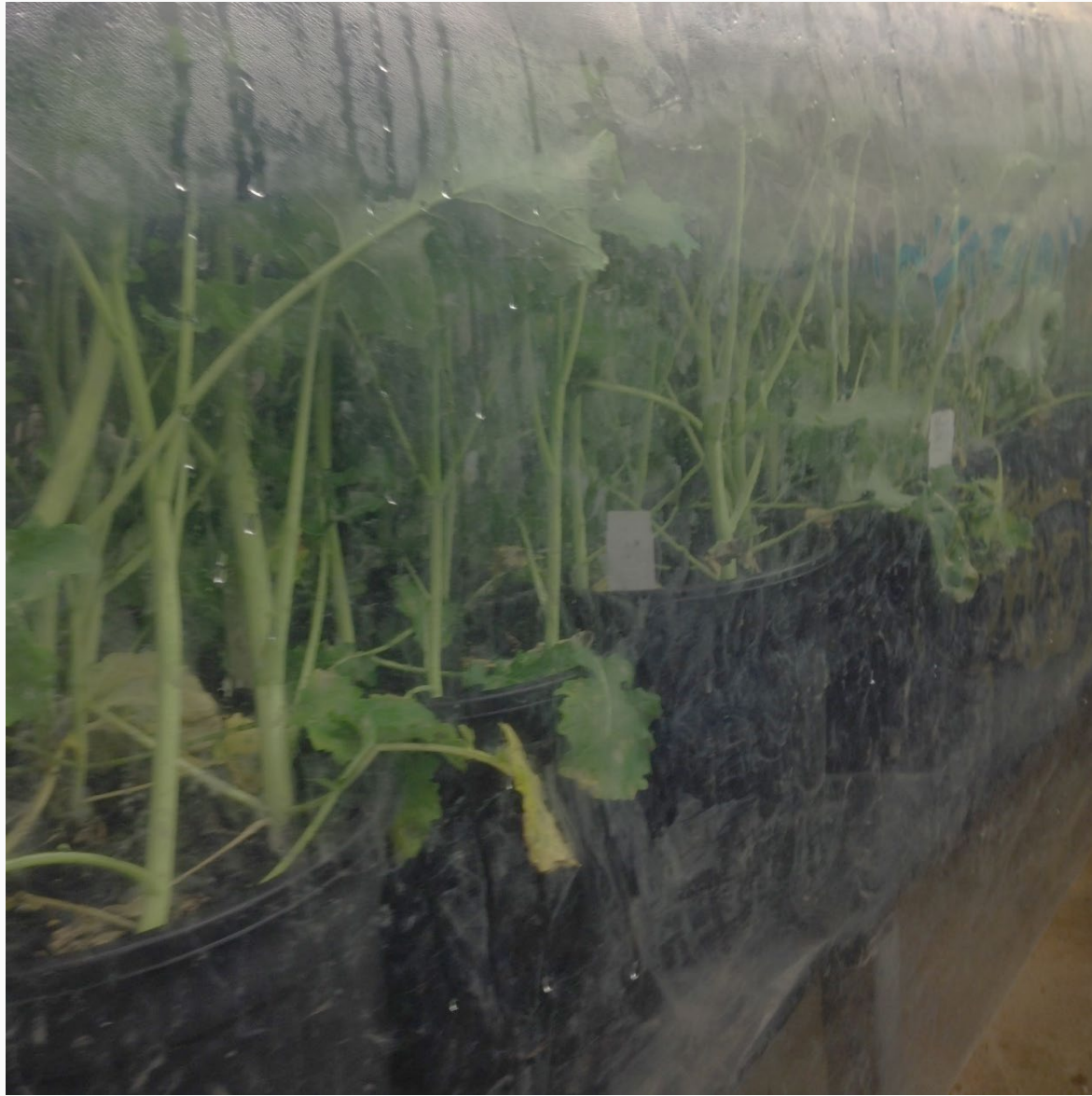


**Upper canopy infection:**  
Infection during flowering



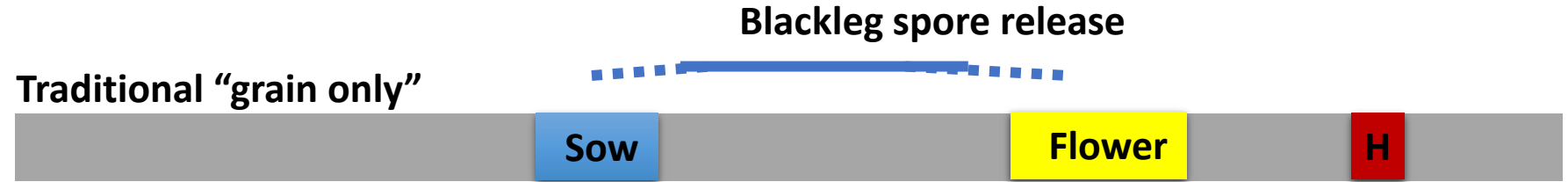
**Pod infection:** Infection during pod fill



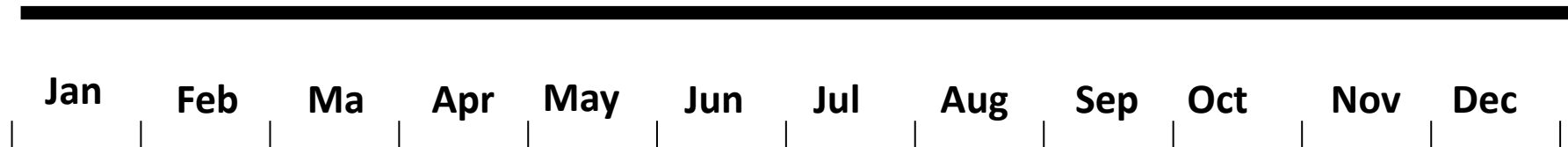


# Changing farming systems

20 years ago

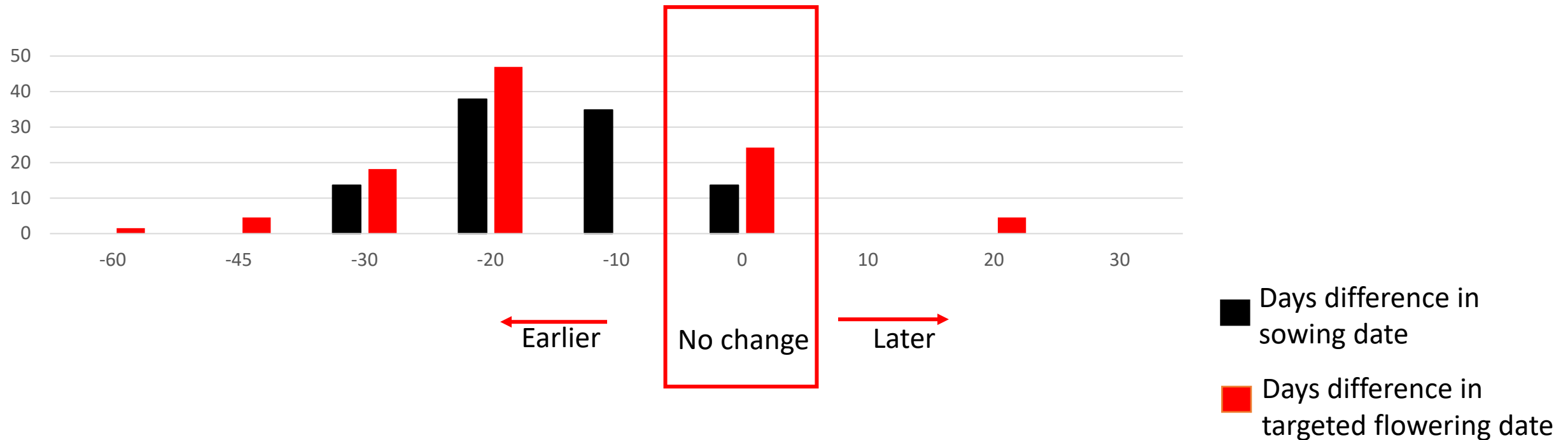


2020



All respondents (66)  
that answered both  
questions, both years

- Sowing date moved earlier to reduce risk from hot dry spring weather.
- Has resulted in more reliable production and increased yields.





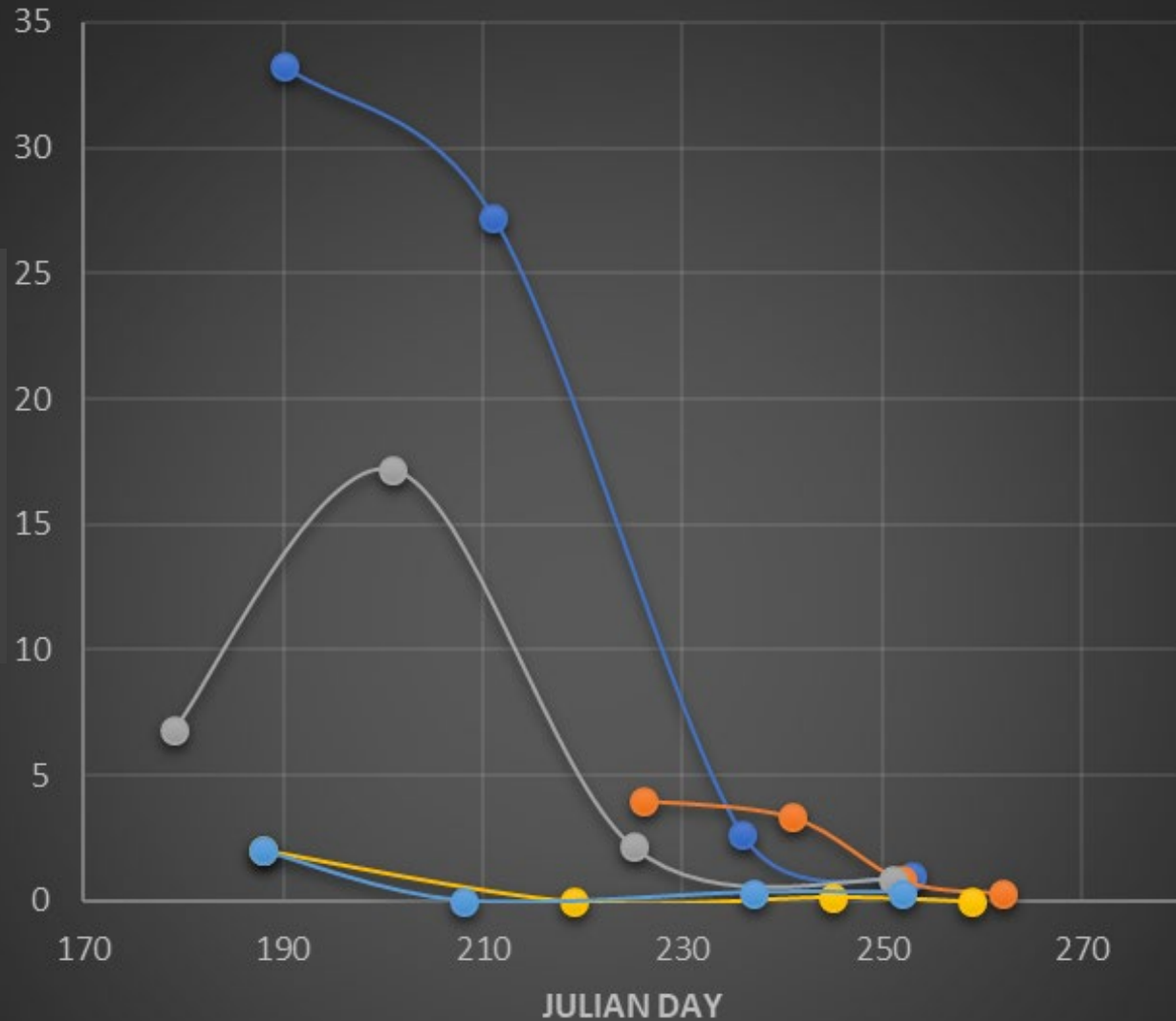
- Satellite guidance sowing
- Hybrids
- Herbicide tolerance
- Seed treatments

- Sowing date moved earlier to reduce risk from hot dry spring weather.
- Has resulted in more reliable production and increased yields.



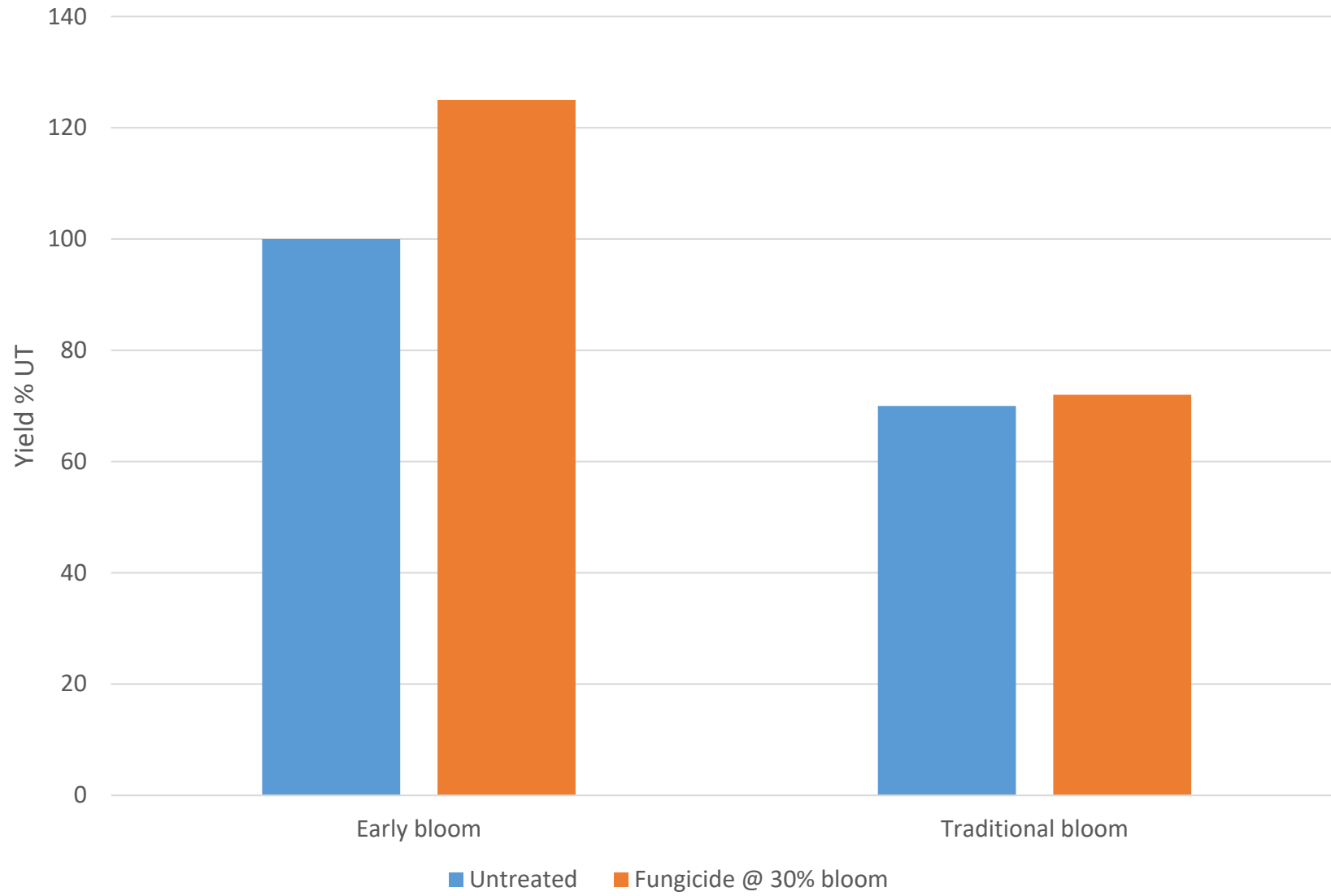


# Effect of MGR and flower timing on UCI

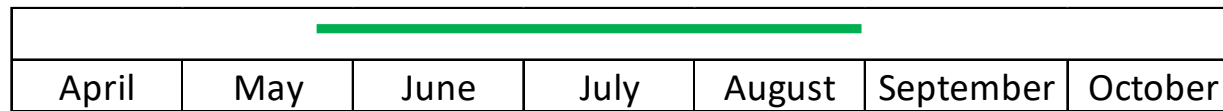


● ATR-Stingray      ● Archer      ● NuSeed Diamond  
● NuSeed GT42      ● Hyola 350TT





# Spore release



Sowing window

Early sowing =  
Early flowering

Late sowing =  
Late flowering



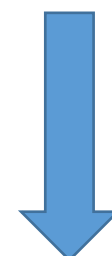
# UCI - Date of 1st flower

- Must have early date to 1<sup>st</sup> flower, to enable blackleg to infect the stems / branches.
- Must have sufficient time between infection and harvest to damage the vascular tissue.

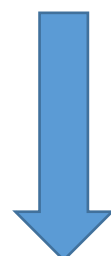
July



August



September



# UCI major gene resistance

- Check for leaf lesions at elongation growth stage



- Effective major gene resistance
- Or no disease present
- Will not get UCI



- No effective major gene resistance
- May get UCI (depends on quantitative resistance)



# UCI BlacklegCM

20 m

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### Crop Conditions

Lesions on leaves

Lesions on flowers

Crop growth stage

first flower

Date at first flower

2022-08-01

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### Fungicide strategy

Crop growth stage at spray

30% bloom

Chemical group of planned spray

DMI Group 3  SDHI Group 7  Strobilurin

Spray cost (\$/ha spray)

0 30 150

Mitigation by spray for UCI (%)

0 65 100

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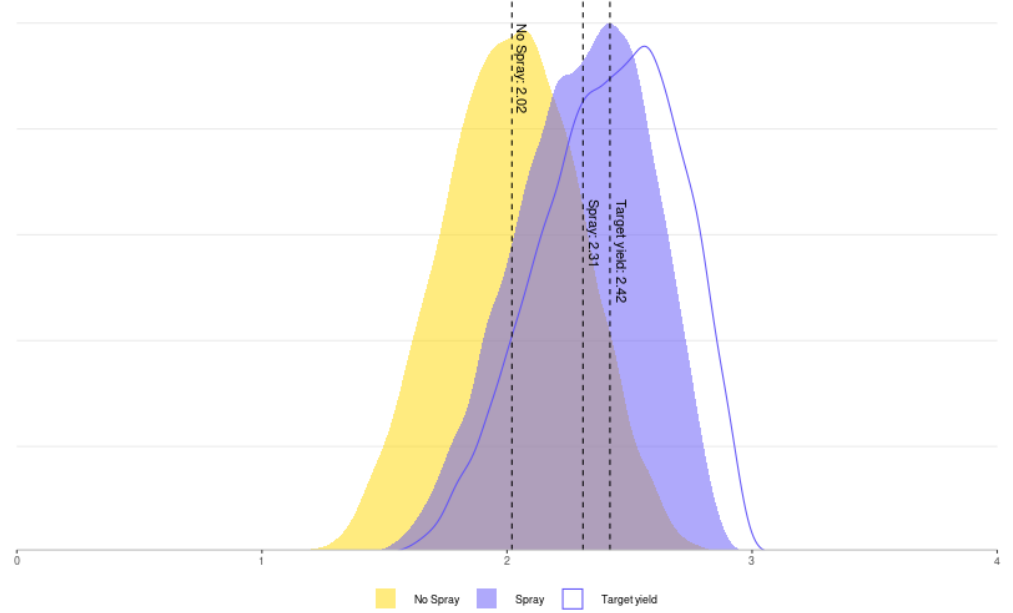
### Other diseases

Expected loss (%)

0 100

Summary Net Return **Yield** Grain Price Create a report About

Target and expected yields (t/ha)



Expected Yield (t/ha)

	No spray	Spray	Difference
Minimum	1.66	1.93	0.08
Mean	2.02	2.31	0.29
Maximum	2.38	2.65	0.50

# UCI BlacklegCM

20 m

Distance 2 yo stubble (m)  
Sown in

### Crop Conditions

Lesions on leaves  
 Lesions on flowers

Crop growth stage  
first flower

Date at first flower  
2022-09-01

### Fungicide strategy

Crop growth stage at spray  
later than 50% bloom

Chemical group of planned spray  
 DMI Group 3  SDHI Group 7  Strobilurin

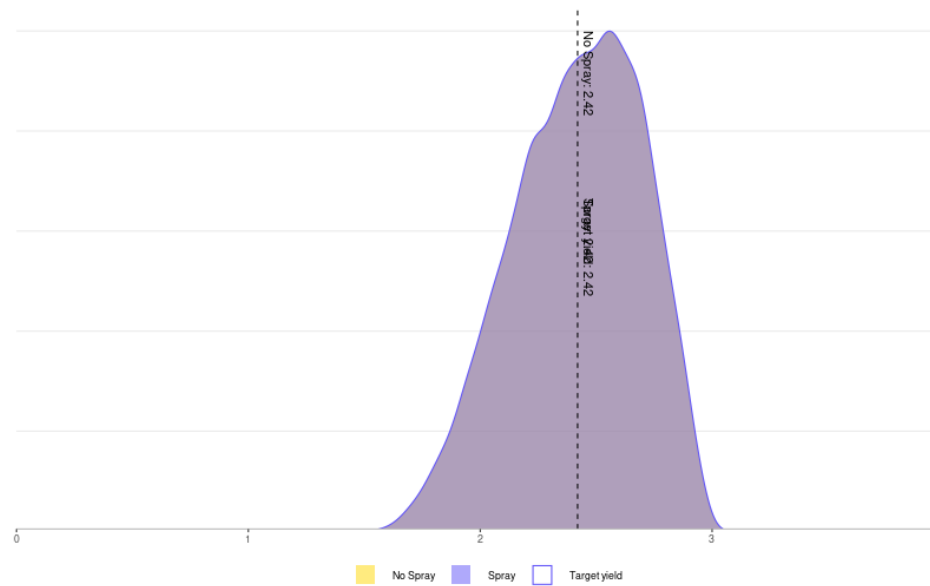
Spray cost (\$/ha spray)  
0 35 150

Mitigation by spray for UCI (%)  
0 65 100

Other diseases

Summary | Net Return | **Yield** | Grain Price | Create a report | About

## Target and expected yields (t/ha)



Expected Yield (t/ha)

	No spray	Spray	Difference
Minimum	2.04	2.04	0.00
Mean	2.42	2.42	0.00
Maximum	2.77	2.77	0.00

# UCI Blackleg ratings



## % yield increase with 30% bloom spray

UCI resistance	2021	2022
Low UCI resistance	114	120
Mid UCI resistance	105	107

6 sites each year NSW, Vic, SA, WA