FAR AUSTRALIA FIELD DAY

INCREASING PRODUCTIVITY & PROFITABILITY

Friday 24th October 2025

FAR Australia Millicent Crop Technology Centre 2025

SOWING THE SEED FOR A BRIGHTER FUTURE

Thanks to our host farmers: James & Chris Gilbertson, Trevor & Joe Rayson and Brett & Mel Gilbertson

VISITOR INFORMATION

We trust that you will enjoy your day with us at our Millicent Crop Technology Centre Field Day. Your health and safety are paramount, therefore whilst on the property we ask that you both read and follow this information notice.

HEALTH & SAFETY

- All visitors are requested to follow instructions from FAR Australia staff at all times.
- All visitors to the site are requested to stay within the public areas and not to cross into any roped off areas.
- All visitors are requested to report any hazards noted directly to a member of FAR Australia staff.

FARM BIOSECURITY

- Please be considerate of farm biosecurity. Please do not walk into farm crops without permission. Please consider whether footwear and/or clothing have previously been worn in crops suffering from soil borne or foliar diseases.

FIRST AID

- We have a number of First Aiders on site. Should you require any assistance, please ask a member of FAR Australia staff.

LITTER

- Litter bins are located around the site for your use; we ask that you dispose of all litter considerately.

VEHICLES

- Vehicles will not be permitted outside of the designated car parking areas. Please ensure that your vehicle is parked within the designated area(s).

SMOKING

- There is No Smoking permitted inside any farm shed, marquee or gazebo.

Thank you for your cooperation, enjoy your day.

INCREASING PRODUCTIVITY AND PROFITABILITY IN SOUTH AUSTRALIA

FEATURING FAR Australia INDUSTRY INNOVATIONS and GRDC Levy investments

On behalf of myself and the FAR Australia team, I am delighted to welcome you to our 2025 Millicent Crop Technology Centre Field Walk featuring Industry Innovations.

Industry Innovations (II) is a FAR Australia initiative which continues to engage with industry to provide innovative research solutions which are helping to create a more productive, profitable and sustainable future for the Australian grains industry. With our Crop Technology Centres (CTCs) operating nationally across the growing regions of Australia, we provide the perfect platform to showcase new industry innovations, whether it be new crops, cultivars, agrichemicals, fertilisers or Ag technologies. More information on our Industry Innovations initiatives is available in the booklet.

Today will provide you with a unique ‘seeing is believing’ opportunity to experience the latest innovations in cereal germplasm, agronomy, and agrichemical usage. You will witness first-hand the impact of innovative treatments and techniques on enhancing crop performance and profitability.

Event Highlights:

- Topics for this High Rainfall Zone (HRZ) site and others FAR Crop Technology Centres in the national network will be featured.
- With wheat and barley what closure of the yield gap does our fungicides offer in southern Vic compared to other parts of the country.
- Benchmarking agronomics and profitability in the southern Victorian HRZ – what can we take away from the first year of the GRDC Hyper Profitable Crop (HPC) results generated in 2024. Ashley Amourgis and Ben Jones lead the discussion.
- Most of all we want to share your insights from growers to advisers and researchers.

Putting together a quality Crop Technology Centre takes a fair amount of planning so a very big thanks to our host farmers Trevor & Joe Rayson and James & Chris Gilbertson. A big thank you to our hosts for their tremendous practical support given to the FAR Australia team.

Finally, I would like to thank the GRDC and the wider industry for investing in our research programme this season.

Should you require any assistance today, please don't hesitate to contact a FAR Australia staff member. We hope you find the day informative, and as a result, take away something new which can be implemented in your own farming business.

Nick Poole Managing Director
FAR Australia

SA HRZ CROP TECHNOLOGY CENTRE FIELD DAY

MORNING TIMETABLE

FRIDAY 24th OCTOBER 2025

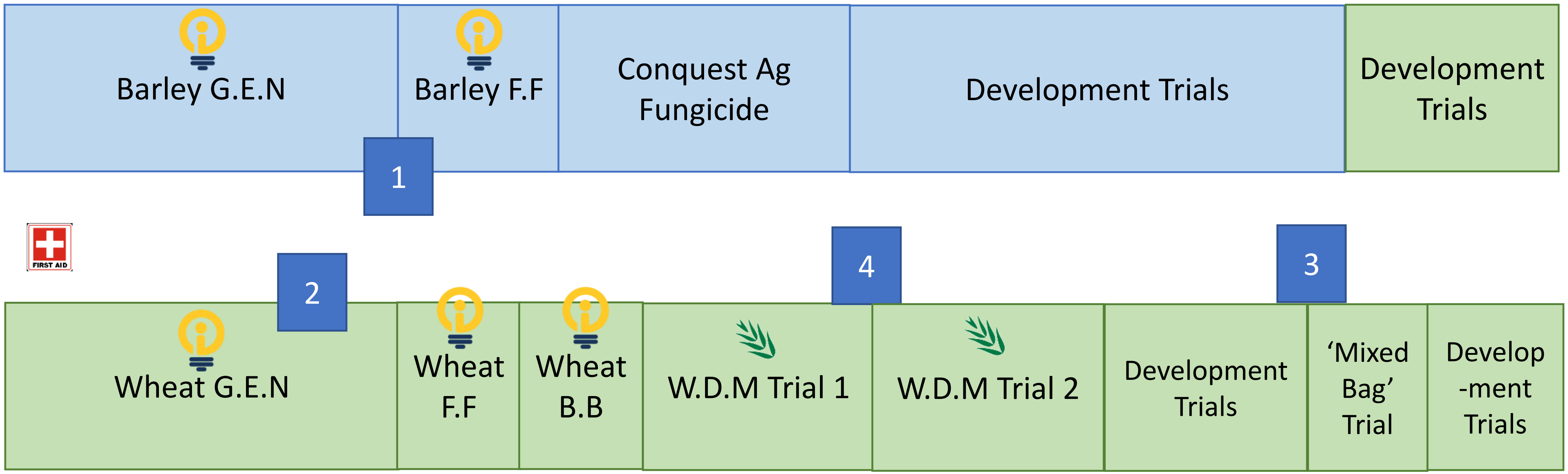
In-field presentations at canola research site	10:30	11:00	12:15	12:30
Welcome and introductions ***Nick Poole - Managing Director, FAR Australia*** *Outline of the programme for the day.*	Coffee and introductions		Travel to shearing shed 849 Banya Rd	Lunch and refreshments
Canola GEN results & disease update, Max Bloomfield & Nick Poole, FAR Australia *Canola is a hugely important crop for the HRZ. Nick looks at the latest disease management and fungicide resistance data produced by Marcroft Consulting along with the FAR Australia GEN trial in canola.*		1		
In-field presentations	**10:30**	**11:00**	**12:15**	**12:30**

Event kindly sponsored by

2025 SITE MAP: SOUTH AUSTRALIAN CROP TECHNOLOGY CENTRE (Millicent)

SA CROP TECHNOLOGY CENTRE

Event kindly sponsored by



Key:
G.E.N: FAR Australia Germplasm Evaluation Network
F.F: FAR Australia Fungicide Fingerprinting
B.B: FAR Australia Biological Benchmarking
WDM: Wheat Disease Management

Vehicle entry

Fence Line

GEN (Germplasm Evaluation Network) Results in Canola

Sown: 06 May 2024
Harvested: 18 December 2024
Soil Type: Organosol over grey Clay
Previous Crop: 2023- Canola

FAR Code: FAR SAC II C24-43
GSR (Apr-Nov): 473.4mm
Surrounding paddock variety: 45Y95 CL, nearest 2023 stubbles in adjacent paddock

2024 Key Points

- *Oilseed yields ranged from 3.15 – 4.51 t/ha depending on variety and fungicide application with significant differences recorded in variety performance (p=<0.001).*
- *While there was no significant response to fungicide (p=0.067), there was an overall trend of approximately 200 kg/ha yield increase when fungicides were applied, there was no significant interaction between variety and fungicide application (p=0.41).*
- *45Y95 CL which has traditionally performed strongly at the Millicent site was lower yielding in 2024 and was associated a higher incidence of blackleg canker, although severity of the disease was relatively low overall.*
- *Nuseed Eagle TF was the highest yielding of the FAR funded control varieties while the coded line RGT65-074CL (4.33 t/ha) significantly outperformed all other varieties.*
- *AN23LR014 along with Nuseed Eagle TF were the second highest yielding cultivars in the trial.*
- *The season was not associated with high levels of disease infection and fungicide application did not have a bearing on test weight or oil content.*
- *Hyola Regiment XC (46.7%) gave significantly higher oil contents than all other varieties but recorded the second lowest yield.*
- *Lodging levels were low in this trial, with crops showing signs of leaning rather than lodging, it is unlikely that the small differences had any bearing on the yield results.*
-

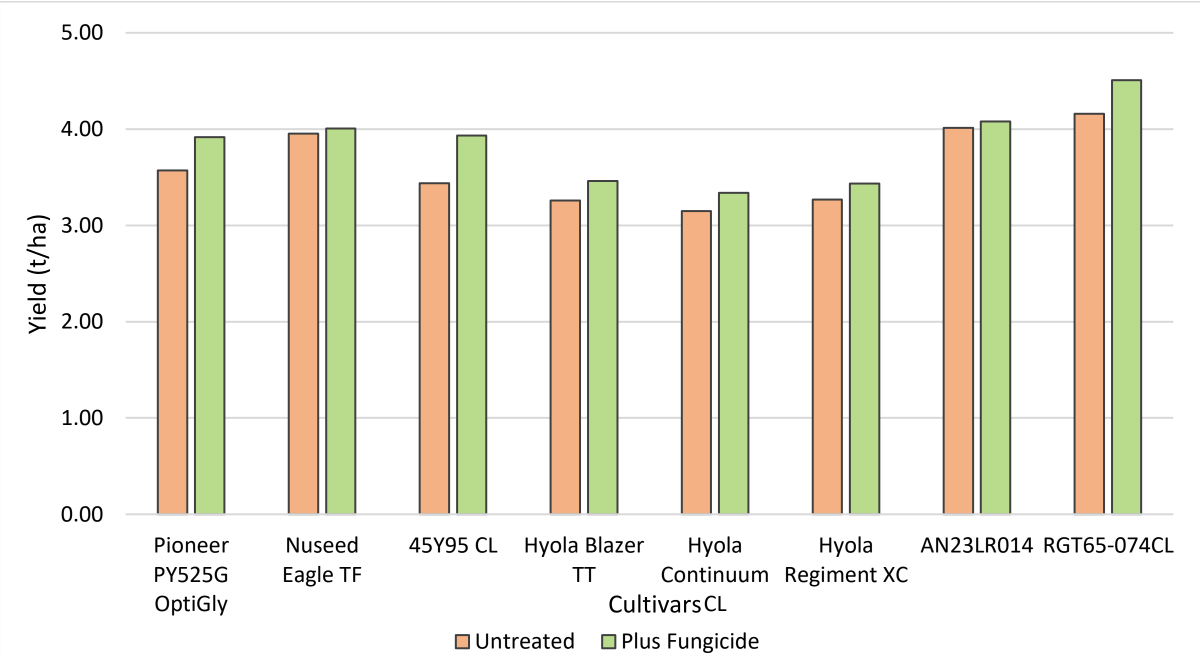


Figure 1. Influence of variety and fungicide application on grain yield (t/ha) of canola (varieties grown plus and minus fungicide) (P values and LSD available in Table 1.) – May 6 sown.

GEN (Germplasm Evaluation Network) Results in Canola

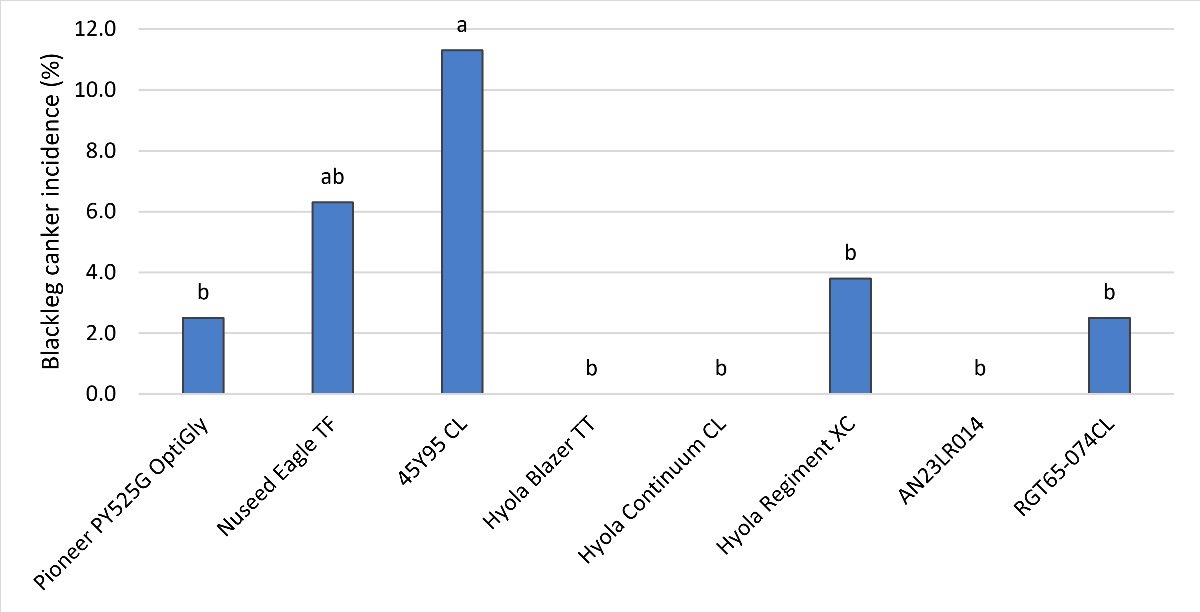


Figure 2. Influence of variety on the incidence of blackleg canker stem infection (% of stems infected) (P values and LSD can be found in Table 4) – December 4 assessed.

HYC Canola Winter Screen Ungrazed (FAR SAC C23-01)

2023 Key Points

- *Eight winter canola varieties were sown in the ungrazed canola screen. Captain CL was again the highest yielding canola variety and had equal highest oil concentration.*
- *Yield of Captain CL was the same in the grazed trial as the ungrazed trial.*
- *Varieties commenced flowering in a narrow window from 29 September to 4 October. On average the winter varieties flowered ~6 weeks after the spring varieties at the same site.*
- *Despite being very tall (~2 metres) there was minimal lodging in the winter canola varieties.*

Table 1. Cultivar assessment- yield (t/ha), establishment (0-9), lodging index (0-500), and estimated flowering date (50% of plants with one flower).

	Cultivar	Yield (t/ha)		Establishment (0-9)		Lodging Index (0-500)		Flowering date (BBCH 60)
1	Hyola Feast CL	5.07	bc	7.3	-	18.8	-	29/09/2023
2	Hyola 970CL	4.71	cd	6.5	-	16.3	-	29/09/2023
3	Phoenix CL	4.51	d	7.5	-	21.3	-	30/09/2023
4	Captain CL	5.70	a	7.3	-	0.0	-	29/09/2023
5	CL222167	5.29	ab	7.3	-	28.8	-	4/10/2023
6	RGT Nizza CL	3.19	f	6.5	-	0.0	-	1/10/2023
7	RGT Clavier CL	3.98	e	7.3	-	0.0	-	30/09/2023
8	AGFCA014820	5.32	ab	6.8	-	0.0	-	29/09/2023
Mean		4.72		7.0		10.6		.
LSD P=0.05		0.43		ns		ns		.
P Value		<0.001		0.352		0.101		.

GEN (Germplasm Evaluation Network) Results in Canola

Table 2. Grain quality assessment- protein (%), oil (%) and test weight (kg/hL).

	Cultivar	Protein (%)		Oil (%)		Test Weight (kg/hL)	
1	**Hyola Feast CL**	19.6	bc	42.8	c	63.7	d
2	**Hyola 970CL**	20.6	a	41.3	d	66.4	b
3	**Phoenix CL**	18.8	d	43.2	c	66.1	b
4	**Captain CL**	18.2	e	44.6	a	64.6	c
5	**CL222167**	19.6	bc	41.2	d	67.4	a
6	**RGT Nizza CL**	19.1	cd	43.9	b	64.6	c
7	**RGT Clavier CL**	19.8	b	41.3	d	67.4	a
8	**AGFCA014820**	18.7	de	45.2	a	64.9	c
Mean		19.3		42.9		65.6	
LSD P=0.05		<0.001		<0.001		<0.001	
P Value		0.5		0.6		0.4	

Fungicide strategies for crown canker and UCI of blackleg

Steve Marcroft and Angela Van de Wouw – Marcroft Consulting & University of Melbourne

When considering disease control in the higher rainfall zones in spring 2025 you need to be aware of blackleg, sclerotinia and alternaria. It is almost certain that all of these diseases will be present in 2025. Although most applications will have already been made previously the only control option come spring is fungicides ***but remember that fungicides always control disease, but disease does not always cause yield loss.*** Given the fungicide resistance issues that are now occurring in VIC, NSW & WA (DMI resistance) and in SA (DMI and SDHI resistance) it is imperative to not use fungicides when the risk of yield loss is low – we want to keep the fungicides for when we really need them.

Is my crop at high risk?

<u>Blackleg:</u>

Blackleg crown canker may cause yield losses; you can determine if it did cause yield loss by cutting plants at the crown immediately after swathing or once seed colour change begins to occur. If plants have more than 30% crown discolouration, then yield loss is likely. However, in the spring there is nothing that you can do to reduce crown canker. Consider management options for your 2026 crop - see the 2025 blackleg management guide and BlacklegCM App.

Blackleg Upper Canopy Infection (UCI) is the same disease and same process as blackleg crown canker but instead of the fungus infecting leaves and growing into the crown, causing a crown canker, UCI blackleg infects the flowers and grows into the branches and upper stem causing blackened pith in the upper parts of the plant. UCI blackleg occurs when the plants commence flowering in early to late winter, this is due to two reasons. Firstly, blackleg being a fungus requires wet conditions for the spores to be released from canola stubble but also prolonged plant wetness for the spores to germinate on the plant, grow and cause an infection. Hence, cool wet conditions associated with late winter are more conducive to disease rather than warmer drying conditions of spring. Secondly, UCI blackleg also requires enough time before harvest to infect the plant, grow into the vascular tissue and cause significant necrosis. Infections that occur closer to harvest do not have enough time to cause yield loss.

UCI in 2025 is definitely a potential issue if your crops commenced flowering in July and most likely an issue if they commenced flowering in the first half of August. Later flowering can still cause UCI, but these crops are a low risk of yield loss.

If my crops flowered before August 15, should I apply a fungicide?

1. Disease pressure

   In addition to date to 1st flower, disease pressure is also critical. Distance to last year's canola stubble (less than 500m is greater risk), rotation length i.e., is the crop sown into 2-year-old stubble and a wet spring, all increase the risk of yield loss. Disease pressure can be determined by looking for leaf lesions on the younger leaves, lesions take approximately 14-21 days to develop so lots of new lesions at 1st flower will indicate that the conditions of the previous month have been conducive for disease. If these conditions continue during the early bloom period than it is likely that blackleg UCI could be an issue.

2. Cultivar resistance

   All cultivars are classified for UCI blackleg ratings.

Fungicide strategies for crown canker and UCI of blackleg

Steve Marcroft and Angela Van de Wouw – Marcroft Consulting & University of Melbourne

Scenario 1

Crop germinated early, commenced flowering in late July, sown adjacent to 2024 canola stubble and into 2023 canola stubble, has lots of leaf lesions and the cultivar is a MR UCI rating.

= apply a 10-30% bloom fungicide application, could easily get a 10% yield return. In this scenario if your cultivar was UCI rating R or has no leaf lesions then there is no risk of yield loss.

Scenario 2

Crop germinated early, commenced flowering in late July, sown 500m from 2024 canola stubble in a 4 year rotation, has a few leaf lesions and the cultivar is a MR UCI rating.

= In this situation yield loss is a lot less likely. If it has been continuously wet during the commencement to the 1st flower growth stage, then yield loss is potentially around 5% but if it was dry during early flowering then a yield return from fungicide application is unlikely. In this scenario if your cultivar was UCI rating MRMS or MS then a yield return from a fungicide application is higher.

Scenario 3

Crop germinated on time, commenced flowering on 7th August, sown adjacent to 2024 canola stubble into 2023 canola stubble, has lots of leaf lesions and the cultivar is a MR UCI rating.

= In this scenario yield loss potential is most likely less than 10% but will be driven by rainfall during flowering. If flowering commenced after 15th August then return from fungicide application is unlikely.

What is the cultivar blackleg rating on my farm?

Blackleg populations overcome genetic cultivar resistance and blackleg populations are different in different regions and on individual farms. Simply put, blackleg populations will evolve in response to the resistance of the cultivar you have been growing on your farm. If you sow a new cultivar its blackleg rating will likely be as advertised in the blackleg management guide. If you have sown the same cultivar for more than 3 years, then the rating of your cultivar may be reduced i.e., if it was a MR when 1st grown it may now behave as a MRMS (3 years later) on your farm. This blackleg evolution however is highly driven by disease pressure; regions that grow 2 crops of canola over 3 years and with high rainfall will result in blackleg populations evolving quickly. Moderate rainfall regions with less intensive canola tend to maintain their genetic resistance ratings.

The best way to determine loss of resistance is to monitor the amount of crown canker and UCI at the end of year. You can check the current blackleg management guide for the latest regional resistance group knowledge, if the resistance group is coloured green, it should be effective in your region. However, you can check the status on your farm by looking for leaf lesions. If the major gene resistance is effective (has not been overcome) there will be few if any blackleg leaf lesions (plants are immune).

If you do not have effective major gene resistance in your cultivar (most cultivars), simply use the blackleg rating. To confirm that your cultivar has not eroded in resistance it is highly advised to cut the plant crown (see the blackleg management guide for details). If blackleg levels are low then continue current practices, if blackleg is increasing over time it is suggested to change cultivars.

Fungicide strategies for crown canker and UCI of blackleg

Steve Marcroft and Angela Van de Wouw – Marcroft Consulting & University of Melbourne

Upper Canopy Infection levels can also be determined at plant maturity (commencement of seed colour change) by observing darkened branches and darkened pith (see the blackleg management guide for photos of crown canker and UCI).

The GRDC/DPIRD Apps BlacklegCM and UCI BlacklegCM are very useful aids to determine if fungicide application is like to provide an economic return. It is not preferable to have completely clean crops, low level of disease will not cause yield loss and will reduce the likelihood of fungicide resistance occurring – the aim it is increase yield not to grow the cleanest crop.

Sclerotinia

Sclerotinia is a complex disease. That is, it is almost impossible to predict how much yield loss will occur. Sclerotinia across a region will be more severe in years with wet springs, tight canola rotations, rotations with double broadleaf crops and early flowering. Many crops in southern HRZ regions will fit this description in 2025. However, individual crops within the same region and seemingly identical conditions will get very different levels of disease severity. Within the same region some crops should be sprayed with a fungicide, and some should not - but it may be impossible to determine at the time of fungicide application.

Consequently, the best determination is for the grower to know the history of individual paddocks. If yearly scouting identifies paddocks that have a past history of sclerotinia and the same paddock has the high risk indicators as described above, a fungicide should be applied. It is more likely that you will have paddocks that have never had sclerotinia issues. The ScerotiniaM App is an excellent spray decision tool.

Alternaria

Alternaria is a superficial disease of canola, simply causing lesions and can occur on all plant parts. When alternaria causes lesions on pods these lesions can cause the pods to prematurely shatter. The shattering will cause yield losses, we have measured up to 20% yield loss in the worst-case scenarios.

Alternaria occurs as a result of sustained rainfall during the podding growth stage. Alternaria lesions are incredibly diverse from distinct round lesions to entire pods turning black, to many pinpoint lesions and all combinations. Unfortunately, there are no management practices to control alternaria.

Fungicide resistance considerations

With the continual use of fungicides comes the increased risk of resistance to fungicides. In recent years there has been an increasing reliance on fungicides to control blackleg disease, with some growers using fungicides as an insurance policy rather than when needed.

We have been screening for fungicide resistance towards the commercial fungicides each year since 2018. Resistance to Group 3 fungicides was first detected in 2015 and has been increasing since, with high levels of resistance to Jockey, Prosaro and Proviso found in every state in 2023 and 2024. The resistance to the DMI (Group 3) fungicides is an incomplete resistance whereby the isolates have an increased tolerance to the fungicide. This means that the fungicides do still have some efficacy towards these resistant isolates, but not the same level of control as the susceptible isolates. Despite this high level of resistance, we have yet to hear of any Group 3 fungicide field failure. This may be because the Group 3 fungicides are still providing some level of control or that high use of the Group 7 fungicides is hiding the loss of efficacy.

Fungicide strategies for crown canker and UCI of blackleg

Steve Marcroft and Angela Van de Wouw – Marcroft Consulting & University of Melbourne

For the first time, resistance to Group 7 fungicides has been detected in blackleg disease. In 2024, several populations collected from the Eyre Peninsular showed high levels of disease on Saltro- and iLeVo-treated plants, suggesting the presence of resistance. Isolates were collected from these stubbles and the presence of highly resistant isolates was confirmed. *In vitro* tests showed the isolates have Resistance Factors (RFs) of 42–270 towards pydiflumetofen and 18–109 towards fluopyram. When inoculated onto seedlings, these isolates caused the same level of disease on Saltro and iLeVo treatments as the untreated, meaning the fungicides were rendered completely ineffective. All the populations where Group 7 resistance has been confirmed are located on the Eyre Peninsula (EP) of South Australia. Out of the 41 populations from the EP, two had high resistance, three moderate, nine low and the remaining 27 had no resistance. Resistance was not detected in any other regions. Fifty populations from the EP were also screened in 2022 and no Group 7 resistance was detected in that year, indicating that this resistance has evolved very recently. Current experiments are underway to determine whether these resistant isolates are leading to field failure on farm.

In 2025, 260 populations are being screened representing all the major canola growing regions. Preliminary results suggest that no resistance is present in any other region except the Eyre Peninsular. Preliminary analysis of on-farm fungicide practices suggests that early foliar applications (2-8 leaf) are a driving factor in the evolution of fungicide resistance.

Recommendations for the management of fungicide resistance

- Do not use fungicides as an insurance!
- In locations where resistance has been detected, avoid SDHI chemistries where possible.
- Avoid 2-8 leaf early foliar applications where possible.
- Plants can tolerate up to 30% infection before yield loss. Remember that fungicides always control disease but don't always provide yield returns.
- Where possible, use other management strategies to minimise disease pressure, such as selecting cultivars with high blackleg rating or isolation of 500m from last year's stubble. Refer to blackleg management guide/BlacklegCM app for further information.
- Select adequate genetic resistance for your regions to reduce reliance on fungicides for controlling blackleg disease.
- If fungicides are required, minimise the number of applications. For example, if sowing early, avoid using a 4–6 leaf foliar spray for crown canker. If sowing late, may require 4–8 leaf foliar spray for crown canker but could avoid 30% bloom for upper canopy infection.
- If putting on multiple applications in a season, rotate chemical groups as well as specific actives, where possible.
- If applying fungicides for Sclerotinia, be aware that these sprays will also put selection pressure on the blackleg pathogen, even if you aren't targeting to control blackleg.
- Monitor crops to ensure fungicides are working efficiently. Potentially leave unsprayed strips for comparison. Report any potential field failures to Alec McCallum or Dr Angela Van de Wouw (apvdw2@unimelb.edu.au).
- see also: CropLife resistance management strategies https://www.croplife.org.au/resources/programs/resistance-management/canola-blackleg/

AGF seeds

Advancing Agriculture through better seeds and service!

Rhys Cottam-Starkey
Gippsland, Yarra Valley, SW Vic, & Lower SE SA
0409 776 126
rhys.cs@agfseeds.com.au

STOCKADE
APW SPRING MILLING WHEAT

A unique APW Spring milling wheat that offers growers in long season environments a high yielding milling wheat that can compete with red wheats currently grown on farm. Built on Trojan with key improvements.

MATURITY SPEED (VERY QUICK – VERY SLOW)

SCEPTORIA RESISTANCE	POWDERY MILDEW	STRIPE RUST	LEAF RUST
MS	SVS	MR	MR

SPRING WHEAT · HIGH YIELDING · WHITE AWNED APW

CAPTAIN CL
WINTER CANOLA

The market leading winter canola, Captain CL, has proven itself again and again in independent trials and in the paddock it will produce market leading yields, biomass, and oil percentage. If you want to maximise your profits with winter canola then grow Captain CL.

MATURITY SPEED (VERY QUICK – VERY SLOW)

BLACKLEG RATING	BLACKLEG GROUP	POD SHATTER RESISTANCE
R	AH	

Clearfield Production System · WINTER CANOLA · DUAL PURPOSE

LONGFORD
WINTER WHEAT

From the breeders who brought you BigRed, Longford is a long season high yield potential red wheat with a strong disease package and lodging tolerance. Longford is suited to dual purpose (graze/grain) or grain only farming systems

MATURITY SPEED (VERY QUICK – VERY SLOW)

SCEPTORIA RESISTANCE	POWDERY MILDEW	STRIPE RUST	LEAF RUST
MRMS	RMR	RMR	RMR

WINTER WHEAT · DUAL PURPOSE · AWNED RED FEED

TRIPLE 2
WINTER WHEAT (AGFWH010222)

Triple 2 is an awned, high yield potential, red winter wheat that is being released in 2025. A mid maturity wheat that is slightly slower than LRBP Beaufort, Triple 2 is suited to medium and long-environments and has shown incredible potential in years of independent trials.

MATURITY SPEED (VERY QUICK – VERY SLOW)

SCEPTORIA RESISTANCE	POWDERY MILDEW	STRIPE RUST	LEAF RUST
MRMS p	RMR p	RMR p	MRMS p

WINTER WHEAT · DUAL PURPOSE · AWNED RED FEED

GERMPLASM
evaluation network

your trusted research partner for germplasm evaluation

FAR AUSTRALIA

CALLING ALL BREEDERS!
Would you like to expose your latest germplasm in GEN 2026?

Developing higher yielding crops through germplasm advances

Expanded Programme for 2025!
Now including milling oats plus and minus fungicide

An Industry Innovations (II) 2025 initiative

Industry Innovations
leading the way to a brighter grains industry

SOWING THE SEED FOR A BRIGHTER FUTURE

GERMPLASM EVALUATION NETWORK (GEN) - BACKGROUND

Hagley, TAS

Wallendbeen, NSW

Esperance, WA

FAR Australia has been working with breeders to bring new products to the Australian Grains industry since its inception in 2012. It is a trusted development partner for many breeders, assisting with bringing in new germplasm to the marketplace, whilst ensuring the correct management to fulfil the genetic yield potential.

Industry Collaborations

FAR Australia is once again partnering with industry to independently showcase ***germplasm*** performance in a series of high productivity ***evaluation*** trials across the country as part of its Industry Innovations (II) initiative.

To develop independent research results on profitable germplasm developments in wheat, barley, milling oats and canola, using specific research strategies designed by FAR Australia for the High and Medium Rainfall Zones of Australia.

Should you wish to invest into FAR Australia's Germplasm Evaluation Network, please contact Darcy Warren 0455 022 044 darcy.warren@faraustralia.com.au

This independent initiative delivers a coordinated and independent network of high productivity trials in wheat, barley and canola. The trials will be managed 'plus and minus' fungicide with control varieties provided by FAR Australia.

SA HRZ CROP TECHNOLOGY CENTRE FIELD DAY

MORNING TIMETABLE

FRIDAY 24th OCTOBER 2025

In-field presentations at canola research site	10:30	11:00	12:15	12:30
Welcome and introductions ***Nick Poole - Managing Director, FAR Australia*** *Outline of the programme for the day.*	**Coffee and introductions**		Travel to shearing shed 849 Banya Rd	Lunch and refreshments
Canola GEN results & disease update, Max Bloomfield & Nick Poole, FAR Australia *Canola is a hugely important crop for the HRZ. Nick looks at the latest disease management and fungicide resistance data produced by Marcroft Consulting along with the FAR Australia GEN trial in canola.*		1		
In-field presentations	**10:30**	**11:00**	**12:15**	**12:30**

Event kindly sponsored by

SA HRZ CROP TECHNOLOGY CENTRE FIELD DAY

AFTERNOON TIMETABLE

FRIDAY 24th OCTOBER 2025

In-field presentations at Cereal Research site	Station No.	1:30	2:00	2:30	3:00	3:30
Darcy Warren, FAR Australia ***Barley resistance update -*** *Darcy discusses lessons learned in integrated management of Net form net blotch (NFNB) with triple mutant fungicide resistance threats* ***.***	1	1				Closing address and refreshments
Nick Poole, FAR Australia ***Reflection on FAR Australia research results from east vs west.*** *Nick, chats about the evolving ways we're using fungicides, the challenges we face in the eastern states of Australia and how to get better value with the products we have.*	2		1			
Max Bloomfield, FAR Australia ***How to manage a 'mixed bag'*** *Max explores the novel management of mixed wheat cropping with a focus on disease and opens a discussion on how you make fungicide decisions.*	3			1		
Kate Morris, MFMG and Ben Jones, FAR Australia ***Pushing potential profit? Benchmarks for agronomy and profit*** *The first year results of our new GRDC Hyper Profitable Crops project are out. Kate and Ben look at the analysis of agronomic and profitability benchmarking in the region.*	4				1	
In-field presentations		**1:30**	**2:00**	**2:30**	**3:00**	**3:30**

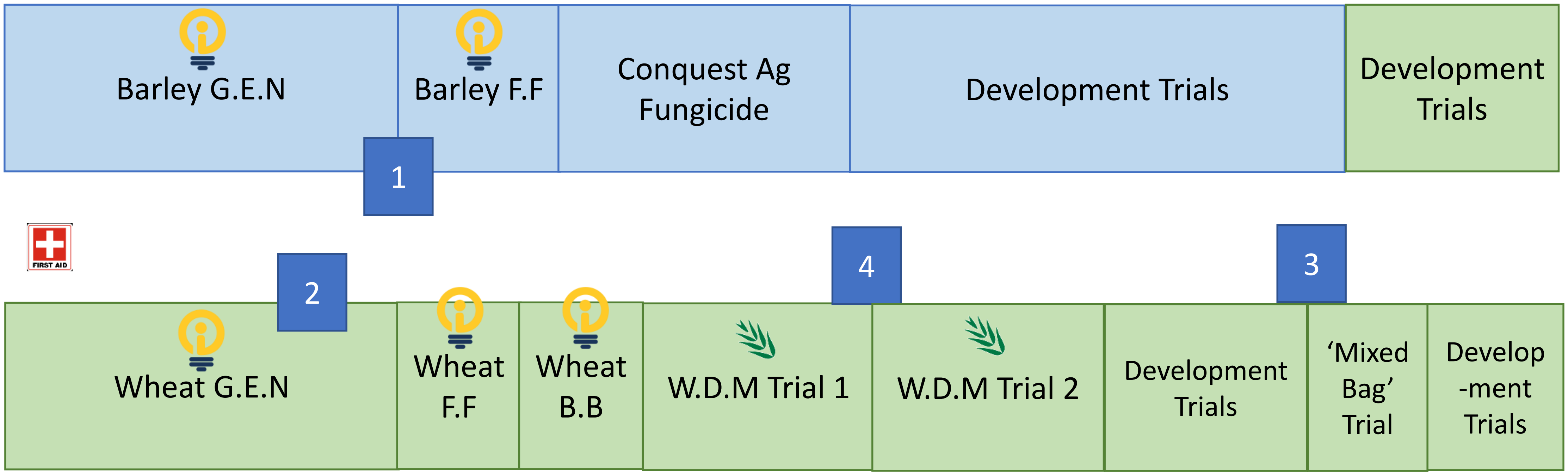
Note we will only split into two groups if high numbers attend (otherwise we will run one group).	1
If we do split into groups we would ask that you stay in your allocated groups. Thank you for your cooperation.	

Event kindly sponsored by

2025 SITE MAP: SOUTH AUSTRALIAN CROP TECHNOLOGY CENTRE (Millicent)

SA CROP TECHNOLOGY CENTRE

Event kindly sponsored by



Key:
G.E.N: FAR Australia Germplasm Evaluation Network
F.F: FAR Australia Fungicide Fingerprinting
B.B: FAR Australia Biological Benchmarking
WDM: Wheat Disease Management

Vehicle entry

Fence Line

Integrated management of Net form net blotch (NFNB) with triple mutant fungicide resistance threats

Darcy Warren[1], Nick Poole[1], Aaron Vague[1], Max Bloomfield[1] & Rajdeep Sandhu[1]
[1] Field Applied Research (FAR) Australia

This paper brings together findings from the GRDC funded, QDPI lead project "Program 5 - Integrated management strategies for Net Form Net Blotch in low, medium, and high rainfall zones", looking specifically at lessons learned in the NFNB Stubble management × fungicide management trial in 2024 and early observations in 2025.

Key point summary

- NFNB severity reached high levels in untreated plots, with late-season infection exceeding 80% in low-input fungicide programs.
- Fungicide management significantly increased yield (mean response +1.21 t/ha) while stubble management alone did not provide a yield benefit.
- High-input fungicide programs delivered the best economic returns (ROI up to $3.78 per $1 spent), though disease was not completely controlled.
- Stubble management (burning or cultivation) did not significantly influence disease or yield in this trial, but remains an important tool where barley follows barley.
- The presence of triple fungicide resistance in *P. teres f. teres* in South Australia highlights the need for integrated disease management (IDM), combining fungicides with resistant varieties, crop rotation and paddock hygiene.

Background
Net form net blotch (NFNB), caused by *Pyrenophora teres f. teres*, remains one of the most significant foliar diseases of barley in southern Victoria. Its prevalence has increased alongside widespread cultivation of susceptible barley cultivars. In recent years, resistance and reduced sensitivity to all three major fungicide groups (DMI, QoI, and SDHI) has been confirmed in Australian NFNB populations. This triple resistance in the pathogen population presents a major challenge to disease control, requiring a shift away from reliance on fungicides alone.

The 2024 NFNB Stubble management trial was established as part of the GRDC funded, QDPI lead project "Program 5 - Integrated management strategies for Net Form Net Blotch in low, medium, and high rainfall zones" to investigate the interaction between fungicide input and stubble management, and to assess their impact on NFNB development, grain yield and economic return.

Trial 3. NFNB Stubble management × fungicide management multi-year trial

- **Location:** Lethbridge, Vic- medium grey clay soil
- **Previous crop:** Wheat (2023)
- **Sown:** 30 May 2024; harvested: 20 December 2024
- **Stubble treatments:** Standing, cultivated (2 May), burnt (2 May)
- **Fungicide strategies:**
    - *Low input*: Systiva (fluxapyroxad) seed treatment only
    - *High input*: Systiva, Opera (GS31), Aviator Xpro (GS39-49) & Opus (GS59)

Integrated management of Net form net blotch (NFNB) with triple mutant fungicide resistance threats

Darcy Warren[1], Nick Poole[1], Aaron Vague[1], Max Bloomfield[1] & Rajdeep Sandhu[1]
[1] Field Applied Research (FAR) Australia

Grain yield:
Mean yield across the trial was 7.40 t/ha. The effect of fungicide management was highly significant ($p < 0.001$), increasing yield by an average of 1.21 t/ha. Stubble management had no significant effect on yield ($p = 0.678$).

Economic return:
High-input fungicide strategies produced strong positive margins (ROI up to $3.78), while low-input programs returned negative margins in all stubble treatments (Table 1).

Disease severity:
NFNB infections were low to moderate early in the season (GS31–39) likely due to a late May sowing however escalated rapidly by the grain fill stage (GS71–75). Untreated/low input plots recorded 80–83% infection compared with 50–59% in high-input plots. Stubble management did not significantly affect disease in the wheat-barley rotation.

Discussion
The results from this trial confirm that fungicides remain effective in reducing NFNB severity and protecting yield, however they also highlight the limitations of a fungicide-dependent approach. Despite four applications across multiple modes of action, NFNB was not fully controlled, with late-season infection still exceeding 50% in high-input treatments. As the presence of triple resistant mutants becomes more widespread in the NFNB pathogen population so the sustainability of such high input programs becomes more questionable.

Stubble management and rotation
Although previous wheat stubble treatments did not influence final disease levels or grain yield in this trial, the preceding wheat crop meant inoculum carryover was relatively low. In continuous barley systems, stubble retention is a major driver of NFNB epidemics. Burning or cultivating barley stubbles remains an important strategy to reduce inoculum pressure, particularly where fungicide efficacy is compromised by resistance and reduced sensitivity. In 2025, trial plots have again been established, overlaying the 2024 trial, and therefore sown into barley stubble. Early season assessments at first node GS31 have shown significant reductions in disease severity in the lower canopy where stubble inoculum has been removed. Although severity levels recorded were relatively low (<10 % leaf area infected (LAI)), these results have been generated in a June sown crop of a MS variety cv Neo CL (more resistant than the 2024 trial) and would realistically be expected to have little to no infection under normal circumstances.

Integrated management of Net form net blotch (NFNB) with triple mutant fungicide resistance threats

Darcy Warren[1], Nick Poole[1], Aaron Vague[1], Max Bloomfield[1] & Rajdeep Sandhu[1]
[1] Field Applied Research (FAR) Australia

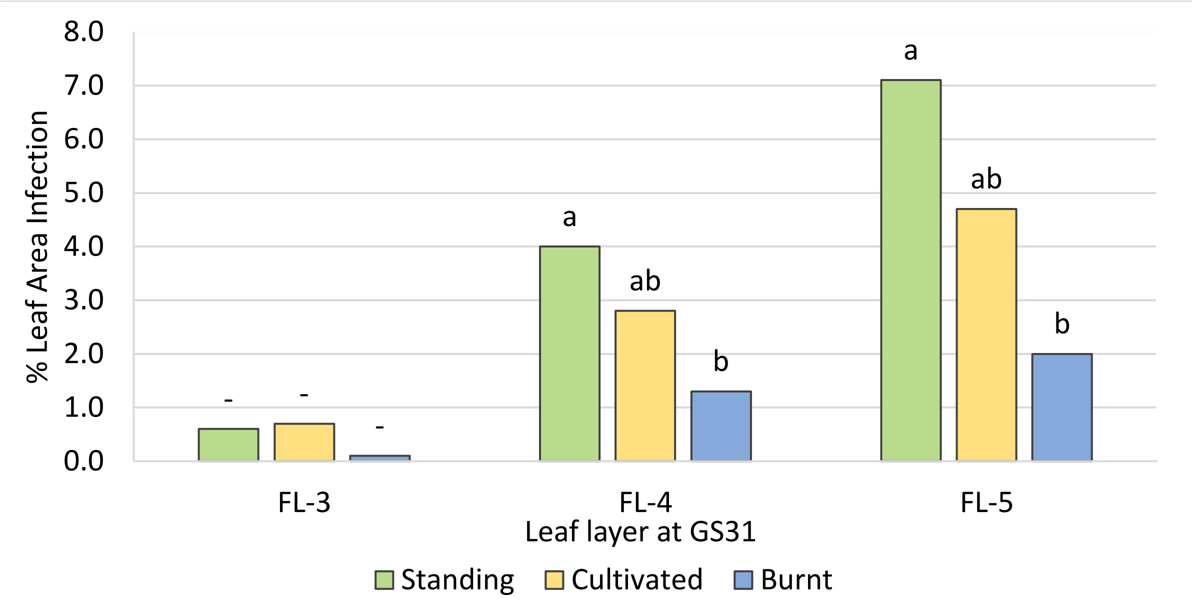


Figure 1. Influence of stubble management on early season Net form net blotch (NFNB) severity (%LAI), assessed 18 August 2025, cv Neo CL.

Resistant varieties

The trial highlights the vulnerability of susceptible varieties under high NFNB pressure. Fungicide input provided yield protection but was unable to deliver complete control. Resistant or moderately resistant cultivars provide the most sustainable protection and should form the foundation of integrated NFNB management. However, shifts in disease spectrum (e.g. increased scald and/or leaf rust) need to be monitored when varietal resistance is utilised.

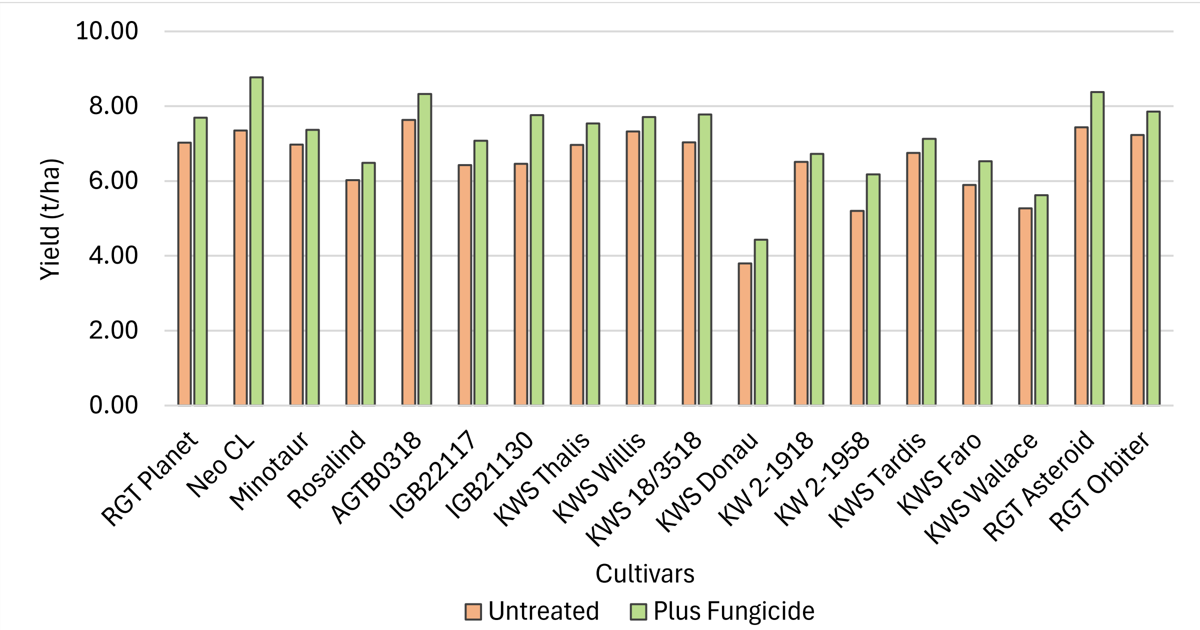


Figure 2. Results from FAR Australia's 2024 Millicent Barley Germplasm Evaluation Network (GEN) trial showing influence of barley variety and fungicide application on yield (t/ha). These trials provide an insight into newly released barley varieties and promising breeder lines and their potential to provide more disease resistant, high yielding options.

Integrated management of Net form net blotch (NFNB) with triple mutant fungicide resistance threats

Darcy Warren[1], Nick Poole[1], Aaron Vague[1], Max Bloomfield[1] & Rajdeep Sandhu[1]
[1] Field Applied Research (FAR) Australia

Fungicide use

The economic data reinforces that low-input fungicide programs are not viable under high NFNB pressure, while high-input programs can still deliver ROI in the short term. However, in the presence of the triple resistant mutations, overuse of fungicides risk accelerating the loss of remaining efficacy. Strategic and targeted fungicide applications and integration of IDM tools is essential.

Table 1. Margin ($/ha) after fungicide, application and stubble management costs have been deducted from the value of additional yield at $345/t**.**

		Response to Fung. and Stubb. Man.	Cost of treatment	Extra income from fung.	Margin after input cost and app.	Return on Investment
Fung. Input	**Stubble Management**	**t/ha**	**$/ha**	**@$345/t**	**$/ha**	**$ back for every extra $1 spent**
Low	**Standing**	0.00	$36.00	$0.00	-$36.00	
Low	**Cultivated**	-0.06	$125.00	-$20.70	-$145.70	-$0.23
Low	**Burnt**	-0.24	$46.00	-$81.77	-$127.77	-$8.18
High	**Standing**	1.16	$141.85	$400.20	$258.35	$3.78
High	**Cultivated**	1.05	$230.85	$360.53	$129.68	$1.85
High	**Burnt**	1.11	$151.85	$383.99	$232.14	$3.31

Conclusion

This trial shows that fungicide programs continue to provide yield and economic benefit in susceptible barley varieties, but they cannot provide complete NFNB control. With triple fungicide resistance now present in Victoria and South Australia, integrated disease management strategies are critical. Resistant cultivars, stubble management in barley-on-barley rotations, and diverse cropping sequences should all be combined with strategic fungicide use. These strategies will reduce pathogen inoculum, limit reliance on chemical control, and extend the life of existing fungicide options.

BIOLOGICAL BENCHMARKING- FIRST IN ITS FIELD

This initiative allows biological products to be evaluated under identical field conditions to synthetic standards, accelerating industry understanding and adoption of effective biological solutions.

Biological Benchmarking, developed by FAR Australia, is a brand-new initiative launching in 2025 to independently evaluate biological crop protection and productivity-enhancing products under Australian conditions. As interest in sustainable farming practices grows, so too does the demand for reliable data on the performance of these products. This initiative aims to provide side-by-side comparisons of new biological options against conventional synthetic controls to support confident decision-making by growers and advisers.

It is:

- **independent**
- **scientifically robust and replicated**
- **aligned with real-world agronomic practice**
- **focused on productivity, sustainability, and profitability**
- **With FAR Australia funded control treatments**

Collaborating Industry Stakeholders

This program is designed for biological product developers, distributors, agronomists, private consultants, and farming groups seeking to better understand the performance and positioning of biological products and demonstrate them to the wider industry.

With increased availability and global interest in biological inputs—from microbial inoculants to plant defense stimulants and biopesticides—there is a growing need for rigorous testing. The Biological Benchmarking series will provide that platform, offering clarity and confidence in a rapidly evolving product space.

Industry Innovations
leading the way to a brighter grains industry

BIOLOGICAL BENCHMARKING
an independent biological evaluation network

Pushing potential profit?

Some benchmarks for wet and drier environments.

Ben Jones and Rebecca Murray, FAR Australia

Introduction

In a world of water, where do you turn to check if your crop management is working to the profitable potential? The Hyper Profitable Crops project has some answers. Input use, agronomy, yield and quality were monitored on 93 paddocks across the high rainfall zones of southern Australia in 2024. Common input and grain pricing, together with weather data, were used to set some initial benchmarks. Crop performance relative to benchmarks can be used to indicate where management (or simply the season) might have led to a poor outcome, and what might be changed to improve future results. Twelve paddocks in southeast South Australia were part of the first season of the project.

Method

Paddocks in either wheat or barley were volunteered by farmer members of discussion groups run by each hub (hosted by MacKillop Farm Management Group). Input data was recorded between harvest of the previous crop and harvest of the focus crop. The hub facilitator recorded inputs, took soil samples (mid-season), and visited paddocks regularly to track growth stage. Before harvest, quadrats of mature plants were harvested and processed to estimate total biomass, yield components, and also provide data for quality analysis. Weather data was taken from the nearest SILO grid cell location (https://www.longpaddock.qld.gov.au/silo/point-data/).

Water-limited potential yields were estimated according to 25 kg/ha/mm grain x (growing season rainfall + irrigation + 30 % of fallow rain – 60 mm evaporation). Growing season was estimated for each hub area as the weeks where average rainfall exceeded a third of evaporation (30 year, over 3 week contiguous periods). A water use cap of 480 mm was applied across all groups, but in future will be adapted to better reflect the growing season. Radiation/temperature limited yields were estimated according to relationships with the photothermal quotient: photosynthetically active radiation divided by average temperature in the four weeks before estimated flowering date.

An estimated gross margin was calculated using the whole paddock yield, with quality set by the sample grain and price according to publicly available grain prices in May 2025 (with adjustment for freight rates according to discussion group location). A common input price list was used across the project and adjusted where necessary to reflect changes in each hub area. Where inputs applied across multiple years (eg. lime, soil amelioration) the cost per year was estimated *pro rata*. Operation costs were estimated on a similar basis. Since releasing the 2024 season reports (and for this analysis), harvest cost has been updated to be in proportion to yield (assuming throughput effectively limits harvest rate for crop yields > 3 t/ha).

Benchmarks

The analysis breaks profit into several components:

Potential yield	whichever of water- and radiation/temperature-limited yield is lowest.
Per cent of potential	how much of potential yield was achieved

Pushing potential profit?

Some benchmarks for wet and drier environments.

Ben Jones and Rebecca Murray, FAR Australia

Price achieved/tonne	depending on quality, port price and estimated freight for each group
Cost	total of inputs, operation cost

Profit and cost are both expressed in terms of potential yield, so that they are comparable across water- and radiation/temperature-limited paddocks.

Benchmarks were calculated for each paddock and averaged across discussion groups, to determine some initial benchmark levels against which all paddocks could be compared.

Results

Many discussion groups achieved an average per cent potential yield achieved around 80% or higher (Figure 1). This seems like a reasonable benchmark for production. Higher per cent potential yields were achieved in drier environments and probably reflect under-estimation of stored water in soils with high plant available water. Some of the SFS Tas paddocks had yield limited by the water use cap, when the radiation/temperature potential yield would more correctly apply. These groups would have lower average per cent potential achieved.

Differences in price achieved reflect port and freight differences (Figure 2), but also quality achieved. In some groups, more of the paddocks are sown to cultivars with a maximum feed grades.

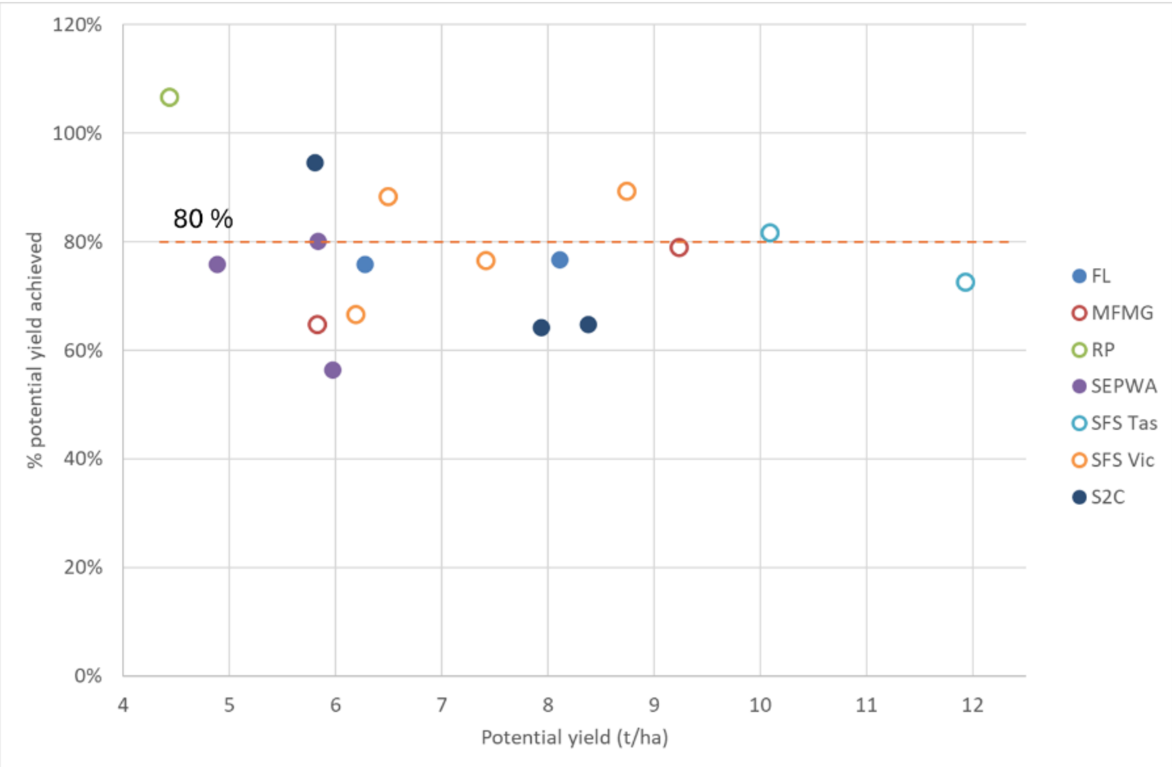


Figure 1. Potential yield benchmark: average per cent potential yield for each discussion group vs potential yield. Colours represent different hubs. The dashed line is a proposed potential yield benchmark of 80%.

Pushing potential profit?

Some benchmarks for wet and drier environments.

Ben Jones and Rebecca Murray, FAR Australia

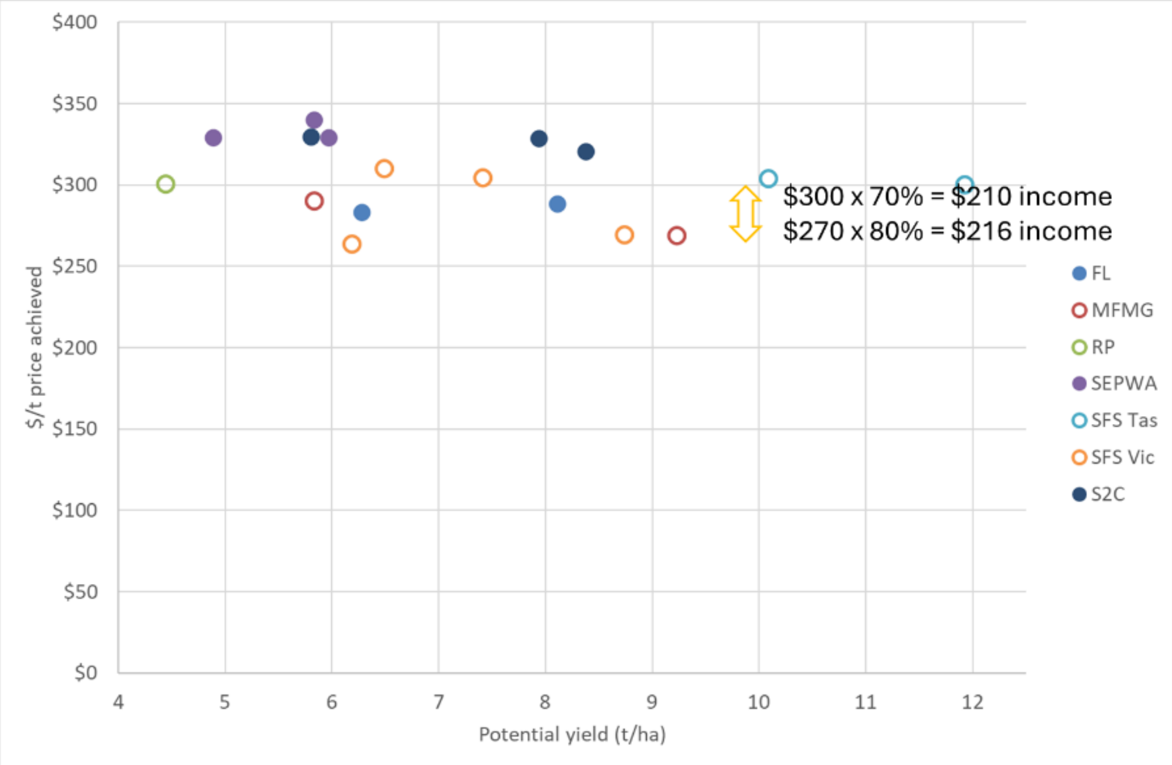


Figure 2. Price achieved benchmark: average grain price achieved in each discussion group vs potential yield. Colours represent different hubs.

**FL = FarmLink (NSW), MFMG = Mackillop Farm Management Group (SA), RP = Riverine Plains (NSW), SEPWA = South East Premium Wheat Association (WA), SFS = Southern Farming systems, S2C = Stirlings to Coast (WA)*

Costs were quite consistent across the groups when expressed relative to potential yield, allowing for many of the groups not including fallow costs (Figure 3), and the highest SFS Tas group having a higher potential yield than indicated. Cost per tonne of potential yield was approximately $100/t above 8 t/ha, and an additional $10/t below it. These may be useful benchmarks.

Many of the groups achieved $130 profit per tonne potential yield (Figure 4) across the range of potential yields. This appears to be a useful upper benchmark. Medium and low benchmarks have been suggested at $100 and $60 profit per tonne potential yield.

Pushing potential profit?

Some benchmarks for wet and drier environments.

Ben Jones and Rebecca Murray, FAR Australia

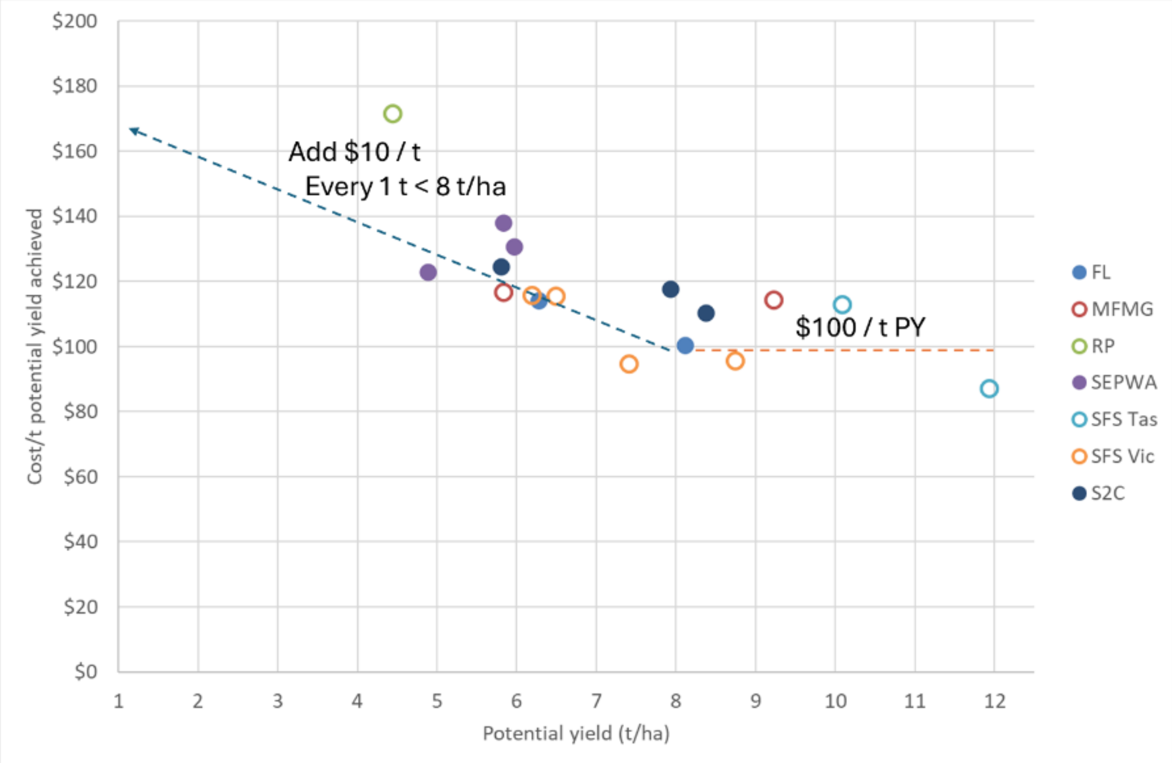


Figure 3. Cost benchmark: average cost per tonne potential yield in each discussion group vs potential yield. Colours represent different hubs. In hubs with open circles, costs were not measured before sowing. The dashed line is a proposed cost benchmark of $100/t potential yield, increasing $10/t for each t/ha below 8 t/ha.

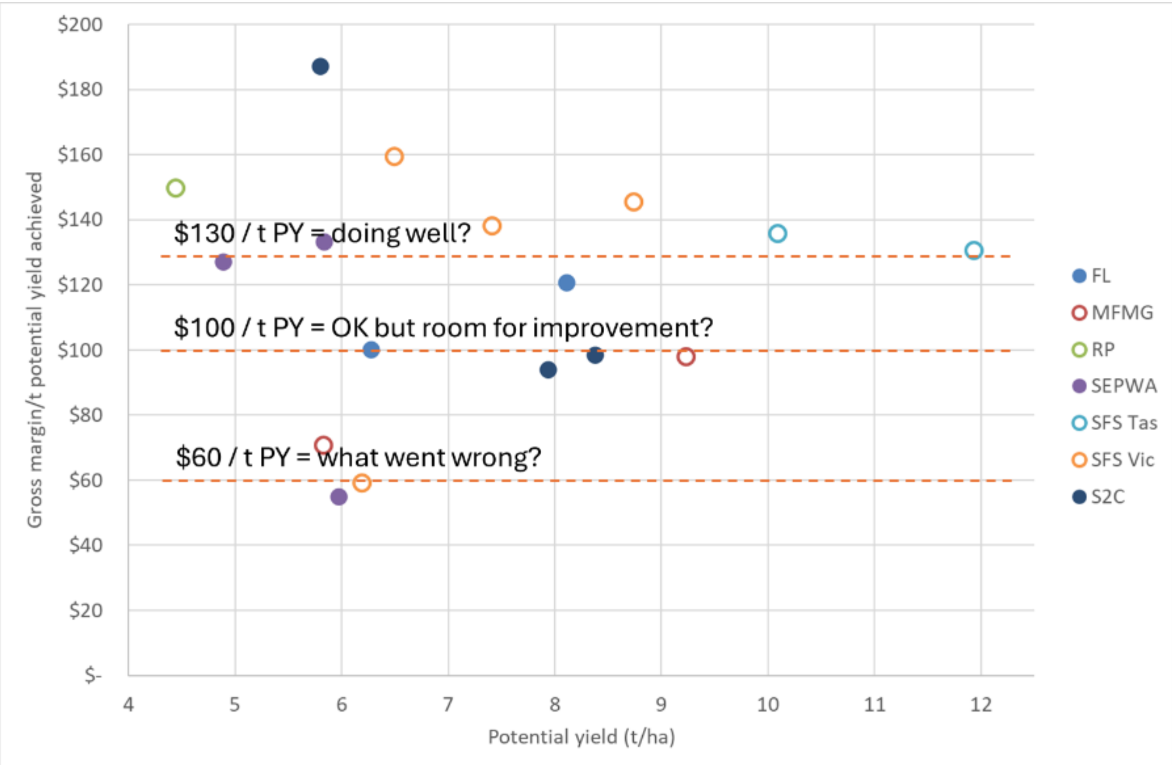


Figure 4. Profit benchmark: average profit per tonne potential yield in each discussion group vs potential yield. Colours represent different hubs. Dashed lines indicate proposed benchmarks.

Pushing potential profit?

Some benchmarks for wet and drier environments.

Ben Jones and Rebecca Murray, FAR Australia

Discussion/Conclusion

Application

The benchmarks are currently easiest applied by farmers who had a paddock in the project in 2024 and can calculate and compare their own benchmarks from the reports. Anyone who can estimate potential yield should be able to calculate what they should be achieving, and begin to target production, price or cost for further investigation if their profit benchmark appears low.

For example, if potential yield is around the 80% benchmark, the cause of a poor profit result rests either with price achieved, or cost.

The cost benchmark should also have application in-season, as a guideline on how much it would be reasonable to spend (or try to save) if the potential yield is likely to be different from planned. For example, at a potential yield of 6 t/ha, a cost benchmark of $120/ha/t potential yield should lead to a total $720/ha spend. If rain leads to a potential yield of 9 t/ha, the cost benchmark of $100/ha/t potential yield suggests a total of $900/ha spend, or no more than $280/ha more (including harvesting the additional yield).

The practical challenge in this application is how early any change in potential yield is known, vs. how much has been spent. In most areas of the project, little can be changed in the 12 weeks before harvest, and only about $20/ha/t potential yield is spent in the 8 weeks before that. The South Australian paddocks are similar, with a bit more (about $25/ha/t potential yield) spent between 20 and 12 weeks before harvest (Figure 5).

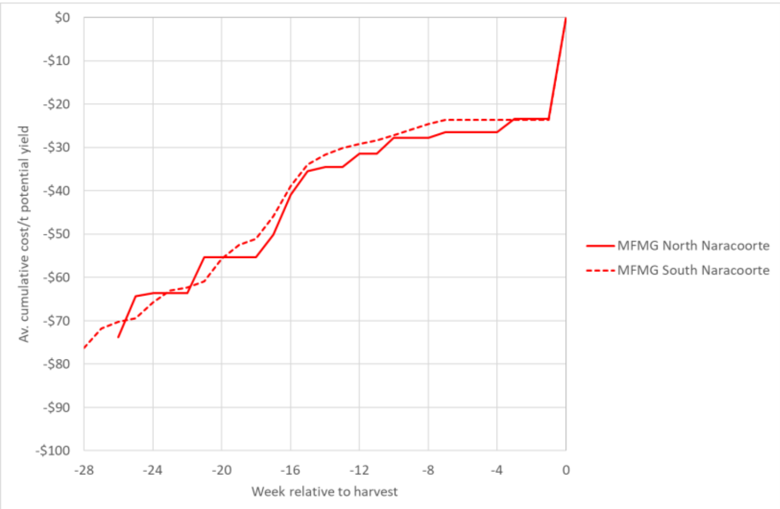


Figure 5. Cost remaining to be spent vs weeks before harvest, average for South Australian discussion group paddocks in 2024.

Future

Much effort this season has gone into establishing the system for transferring data from AgWorld and calculating this first round of benchmarks. The benchmarks, and the questions growers and advisers are asking, will in turn help to further refine the reports for the 2025 season paddocks.

Pushing potential profit?

Some benchmarks for wet and drier environments.

Ben Jones and Rebecca Murray, FAR Australia

There are some obvious refinements; for example, the profit benchmark should be related to potential price achieved. Assuming that costs will only vary slowly, the profit benchmark should be the main thing to change from year to year (with price).

Acknowledgements

The Hyper Profitable Crops project is funded by GRDC (FAR2403-002SAX).

Thank you to all the growers who contributed data, and to the many hub facilitators involved in setting up paddocks, collecting and editing data and reviewing reports. Thank you also to Paul Feely (Federation University CeRDI), the people of the AgWorld Helpdesk, and to members of the FAR Team involved in the project: Darcy Warren, Max Bloomfield, Aaron Vague and Nick Poole.

FUNGICIDE FINGERPRINTING
an independent fungicide evaluation network

Would you like to test your fungicide in 2026?

This independent initiative allows the industry to compare product applications and timings under identical conditions, assessing efficacy, yield response, and profitability. It helps generic manufacturers showcase their products and provides a platform for new actives to demonstrate improvements over existing standards. Resellers and consultants can also test fungicide strategies before recommending them to clients.

Fungicide Fingerprinting, developed by FAR Australia, was launched in 2021 and is the first coordinated and independent fungicide evaluation network in Australia. This initiative aims to generate an independent evaluation of existing and newly developed fungicide strategies to help growers and advisers make better decisions when managing disease. It is:

- independent
- accurate
- consistent in the approach to disease assessment
- within the label stipulations and AFREN compliant control framework

Collaborating Industry Stakeholders

This industry initiative is of benefit to agrichemical manufacturers involved in both new active and generic, fungicide resellers with agronomists in the field, private advisers and regional farming groups.

Purpose

To develop independent results on profitable, productive and sustainable approaches to disease management in wheat and barley using specific strategies devised by fungicide manufacturers, resellers consultants and FAR Australia for commonly occurring fungal pathogens in the HRZ of Australia.

AGF seeds

Advancing Agriculture through better seeds and service!

Rhys Cottam-Starkey
Gippsland, Yarra Valley, SW Vic, & Lower SE SA
0409 776 126
rhys.cs@agfseeds.com.au

STOCKADE
APW SPRING MILLING WHEAT

A unique APW Spring milling wheat that offers growers in long season environments a high yielding milling wheat that can compete with red wheats currently grown on farm. Built on Trojan with key improvements.

MATURITY SPEED (VERY QUICK – VERY SLOW)

SCEPTORIA RESISTANCE	POWDERY MILDEW	STRIPE RUST	LEAF RUST
MS	SVS	MR	MR

SPRING WHEAT · HIGH YIELDING · WHITE AWNED APW

CAPTAIN CL
WINTER CANOLA

The market leading winter canola, Captain CL, has proven itself again and again in independent trials and in the paddock it will produce market leading yields, biomass, and oil percentage. If you want to maximise your profits with winter canola then grow Captain CL.

MATURITY SPEED (VERY QUICK – VERY SLOW)

BLACKLEG RATING	BLACKLEG GROUP	POD SHATTER RESISTANCE
R	AH	

Clearfield Production System · WINTER CANOLA · DUAL PURPOSE

LONGFORD
WINTER WHEAT

From the breeders who brought you BigRed, Longford is a long season high yield potential red wheat with a strong disease package and lodging tolerance. Longford is suited to dual purpose (graze/grain) or grain only farming systems

MATURITY SPEED (VERY QUICK – VERY SLOW)

SCEPTORIA RESISTANCE	POWDERY MILDEW	STRIPE RUST	LEAF RUST
MRMS	RMR	RMR	RMR

WINTER WHEAT · DUAL PURPOSE · AWNED RED FEED

TRIPLE 2
WINTER WHEAT (AGFWH010222)

Triple 2 is an awned, high yield potential, red winter wheat that is being released in 2025. A mid maturity wheat that is slightly slower than LRBP Beaufort, Triple 2 is suited to medium and long-environments and has shown incredible potential in years of independent trials.

MATURITY SPEED (VERY QUICK – VERY SLOW)

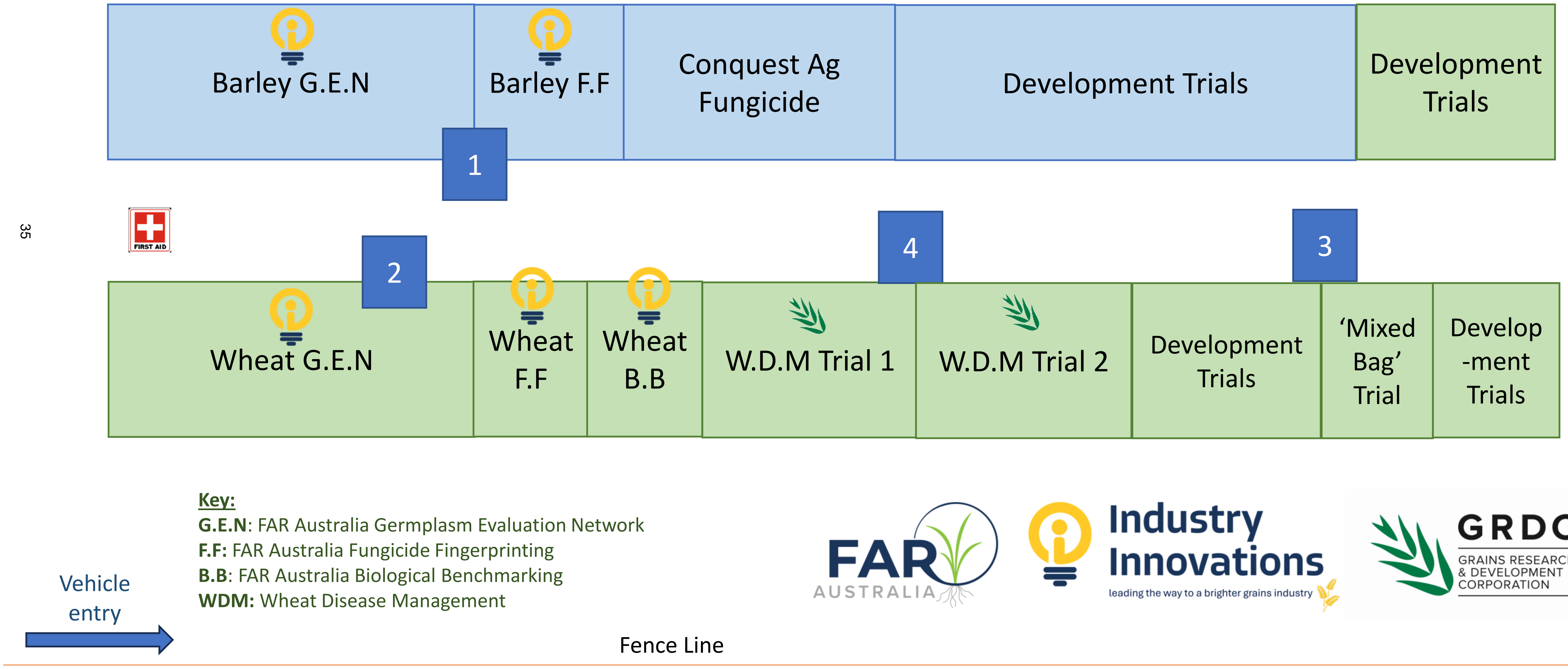
SCEPTORIA RESISTANCE	POWDERY MILDEW	STRIPE RUST	LEAF RUST
$MRMS_p$	RMR_p	RMR_p	$MRMS_p$

WINTER WHEAT · DUAL PURPOSE · AWNED RED FEED

2025 SITE MAP: SOUTH AUSTRALIAN CROP TECHNOLOGY CENTRE (Millicent)

SA CROP TECHNOLOGY CENTRE

Event kindly sponsored by AGF seeds, Elders



Key:
G.E.N: FAR Australia Germplasm Evaluation Network
F.F: FAR Australia Fungicide Fingerprinting
B.B: FAR Australia Biological Benchmarking
WDM: Wheat Disease Management

FAR AUSTRALIA · Industry Innovations – leading the way to a brighter grains industry · GRDC GRAINS RESEARCH & DEVELOPMENT CORPORATION

SCAN THE QR CODE TO LEARN MORE ABOUT US

SOWING THE SEED FOR A BRIGHTER FUTURE

Field Applied Research (FAR) Australia

HEAD OFFICE: Shed 2/ 63 Holder Road
Bannockburn
VIC 3331
Ph: +61 3 5265 1290

12/95-103 Melbourne Street
Mulwala
NSW 2647
Ph: 03 5744 0516

9 Currong Street
Esperance
WA 6450
Ph: 0437 712 011

Email: comms@faraustralia.com.au
Web: www.faraustralia.com.au