NE VICTORIA CROP TECHNOLOGY CENTRE (YARRAWONGA)

FAR AUSTRALIA FIELD DAY

INCREASING PRODUCTIVITY & PROFITABILITY

Thursday 2nd October 2025

FAR Australia North-East Victoria Crop Technology Centre 2025

SOWING THE SEED FOR A BRIGHTER FUTURE

Thanks to our host farmers: Inchbold family and staff

NE VICTORIA CROP TECHNOLOGY CENTRE (YARRAWONGA)

VISITOR INFORMATION

We trust that you will enjoy your day with us at our Northeast Victoria 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 NORTHEAST VICTORIA

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 Northeast Victoria Crop Technology Centre Field Day 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 all agroecological regions from the High Rainfall Zone (HRZ) to the Medium Rainfall Zone (MRZ)
- An opportunity to engage with one of SA foremost experts in growing lentils.
- Profitable Yield Frontiers in the MRZ and LRZ regions of the southern region.
- Benchmarking agronomics and profitability in the Riverine region – what can we take away from the first year of the GRDC Hyper Profitable Crop (HPC) results generated in 2024.
- Expert Presentations: Hear from industry leaders, who will share insights into the latest research and trends shaping the Australian grains industry.
- Interactive Discussions: Engage in group discussions on crucial topics regarding crop profitability.

To make the programme as diverse as possible, I would like to thank all our speakers who have helped to put today's programme together, in particular our keynote speakers Sam Holmes from Central Ag Solutions in SA.

Putting together a quality Crop Technology Centre takes a fair amount of planning so a very big thanks to our host farmers the Inchbold Family. A big thank you to Adam and the team 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

MORNING TIMETABLE

NE VICTORIA CROP TECHNOLOGY CENTRE (YARRAWONGA)

FAR AUSTRALIA

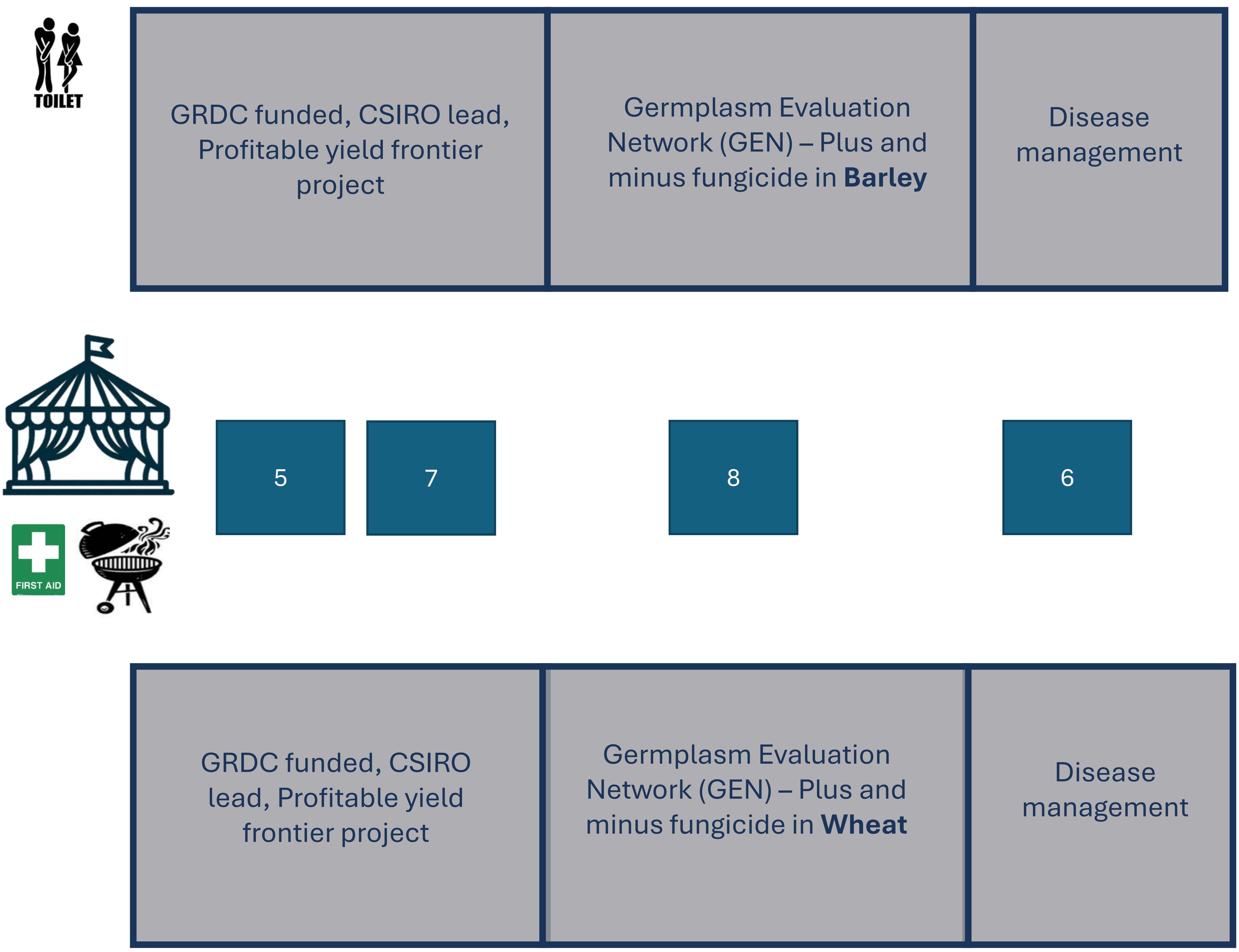
NE VIC CROP TECHNOLOGY CENTRE FIELD DAY
THURSDAY 2nd OCTOBER 2025

In-field presentations at Grain legume research site	10:00	10:15	10:30	11:00	11:30	12:00	12:30
Welcome and introductions ***Nick Poole - Managing Director, FAR Australia*** ***Adam Inchbold, FAR Australia director and board member*** *Outline of the programme for the day.*	Coffee and introductions						Marquee
Sam Holmes, Central Ag Solutions, SA FAR Australia - Is there more potential for Lentils to cover a wider geographic footprint *Sam has over 20 years' experience with growing lentils in SA and has considerable knowledge related to both the development of new lentil germplasm and the management of this important crop. Sam discusses the wider prospects for the crop on different soils.*	1						Lunch and refreshments
Tom Price & Ben Morris, FAR Australia ***How do faba beans compare to other grain legumes as a break crop*** *– Can we improve grain legume performance with ensuring pH adjustments are put in place to aviod shallow acid throttles?*	2						
Canola disease update, Nick Poole, FAR Australia *Canola is a hugely important crop for the Riverina. Nick looks at the latest disease management and fungicide resistance data produced by Marcroft Consulting.*	3						
Move to cereal research site marquee for lunch and refreshments at 12 noon.							
In-field presentations		10.15	10:30	11:00	11:30	12:00	12:30

NE VICTORIA CROP TECHNOLOGY CENTRE (YARRAWONGA)

FAR AUSTRALIA

For afternoon session only



Map is not to scale

Thanks to our host farmer: Inchbold Farming (Inchbold family & staff)

SOWING THE SEED FOR A BRIGHTER FUTURE

Is There More Potential for Lentils to Cover a Wider Geographic Footprint?

Opportunities and Challenges from the Perspective of Breeding and Agronomy
Sam Holmes – Central AG Solutions

1. Why Lentils Became a Major Crop in Australia

- **High profitability:** Lentils are the most profitable break crop in many regions, with gross margins often exceeding cereals. Strong export demand from India, Bangladesh, Sri Lanka and the Middle East has supported high and relatively stable prices.
- **Relative advantage over other pulses:** Unlike faba beans, which rely heavily on Egypt and the domestic market, lentils have a diverse global buyer base. Using a six-year rolling average (decile 5), lentils have traded $280/t above faba beans, giving them a buffer of ~600 kg/ha in yield before financial returns are equivalent. Lentis also have higher price potential than faba beans.
- **Rotational benefits**: Lentils help break cereal disease cycles, improve subsoil moisture carryover particularly in relation to canola, and contribute to nitrogen supply. They also provide alternative herbicide options for weed control.

2. What is Holding Lentils Back?

- **Soil constraints:** Lentils prefer neutral–alkaline soils. Acidic soils (pHCaCl <5.5-6.0), waterlogging, and high boron or salinity reduce yield substantially.
- **Management risks:** Sensitivity to herbicide residues (e.g. Group 4 - clopyralid), harvest losses if delayed, high fire risk, and pests like Etiella.
- **Disease pressure:** Ascochyta and grey mould remain threats, though often less severe than in faba beans.
- **Capital Investment:** Infrastructure such as stone rollers, flex draper front for harvest, Air-Reels for low biomass lentils. Marketing and delivery options. Grain cleaning infrastructure in the region.

3. How Lentils Have Expanded Their Range

- **Breeding breakthroughs:**
  - **Herbicide tolerance:** XT varieties (e.g. Hurricane XT) opened up land and cropping intensity with the introduction of IMI herbicide tolerance, improving weed control.
  - Abiotic stress tolerance: Bolt (2012) improved boron and salinity tolerance: GIA Thunder is currently the most consistent high-yielding variety also with boron and salinity tolerance.
  - **Plant structure:** is critical for both soil type adaptation and harvestability. Greater biomass can lift yield potential but also increases disease risk and reduces light penetration for seed set. Shorter varieties improve airflow yet can compromise harvestability. The ideal plant achieves canopy closure and only begins to lodge at the end of podding - minimising harvest losses (e.g. pod drop from wind) while maintaining airflow to reduce disease. Achieving this balance is a major challenge for breeders, as variable spring conditions can dramatically influence plant growth. Consistency across environments remains the key trait.
  - **Vegetative Frost:** Tolerance varies by variety. Metro shows the strongest tolerance, followed by varieties with Jumbo2 backgrounds, then Thunder. Lightning and Terrier are more sensitive than Thunder, while Hurricane has poor tolerance and Sire the weakest of all.
  - **Metribuzin tolerance:** Grains Innovation Australia developed the world's first dual tolerant lentil, with tolerance to both metribuzin and IMI herbicides. Providing improved weed control and has also become a useful option for farmers that need to control XC canola in the rotation.
  - **Acidity:** GRDC pre-breeding program are evaluating genetics for improved low pH performance.

- **Agronomy advances and management tips:**
  - Early sowing and into standing stubble to optimise podding height and yield potential.
  - Ideally remove clopyralid out of the system. Regardless of label - recommend minimum of 36 months plant back before sowing lentils, potentially 24 months at low rates. Impact often affected by clopyralid on straw residues.
  - Hormone based herbicides during the summer can cause residue issues - be careful. Don't use hormone herbicides as spike for knockdown pre-seeding.
  - Reminder – lentils are not tolerant to Group 5 & 14 pre-emergent herbicides, they rely on soil separation for crop safety.
  - On-row sowing in saline soils can boost profits by $400/ha (SAGIT project CAS4822).
  - Fungicide options have significantly improved disease risk with extended length of protection.

Is There More Potential for Lentils to Cover a Wider Geographic Footprint?

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- Double knock desiccation helps control weeds pre-harvest.
- Lime and soil amelioration programs have extended lentils onto acid soils. Acid-tolerant rhizobia strains are adding further benefit (some benefit in pH5.5, need to achieve pH 6 before a significant benefit).
- Modern weed and disease control practices (Seed Terminators and wick wipers) help maintain clean paddocks and reduce resistance development.
    - Lentils are effective in double break with canola for reducing ryegrass.
- Acidity knowledge:
    - When soil pH drops below pH4.7 (CaCl2) Aluminium (Al) and Manganese (Mn) comes into solution and toxicity starts to occur affecting plant growth. These toxicities are creating the largest portion of yield loss from acidity in lentils. The Al/Mn toxicity occurs as they become too concentrated resulting in burning off of the roots preventing uptake of moisture and other nutrients.
    - Molybdenum (Mo) is essential for Rhizobium bacteria to fix nitrogen. Its availability is often limited in lentils grown on acidic soils. A SAGIT funded project (PIR121) showed that lentil tissue tests must record more than 0.1 mg/kg Mo to avoid yield loss.
- Tile drainage, land forming and stubble systems can improve the viability of lentils on waterlogged or saline land.
- Seed cleaning – gravity table is critical to reduce weed seed spread.
- Effective for a double break with canola – place lentils first in the rotation to prevent volunteer canola competition. If grown after canola - use Metro lentils and don't use clopyralid in the canola phase.

Image: courtesy of Andrew Harding (SARDI)
Lime applied at different rates to a soil with an initial pH of 4.5. Soil samples from each treatment were placed into pots for lentil growth. An additional treatment with elemental sulphur was used to reduce pH below the untreated control.
Treatments (left-right):
Pot 1: 6t/ha lime incorporated - pH 6.3,
Pot 2: 3t/ha lime incorporated - pH 6.1
Pot 3: 3t/ha broadcast lime - pH 4.7 and Al 2ppm
Pot 4: Untreated pH 4.5 and Al 3.7ppm
Pot 5: pH 4.0 and Al 13.7ppm.

Is There More Potential for Lentils to Cover a Wider Geographic Footprint?

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4. Keys to Making Lentils Work

- Start on the best paddocks to build grower confidence and reduce risk while management refinement occurs. Paddock selection is critical for early success.
- Timing is critical: sowing, fungicide applications, and harvest must be prioritised. Harvest timing is critical above all other crops.
- Consistency: skipping years risks missing high-profit seasons that drive long-term averages.
- Invest in infrastructure: stone rollers, flex-fronts.

5. Remaining Challenges

- **Soil Constraints -** expansion still limited without genetic improvements in acidity (particularly for acidity >10cm depth), boron, salinity and waterlogging.
- **Market volatility -** price volatility tied to Indian trade policy and Canadian production.
- **Management intensity -** harvest timing, fire risk, pest monitoring, future desiccation alternatives to paraquat.

Lentils will continue to spread onto new soils and regions in Australia. Breeding, agronomy and industry support have transformed them from a niche crop of the 1990s into Australia's most profitable pulse. The ceiling for further expansion is set not by demand—but by how far soils, acidity, and management systems can be improved to support reliable production.

FAR Australia lentil research

The following article covers lentil yields in the FAR Australia's northeast research work.

2019 – 2020 North East VIC

Lentils Variety trial

12 varieties of lentils replicated were evaluated at the Dookie research site under standard management planted at 120 seeds/m^2 in 2020. Treflan and Round Up were used as a pre-emergent herbicide and no post-emergent herbicide was used.

Results and Interpretation

Key Points:

- Yields of lentils were significantly higher in 2020 than 2019.
- There were small but significant differences in plant establishment with PBA Ace and Flash having populations that were just above 100 plants/m^2 compared to the lowest plant population with PBA Hurricane XT at 82plants/m^2.
- PBA Ace was the highest yielding variety in the trial at 3.27t/ha, the poorest performing cultivar was PBA Greenfield at 2.13t/ha (Table 3)
- The most consistent cultivars over the last two seasons have been PBA Jumbo 2, CIPAL1801 and PBA Bolt (Table 4).

Table 3. Effect of lentil variety on established plant population (plants/m2) and grain yield (t/ha).

Variety	Plant population (plants/m2)		Yield (t/ha)		Yield (% site mean)
PBA Jumbo2	86	de	2.76	a-d	108.3
PBA Hurricane XT	82	e	2.40	cde	94.2
PBA Greenfield	90	b-e	2.13	e	83.4
PBA Ace	105	a	3.27	a	128.2
PBA Flash	101	ab	2.26	de	88.5
PBA Hallmark XT	92	b-e	2.23	de	87.4
PBA Bolt	87	cde	2.69	bcd	105.5
PBA Giant	97	a-d	2.23	de	87.5
CIPAL1721	87	cde	2.45	b-e	96.1
CIPAL1504	94	a-d	2.95	ab	115.7
Jumbo	98	abc	2.34	de	91.8
CIPAL1801	89	cde	2.89	abc	113.4
LSD	**12**		**0.54**		
P val	**0.015**		**0.005**		

FAR Australia lentil research

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Table 4. Influence of lentil variety on 2 Year yields (%), SPA Dookie, Victoria.

Variety	2019 Yield (t/ha)		2020 Yield (t/ha)	
PBA Jumbo2	1.96	a	2.76	a-d
PBA Hurricane XT	1.38	d	2.40	cde
PBA Greenfield	1.47	bcd	2.13	e
PBA Ace	1.37	d	3.27	a
PBA Flash	1.85	ab	2.26	de
PBA Hallmark XT	1.60	a-d	2.23	de
PBA Bolt	1.81	abc	2.69	bcd
PBA Giant	1.21	d	2.23	de
CIPAL1721	1.80	abc	2.45	b-e
CIPAL1504	1.42	cd	2.95	ab
Jumbo	1.97	a	2.34	de
CIPAL1801	1.89	a	2.89	abc
Mean	1.64		2.55	
LSD	**0.41**		**0.54**	
P val	**0.005**		**0.005**	

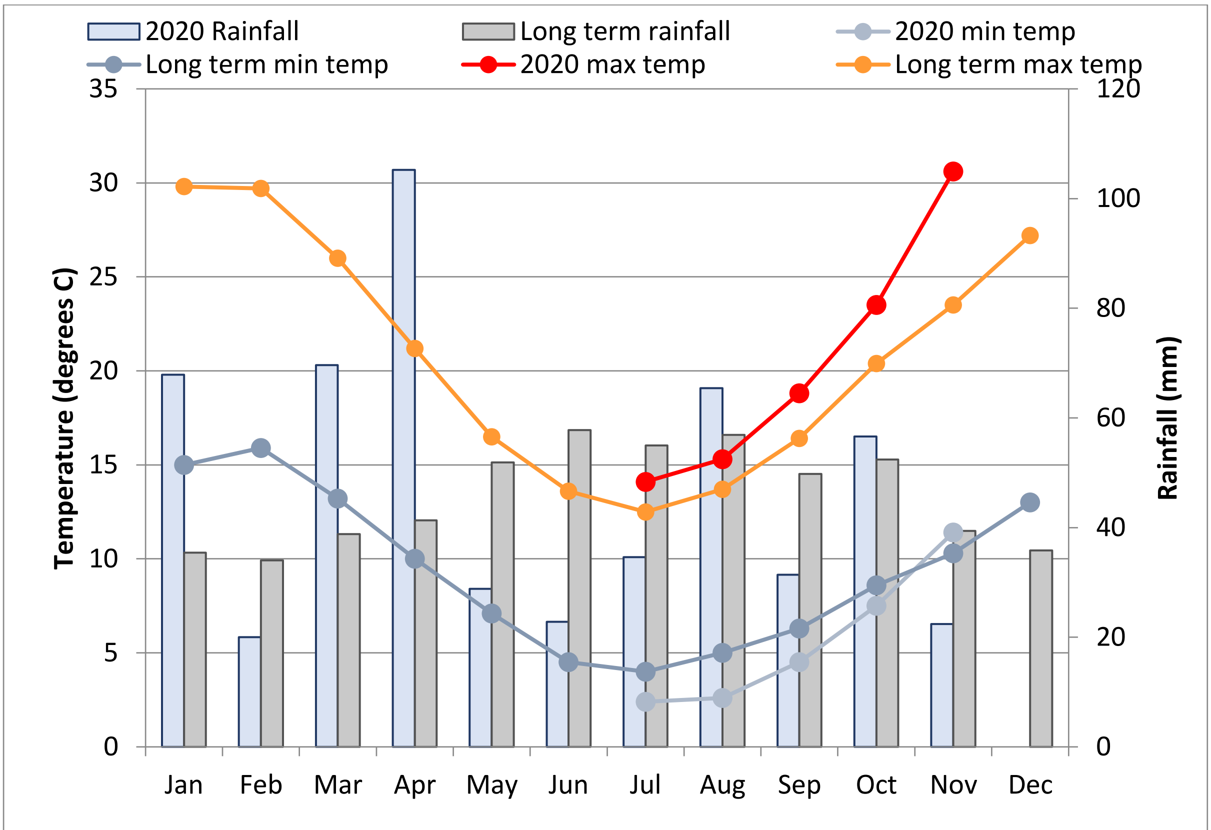

Figure 1. Average monthly rainfall, average monthly maximum and minimum temperatures and absolute maximum or minimum at the at the Yabba North trial site (MRZ, Victoria) in 2020 compared with the long term average for Dookie, VIC (closest long term weather station).

FAR Australia lentil research

The following article covers lentil yields in the FAR Australia's northeast research work.

2023 Daysdale, NSW

Key findings:

- Lentil grain yields averaged 1.21 t/ha with no difference between the four varieties tested. Peak biomass (measured in PBA Hallmark XT) averaged 6.03 t/ha with no difference between Nitrogen (N) treatments tested.
- PBA Kelpie produced the largest seeds with 5.2 g/100 seeds and PBA Hallmark XT produced the smallest seed with 4.2 g/100 seeds. However, increasing N supply increased PBA Hallmark seed size to 4.4g.

Trial Details

Table 1. Trial management details for pulse species and variety screening trials.

Management	**Details**
Pre-sow herbicide	3 May – 2L/ha trifluralin
Sowing	3 May
Starter fertiliser	80kg/ha MAP
Fungicide	2 August – Chlorothalonil 2.3L/ha Carbendazim 0.5L/ha 29 August – 0.75L/ha Miravis Star 2 October – 0.75L/ha Veritas
Harvest	10 December

Table 2. Pulse species, seeding rates and varieties sown in 2023 Daysdale trials. Bolded varieties were also tested under high nitrogen status (100 kg N/ha applied)

Species	**Seeding Rate (seeds/m²)**	**Varieties**			
Lentils	120	**PBA Hallmark**	PBA Kelpie XT	GIA Leader	CIPAL2122

Lentils

Table 1. Lentil biomass (t/ha), grain yield (corrected to 14% moisture, t/ha), grain weight (100SW), grain nitrogen concentration (%).

	Peak Biomass		**Grain Yield**		**100 Seed Weight**		**Grain N Concentration**	
	(t/ha)		(t/ha)		(g)		(%)	
PBA Hallmark	5.56	-	1.22	-	4.2	d	4	-
PBA Kelpie XT			1.16	-	5.2	a		
CIPAL 2122			1.24	-	4.5	c		
GIA Leader			1.17	-	4.7	b		
PBA Hallmark +N	6.49	-	1.26	-	4.4	c	4.1	-
Grand Mean	**6.03**		**1.21**		**4.6**		**4.0**	
P Value	0.263		0.505		<0.001		0.215	
LSD P=.05	ns		ns		0.1		ns	

FAR Australia lentil research

The following article covers lentil yields in the FAR Australia's northeast research work.

Depth		0-10	10-100
Texture			
Colour			
pH (1:5 CaCl2)		4.9	
Organic Carbon (W&B)	%	0.8	
Electrical Conductivity (1:5 water)	dS/m	0.05	
Nitrate Nitrogen	mg/kg	10.4	
Ammonium Nitrogen	mg/kg	1.1	
Total Nitrogen	kg/ha	17.3	67.4
Phosphorus (Colwell)	mg/kg	39.5	
PBI		49.0	
Sulphur (KCl40)	mg/kg	4.5	
Chloride	mg/kg	<10	
Cation Exch. Cap.	cmol(+)/kg	5.5	
Sodium % of Cations (ESP)	%	0.6	
Aluminium Saturation	%	2.5	
Calcium (Amm-acet.)	%	74.0	
Magnesium (Amm-acet.)	%	11.5	
Potassium (Amm-acet.)	%	12.0	

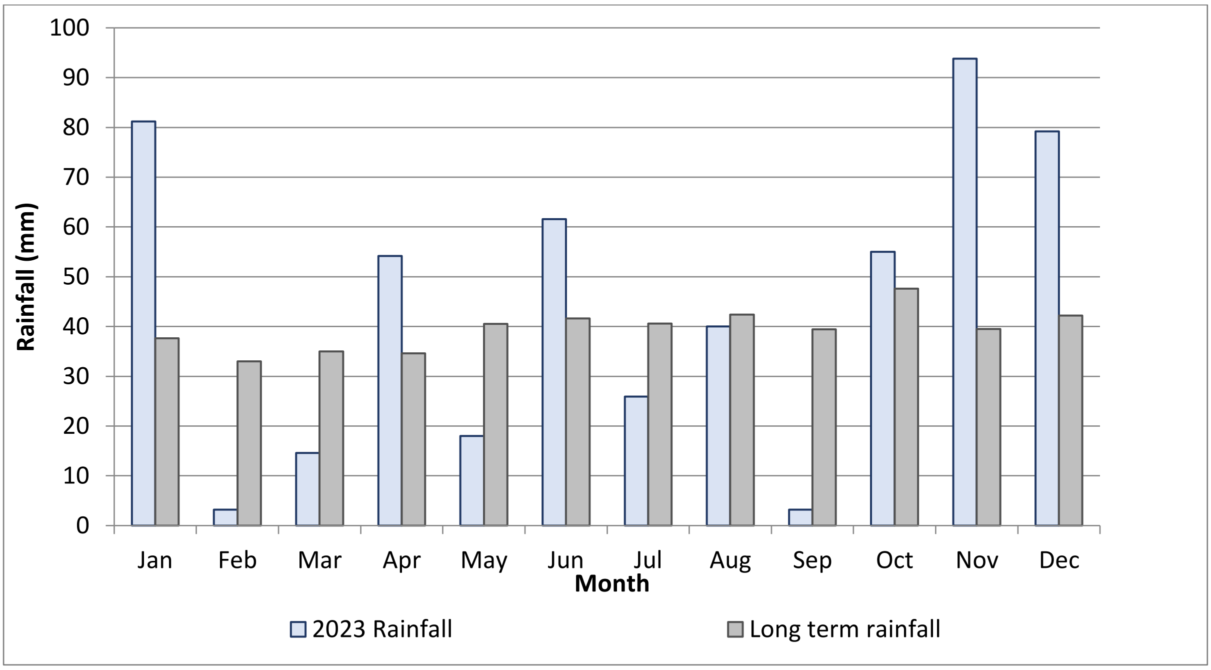

Figure 1. Monthly rainfall for Daysdale site in 2023 and the long term mean.

FAR Australia lentil research

The following article covers lentil yields in the FAR Australia's northeast research work.

2024 Daysdale, NSW

Key findings:

- Lentil grain yield averaged 0.82t/ha with GIA Thunder producing the highest grain yield of 1.13t/ha.
- PBA Kelpie XT produced the largest seed with 4.6g/100 seeds. Peak biomass of PBA Hallmark XT averaged 3.85t/ha.

Trial Details

Table 1. Trial management details for pulse species and variety screening trials.

Management	**Details**
Pre-sow herbicide	29 April – 2L/ha Treflan 2L/ha Paraquat 250
Sowing	29 April
Starter fertiliser	80kg/ha MAP
Fungicide	8 August – 2kg/ha Mancozeb 29 August – 0.5L/ha Aviator Xpro
Harvest	22 November

Table 2. Pulse species, seeding rates and varieties sown in 2023 Daysdale trials.

Species	Seeding Rate (seeds/m^2)	Varieties				
Lentils	120	**PBA Hallmark**	PBA Kelpie XT	GIA Leader	GIA Thunder	ALB Terrier

Lentils

Table 8. Lentil biomass (t/ha), grain yield (t/ha), grain weight (100SW), grain nitrogen concentration (%) and total nitrogen removal from grain yield (kg N/ha).

	Peak Biomass	**Grain Yield**		**100 Seed Weight**		**Grain N Concentration**	**N Removal**
	(t/ha)	(t/ha)		(g)		(%)	(kg/ha)
PBA Hallmark XT	3.85	0.76	bc	4.0	bc	4.03	26.4
PBA Kelpie XT		0.53	d	4.6	a		
GIA Thunder		1.13	a	3.9	c		
GIA Leader		0.73	cd	4.2	b		
ALB Terrier		0.96	ab	3.8	c		
Grand Mean	**3.85**	**0.82**		**4.1**		**4.03**	**26.4**
P Value		<0.001		<0.001			
LSD P=.05		0.21		0.3			

FAR Australia lentil research

The following article covers lentil yields in the FAR Australia's northeast research work.

Soil test results

		0-10	10-20	20-40	40-60	60-100
pH (1:5 Water)		5.9	6.1	6.9	7.2	8.0
pH (1:5 CaCl2)		5.0	5.0	5.9	6.1	6.7
Electrical Conductivity (1:5 water)	dS/m	0.07	0.04	0.03	0.04	0.05
Elec. Cond. (Sat. Ext.)	dS/m	0.4	0.2	0.2	0.2	0.3
Chloride	mg/kg	<10	<10	<10	<10	<10
Sulphur (MCP)	mg/kg		7.8	5.0	7.8	8.3
Nitrate Nitrogen	mg/kg	20	6.2	4.7	3.4	2.1
Ammonium Nitrogen	mg/kg	1.2	0.97	0.69	0.64	0.68
Total Nitrogen	kg/ha	31.8	10.8	16.2	12.1	16.7
Phosphorus (Colwell)	mg/kg	49				
Phosphorus Buffer Index (PBI-Col)		67				
Available Potassium	mg/kg	200				
Calcium (Amm-acet.)	cmol(+)/kg	4.0				
Potassium (Amm-acet.)	cmol(+)/kg	0.52				
Magnesium (Amm-acet.)	cmol(+)/kg	0.38				
Sodium (Amm-acet.)	cmol(+)/kg	<0.022				
Calcium/Magnesium Ratio		11				
Aluminium (KCl)	cmol(+)/kg	0.15				
Cation Exch. Cap.	cmol(+)/kg	5.08				
Sodium % of Cations (ESP)	%	<1				
Aluminium Saturation	%	2.9				
Sulphur (KCl40)	mg/kg	5.9				
Organic Carbon (W&B)	%	0.90				

FAR Australia lentil research

The following article covers lentil yields in the FAR Australia's northeast research work.

Daysdale weather data 2024

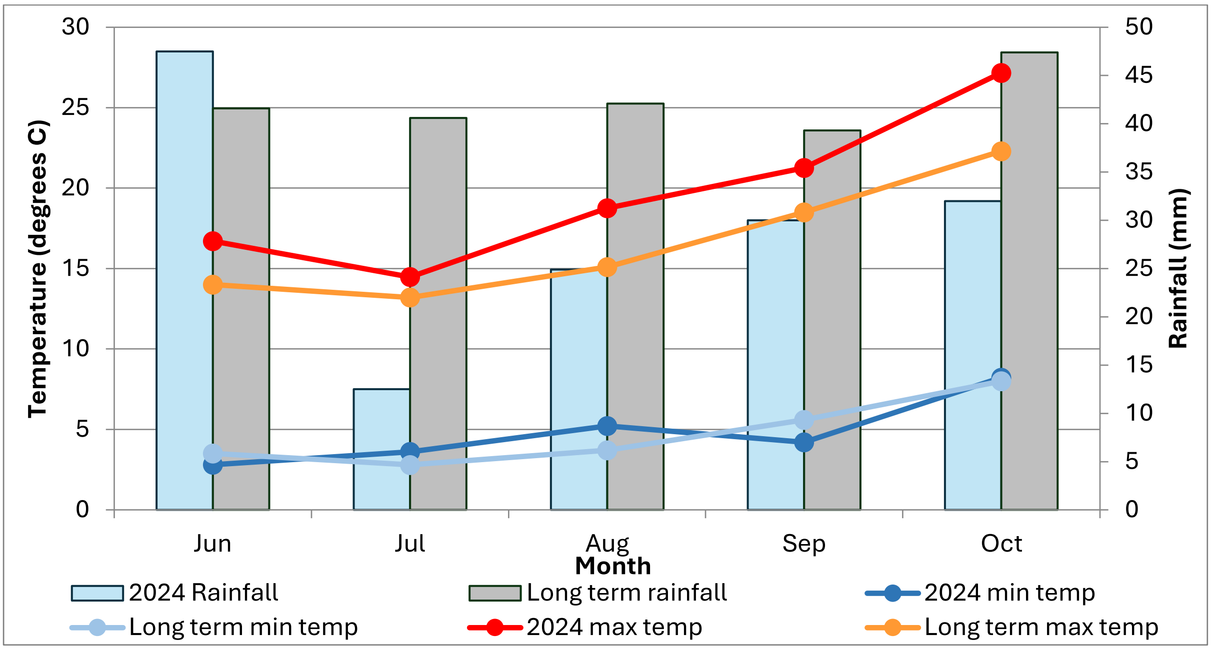

Figure 1. 2024 growing season rainfall recorded on site and long-term rainfall recorded at Oaklands General Store (1925 to 2024) and 2024 minimum and maximum temperatures recorded on site long-term mean recorded at Corowa Airport (1890 to 2024) for the growing season (June-October). Rainfall June to October = 146.9mm.

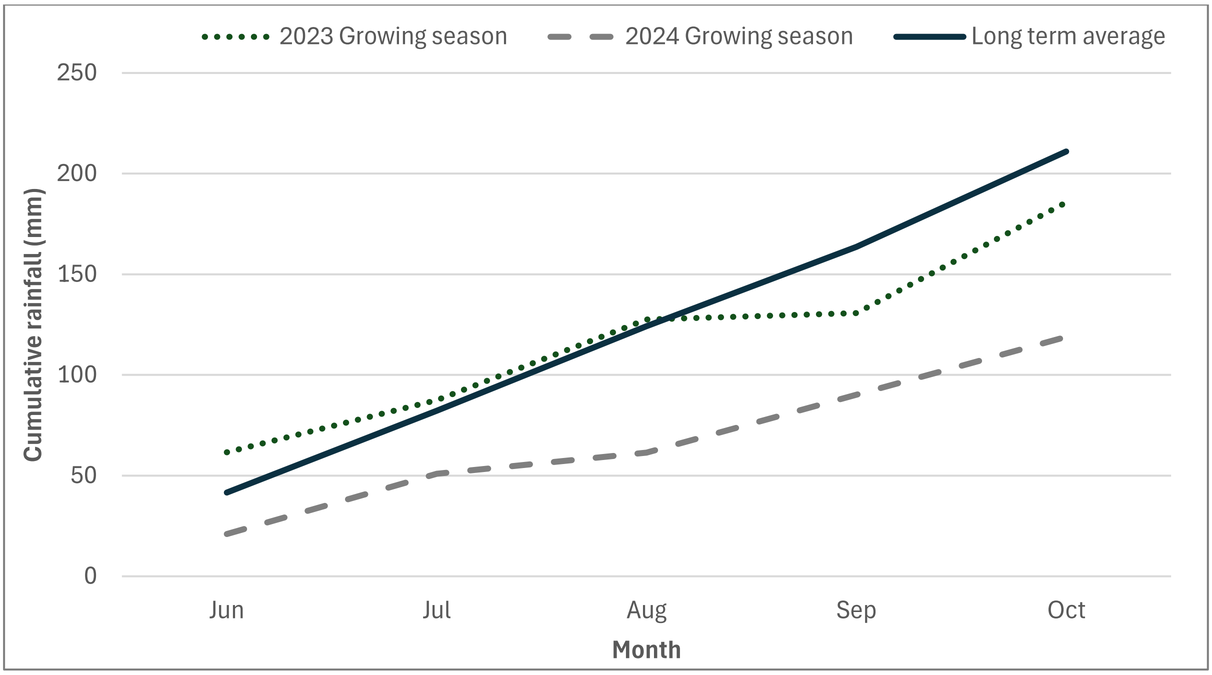

Figure 2. Cumulative growing season rainfall for 2023, 2024 and the long-term average for the growing season (June-October).

GERMPLASM evaluation network

your trusted research partner for germplasm evaluation

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.

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?

Blackleg:

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

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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

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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/

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

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an independent biological evaluation network

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MORNING TIMETABLE

NE VICTORIA CROP TECHNOLOGY CENTRE (YARRAWONGA)

NE VIC CROP TECHNOLOGY CENTRE FIELD DAY
THURSDAY 2nd OCTOBER 2025

In-field presentations at Grain legume research site	10:00	10:15	10:30	11:00	11:30	12:00	12:30
Welcome and introductions ***Nick Poole - Managing Director, FAR Australia*** ***Adam Inchbold, FAR Australia director and board member*** *Outline of the programme for the day.*	**Coffee and introductions**						**Marquee**
Sam Holmes, Central Ag Solutions, SA FAR Australia - Is there more potential for Lentils to cover a wider geographic footprint *Sam has over 20 years' experience with growing lentils in SA and has considerable knowledge related to both the development of new lentil germplasm and the management of this important crop. Sam discusses the wider prospects for the crop on different soils.*	1						**Lunch and refreshments**
Tom Price & Ben Morris, FAR Australia ***How do faba beans compare to other grain legumes as a break crop*** *– Can we improve grain legume performance with ensuring pH adjustments are put in place to aviod shallow acid throttles?*	2						
Canola disease update, Nick Poole, FAR Australia *Canola is a hugely important crop for the Riverina. Nick looks at the latest disease management and fungicide resistance data produced by Marcroft Consulting.*	3						
Move to cereal research site marquee for lunch and refreshments at 12 noon.							
In-field presentations		**10.15**	**10:30**	**11:00**	**11:30**	**12:00**	**12:30**

AFTERNOON TIMETABLE

NE VICTORIA CROP TECHNOLOGY CENTRE (YARRAWONGA)

FAR AUSTRALIA

NE VIC CROP TECHNOLOGY CENTRE FIELD DAY
THURSDAY 2nd OCTOBER 2025

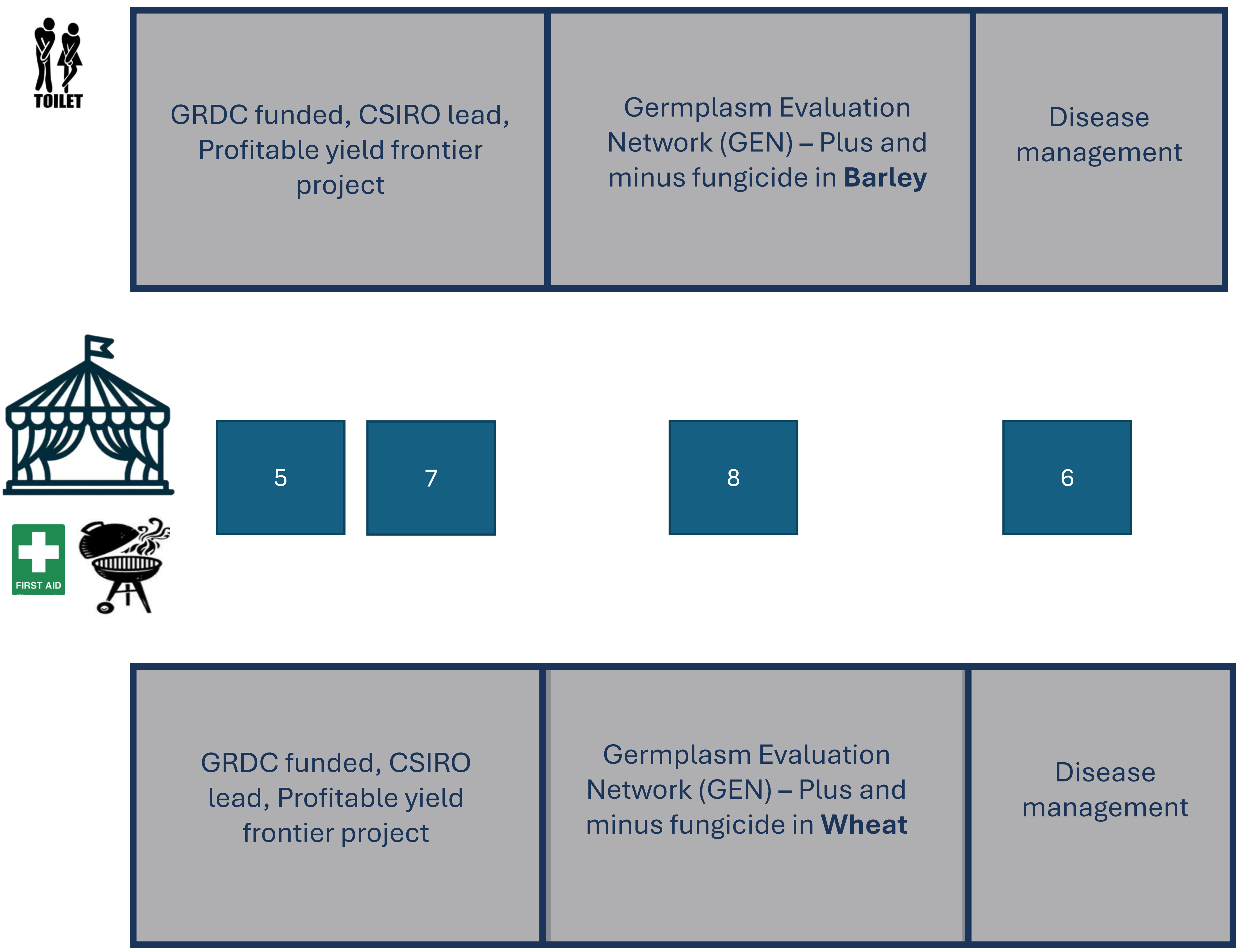
In-field presentations at Cereal Research site	Station No.	1:30	2:00	2:30	3:00	3:30
						Marquee
Jane Mcinnes, Riverine Plains and Tom Price, FAR Australia ***Pushing potential profit? Benchmarks for agronomy and profit in the Riverine Plains region*** *The first year results our new GRDC Hyper Profitable Crops project are out. Jane and Tom look at the analysis of agronomic and profitability benchmarking in the region.* GRDC	5	1	2			Closing address and refreshments
Nick Poole and Ben Morris, FAR Australia ***Making better decisions on disease management practices in wheat and barley*** *Nick and Ben look at two key GRDC projects (RiskWise & Wheat Disease Management that seek to use new technologies and decision support tools to make profitable and sustainable decisions with fungicides.*	6		1	2		
James Manson, CSIRO & Tom Price FAR Australia ***Profitable Yield Frontiers in wheat and barley.*** *James and Tom look at the second year trials and first year results of a GRDC project that aims to build on the legacy of Hyper Yielding Crops in the southern MRZ region.* GRDC	7			1	2	
Ben Morris & Nick Poole, FAR Australia *The Mulwala team look at this year's* ***Germplasm Evaluation Network (GEN) for wheat & barley*** *- whiat have learnt so far?*	8	2			1	
In-field presentations		1:30	2:00	2:30	3:00	3:30

For the presentations, we would be obliged if you could remain within your designated group number. Note we will only split into two groups if high numbers attend.	1
Thank you for your cooperation.	2

NE VICTORIA CROP TECHNOLOGY CENTRE (YARRAWONGA)

FAR AUSTRALIA

For afternoon session only



Map is not to scale

Thanks to our host farmer: Inchbold Farming (Inchbold family & staff)

SOWING THE SEED FOR A BRIGHTER FUTURE

Break crop fertility and organic manures 2022 - 2024

Ben Morris, Tom Price & Rebecca Murray, FAR Australia & Riverine Plains Inc team

Key messages: Grain yields averaged 9 t/ha across the trial, with the lowest yield recorded in the fallow treatment with farm standard nitrogen at 7.93 t/ha and the highest yield in the 10t/ha manure treatment with extra nitrogen at 9.68 t/ha.

- When yields were averaged across manure treatments, the application of an extra 75kg/ha of nitrogen significantly improved yield when compared to the farm standard. However, when yields were averaged across nitrogen treatments, the 10t/ha manure treatment was the only manure treatment to significantly improve yield when compared to the untreated control.
- Averaged across all treatments grain protein increased from 10% to 11.2% when an extra 75kg of Nitrogen was applied. This lifted the grain protein from ASW to APW.
- Where the chemical fertiliser (N-P-K-S) equivalent to 5t/ha of manure was applied the grain protein averaged 11.0% and was significantly higher than all the other treatments where manure wasn't applied.
- In the fallow treatment grain protein averaged 10% and was significantly lower than all other treatments.

Aim:

There is an abundance of organic amendment options in northeast Victoria, due to the proximity of feedlots and other intensive livestock operations. Consequently, there is local interest in using these by-products to supply nutrients for grain production systems and to improve any soil constraints.

Nitrogen fixation provides most of the nitrogen demand of grain legume crops at high yields (assuming adequate rhizobial function). A large part of this fixed nitrogen is exported in grain, which can affect the pulse crop's potential to restore fertility to the soil and therefore may not be enough to sustain higher-yielding wheat crops the following season.

This project was designed to evaluate whether the benefits of nitrogen fixation by legume crops can be amplified in a subsequent wheat crop with added organic amendments or manure. It will also look at whether this can buffer the farm business from high synthetic fertiliser inputs.

Method:

A faba bean crop was sown and harvested in 2022. To leverage the fertility of this crop's legacy, a manure trial was established the following year. 16 treatments were established on paired plots. The first treatments were established in the prior faba bean crop. In early September 2022 (early to mid-flower), parts of the faba bean crop were slashed and removed to create a 'fallow' effect while in other areas the beans were slashed and spread evenly on the surface to create a 'green manure' effect.

Break crop fertility and organic manures 2022 - 2024

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Prior to sowing in April 2023, three rates of manure (2.5 t/ha, 5.0 t/ha and 10 t/ha all at 23% moisture) were spread on the surface. Other treatments including the Nitrogen (N) value of 5t manure and the N-P-K-S value of 5t manure was spread prior to sowing although a small amount was withheld awaiting final test results for the manure. This amount was applied on 1 June.

Table 1. Nutrients applied prior to sowing (5t/ha manure equivalent). Ammonium sulphate, monopotassium sulphate, muriate of potash and urea were used.

	Nutrients Applied (kg/ha)			
	Nitrogen	Phosphorus	Potassium	Sulphur
App 1	32.7	16.9	50.2	10.6
App 2	13.6	10.5	3.8	4.4
Total	**46.3**	**27.4**	**54.0**	**15.0**

The whole trial was fertilised with the same rate of urea that the farmer used on the surrounding paddock. Each pair of plots was split with half of each treatment allocated an extra 75kg/ha of nitrogen; this amount was applied as top-dressed urea on 4 August at early stem elongation (GS32).

Results:

Table 2. Influence of manure treatment on grain yield (t/ha) and harvest index.

	Grain Yield (t/ha)					
Treatment	**Std N**		**Extra 75 N**		**Average**	
Nil	8.70	-	9.40	-	**9.05**	**bc**
2.5t/ha Manure	8.87	-	9.36	-	**9.11**	**abc**
5t/ha Manure	8.73	-	9.46	-	**9.09**	**abc**
10t/ha Manure	9.01	-	9.68	-	**9.34**	**a**
N Value 5t/ha Manure	8.56	-	8.98	-	**8.77**	**d**
NPKS Value 5t/ha Manure	9.16	-	9.47	-	**9.31**	**ab**
Fallow	7.93	-	8.94	-	**8.44**	**e**
Green Manure	8.53	-	9.24	-	**8.89**	**cd**
Mean	**8.69**	**b**	**9.32**	**a**		

Manure	**LSD**	0.27	**P Val**	<0.001
Nitrogen	**LSD**	0.14	**P Val**	<0.001
Manure x Nitrogen	**LSD**	ns	**P Val**	0.300

Break crop fertility and organic manures 2022 - 2024

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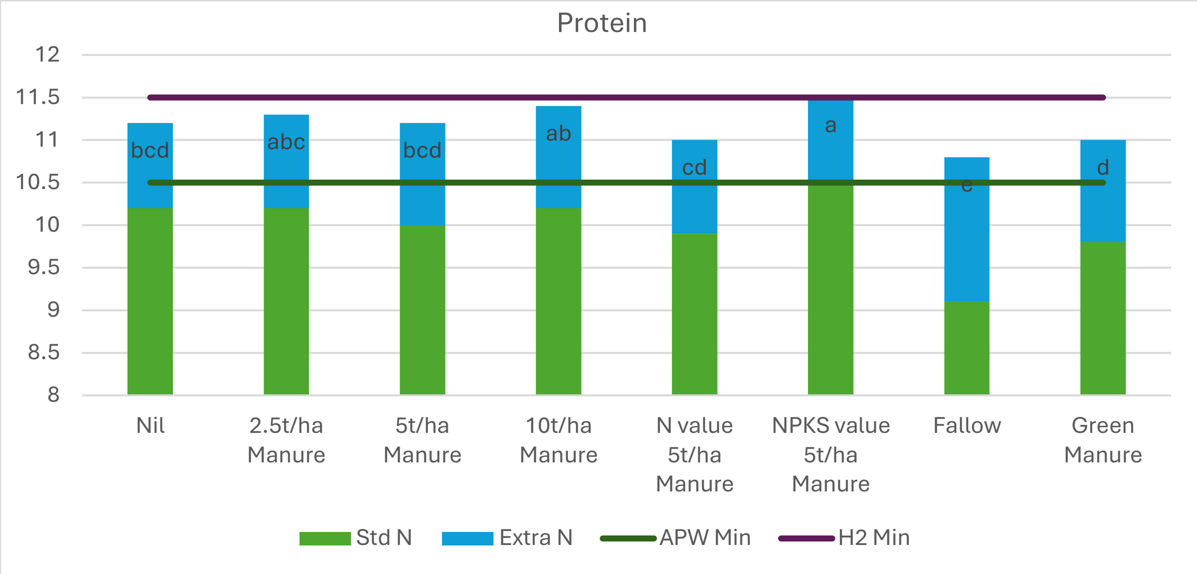

Figure 1. Influence of manure treatment on protein content.

Acknowledgements:

This project is supported by GRDC through the National Grower Network (NGN). Thanks also go to the Inchbold family and their staff, as farmer co-operators).

Please provide high resolution versions of the logos required for funding acknowledgement.

NGN – Validation of Organic Fertiliser Sources for Crop Nutrition in NE Victoria

Trial Objective:

To assess the legacy of organic amendments and biologically fixed N strategies in canola compared with inorganic based approaches.

Location: Bundalong, Vic

FAR Code: FAR RP POO C24-01

Sown: 5 April 2024

Cultivar: PY525G

H**arvested:** 24 November 2024

Rotation position: Wheat (2024), faba beans (2023), barley (2022), canola (2021)

GSR: April-October 206.9mm

Crop Nutrition:

MAP – 30kg/ha spread pre-sowing and 60kg/ha incorporated at sowing (9 N total)

Urea – Total of 400kg/ha spread over three applications (mid-May, mid-June and early July) (184 N total)

Break crop fertility and organic manures 2022 - 2024

Ben Morris, Tom Price & Rebecca Murray, FAR Australia & Riverine Plains Inc team

Key Messages:

- There were no differences observed in the harvest dry matter or the harvest index of the key treatments.
- The nitrogen content of the whole crop was quite variable, and no statistical differences were detected.
- Grain yield (3.76 t/ha) was higher where 75kg/ha of extra nitrogen was applied in 2023, compared to the farmer practice (3.66 t/ha).
- The highest yield was achieved where 2.5t/ha of manure was applied and this yield was statistically higher than where 10t/ha of manure was applied.
- The lowest yield was where the 'N-value of 5t/ha manure' was applied.
- It appears that higher rates of nitrogen need additional nutrients (P, K, S) to be applied to realise higher yields.

Harvest Biomass

Dry matter cuts were taken on November 6 to measure the total biomass accumulated at maturity. No differences were detected between treatments. Harvest index was calculated with an average figure of 27.2% and again, no differences were detected between treatments.

Table 1. Harvest dry matter (t/ha) and harvest index (%) assessed for key treatments, 6 November.

	Harvest Dry Matter (t/ha)						Harvest Index (%)					
Treatment	**Std N (Year 1)**		**Extra 75 N (Year 1)**		**Average**		**Std N (Year 1)**		**Extra 75 N (Year 1)**		**Average**	
Nil	11.72	-	11.92	-	**11.82**	**-**	30.8	-	28.7	-	**29.7**	**-**
10t/ha Manure	13.44	-	14.26	-	**13.85**	**-**	27.6	-	24.6	-	**26.1**	**-**
N Value 5t/ha Manure	11.21	-	14.27	-	**12.74**	**-**	29.9	-	24.2	-	**27.0**	**-**
Green Manure	13.91	-	12.62	-	**13.26**	**-**	24.6	-	27.3	-	**26.0**	**-**
Mean	**12.57**	**-**	**13.27**	**-**			**28.2**	**-**	**26.2**	**-**		
Treatment	LSD	ns		P Val 0.280			LSD	ns		P Val	0.553	
Nitrogen	LSD	ns		P Val 0.483			LSD	ns		P Val	0.456	
Treatment x Nitrogen	LSD	ns		P Val 0.480			LSD	ns		P Val	0.724	

Break crop fertility and organic manures 2022 - 2024

Ben Morris, Tom Price & Rebecca Murray, FAR Australia & Riverine Plains Inc team

Nitrogen content was measured in the harvest biomass. The treatments where the extra nitrogen was applied had a slightly higher percentage of nitrogen (1.11% compared to 0.95%). When the nitrogen uptake was calculated, there were no statistical differences in the total nitrogen (kg/ha).

Table 2. Harvest dry matter N analysis (%) and N removal (kg/ha) measured on key treatments, 6 November.

	Dry Matter Nitrogen %						**Dry Matter Nitrogen Removal (kg/ha)**					
Treatment	**Std N (Year 1)**		**Extra 75 N (Year 1)**		**Average**		**Std N (Year 1)**		**Extra 75 N (Year 1)**		**Average**	
Nil	1.10	-	1.02	-	**1.06**	**-**	131.6	-	122.8	-	**127.2**	**-**
10t/ha Manure	1.00	-	1.12	-	**1.06**	**-**	131.1	-	159.9	-	**145.5**	**-**
N Value 5t/ha Manure	0.78	-	1.25	-	**1.01**	**-**	87.1	-	182.6	-	**134.8**	**-**
Green Manure	0.92	-	1.07	-	**0.99**	**-**	127.4	-	133.6	-	**130.5**	**-**
Mean	**0.95**	**b**	**1.11**	**a**			**119.3**	**-**	**149.7**	**-**		
Treatment	LSD	ns		P Val	0.853		LSD	ns		P Val	0.742	
Nitrogen	LSD	0.10		P Val	0.019		LSD	ns		P Val	0.084	
Treatment x Nitrogen	LSD	ns		P Val	0.054		LSD	ns		P Val	0.161	

Ben Morris, Tom Price & Rebecca Murray, FAR Australia & Riverine Plains Inc team

Seed Yield

Plots were harvested with a plot harvester on the 24th of November. There was no interaction between manure treatment and nitrogen treatment. Where the extra 75kg of N was applied in 2023, the yield increased by 100kg/ha. The 2.5t/ha of manure treatment increased yield by 0.22t/ha compared to the Nil treatment. Adding nitrogen fertiliser to the equivalent found in 5t/ha of manure decreased the yield by 0.9t/ha compared to the Nil treatment, and although this was not significant, it was significantly lower than the 2.5t/ha and 5t/ha manure treatments and the NPKS treatment. All other treatments were statistically the same as the Nil treatment. It could be surmised that when applying large amounts of nitrogen, additional nutrients (P, K, S) are needed to positively impact yield.

Table 3. Seed yield (t/ha) harvested 24 November.

	Yield (t/ha)					
Treatment	**Std N (Year 1)**		**Extra 75N (Year 1)**		**Average**	
Nil	3.58	-	3.69	-	**3.63**	**bc**
2.5t/ha Manure	3.89	-	3.81	-	**3.85**	**a**
5t/ha Manure	3.67	-	3.95	-	**3.81**	**ab**
10t/ha Manure	3.54	-	3.73	-	**3.63**	**bc**
N value 5t/ha Manure	3.54	-	3.55	-	**3.54**	**c**
NPKS value 5t/ha Manure	3.72	-	3.81	-	**3.76**	**ab**
Fallow	3.60	-	3.85	-	**3.72**	**abc**
Green Manure	3.72	-	3.68	-	**3.70**	**abc**
Mean	**3.66**	**b**	**3.76**	**a**		
Treatment	LSD	0.19		P Val	0.048	
Nitrogen	LSD	0.07		P Val	0.007	
Treatment x Nitrogen	LSD	ns		P Val	0.117	

Can we make better disease management decisions with the use of new technologies?

Nick Poole & FAR Australia team, Ag Victoria, Brill Ag and Trengove Consulting

Background

22 years ago, disease management in Australia changed because of an exotic (overseas) incursion of stripe rust that infected crops in WA in 2002. Rather unfairly it became known as the WA pathotype. It resulted in greater use of both in-furrow and foliar fungicides to control an infection that was to become widespread across the eastern states.

On the plus side it resulted in much greater understanding of how to use fungicides in modern Australian broadacre farming systems. As the use of fungicides increased so the market for fungicides increased, which in turn meant manufacturers had greater confidence in introducing newer fungicide actives and modes of action. ***It is arguable that Australia now has a fungicide armory that is as up to date and powerful as that available to growers in Europe.***

Key Points

- *It is now often the case that low-cost fungicides are included in disease management strategies with little evidence of disease or risk being identified.*

- *In a number of tillering cereal crops genetic yellowing, nutritional spotting and herbicide damage are misdiagnosed as disease resulting in an additional early fungicide application.*

- *Pathogen populations are incredibly adaptive and with more and more fungicides applied our pathogen populations change, becoming increasingly resistant to our modern fungicide armory through a process of selection (sensitive strains are destroyed more resistant strains survive).*

- *20 years later fungicide resistance and reduced sensitivity (partial resistance) is a real issue, particularly in the net blotch, Septoria, powdery mildew and blackleg pathogens.*

- *Whilst improved genetic resistance is a clear way to reduce our dependency on fungicide application, could we use new technologies and simple decision support tools to give us greater confidence to omit a fungicide application.*

- *One of the simplest ways of preserving the activity of our fungicides and reducing our resistance risk is to employ fewer fungicide applications during the course of a growing season.*

That is the objective of a new GRDC investment in wheat (GRDC FAR202503-001RTX) that is testing whether we can use decision support tools such as disease development apps, spore traps, simple wet weather rules of thumb and disease thresholds that would allow us to;

> ***Either – spray with greater certainty, omit a fungicide or delay fungicide to a later timing with the intention of using less fungicide***

Can we make better disease management decisions with the use of new technologies?

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The new project that is in its first year has four protocols covering the three year research programme. A selection of trials from these protocols (which are outlined below) are being conducted across four states in SE Australia at nine research sites, three in Victoria, three in SA, two in NSW and one on Tasmania.

Protocol 1. The economic value of germplasm, cultural control and at sowing inputs in foliar disease management strategies.

Objective: This will investigate the value of cultural control associated with rotation position, genetic resistance and at sowing fungicide inputs on the need for foliar fungicide inputs in the spring.

Protocol 2. Strategies based on decision support tools and new technologies.

Objective: To validate foliar fungicide treatments derived from spore trap results, simple environmental trigger points, % threshold infection levels on specific leaf layers and model-based decision support apps covering stripe rust & Septoria.

Protocol 3. Adjustment in foliar fungicide rates, timings and active ingredients based on more resistant germplasm.

Objective: To validate foliar fungicide strategies that reduce the number of fungicide applications and rate of fungicide whilst adhering to AFREN principles (Australian Fungicide Resistance Extension Network) to reduce resistance risk.

Protocol 4. Long term effects of stubble management, green bridge control and resistant germplasm on foliar disease levels in continuous wheat.

Objective: Based at two sites (Horsham & Gnarwarre), a two-year trial using larger block plots would seek to assess the cumulative impact of adopting Integrated Disease Management (IDM) measures aimed at reducing the disease risk in the following crop.

What is happening internationally?

As part of the project FAR Australia looked at how decisions on fungicides and disease management more generally are made in other parts of the world hooking up with international contacts in New Zealand, Canada and the UK. Although new technologies were being tested most management decisions were based on disease presence or risk combined with knowledge of the development stage. In most cases fungicides were applied within the principal stem elongation development period of GS30 – 59. Although many countries had specific threshold levels for particularly diseases it was unclear whether the thresholds were being used on farms, with time taken to arrive at threshold levels and logistics of large farm enterprises often cited as a reason for just spraying at particular development stage with less attention being addressed to the level of disease present.

Today we will look at the trials to explore how we have fared with our spray decisions this season. The project must own its decisions, good and bad since fungicide decisions are primarily decisions based on our attitude to risk, therefore where we don’t take out insurance it needs to be based on sound rational and scientific evidence.

AFTERNOON TIMETABLE

NE VICTORIA CROP TECHNOLOGY CENTRE (YARRAWONGA)

FAR AUSTRALIA

NE VIC CROP TECHNOLOGY CENTRE FIELD DAY
THURSDAY 2nd OCTOBER 2025

In-field presentations at Cereal Research site	Station No.	1:30	2:00	2:30	3:00	3:30
						Marquee
Jane Mcinnes, Riverine Plains and Tom Price, FAR Australia ***Pushing potential profit? Benchmarks for agronomy and profit in the Riverine Plains region*** *The first year results our new GRDC Hyper Profitable Crops project are out. Jane and Tom look at the analysis of agronomic and profitability benchmarking in the region.* GRDC	**5**	1	2			**Closing address and refreshments**
Nick Poole and Ben Morris, FAR Australia ***Making better decisions on disease management practices in wheat and barley*** *Nick and Ben look at two key GRDC projects (RiskWise & Wheat Disease Management that seek to use new technologies and decision support tools to make profitable and sustainable decisions with fungicides.*	**6**		1	2		
James Manson, CSIRO & Tom Price FAR Australia ***Profitable Yield Frontiers in wheat and barley.*** *James and Tom look at the second year trials and first year results of a GRDC project that aims to build on the legacy of Hyper Yielding Crops in the southern MRZ region.* GRDC	**7**			1	2	
Ben Morris & Nick Poole, FAR Australia *The Mulwala team look at this year's* ***Germplasm Evaluation Network (GEN) for wheat & barley*** *- whiat have learnt so far?*	**8**	2			1	
In-field presentations		**1:30**	**2:00**	**2:30**	**3:00**	**3:30**

For the presentations, we would be obliged if you could remain within your designated group number. Note we will only split into two groups if high numbers attend.	1
Thank you for your cooperation.	2

GRDC RiskWi$e Project – Developing and validating a disease management decision tree

Disease management in barley – MRZ Yarrawonga 2024

Ben Morris, Tom Price & Rebecca Murray – FAR Australia

Objectives: To develop and validate a decision tree for disease management inputs in cereals (barley & wheat)

Experimental Treatments:

Cultivars

1. Susceptible cultivar - RGT Planet
2. Resistant cultivar – Neo CL

Fungicide Treatments

1. Untreated
2. Early stem elongation spray (1 spray)
3. Early stem elongation spray + Flag spray (2 spray)
4. Seed treatment + Early Stem + Flag spray (Seed + 2 spray)
5. Early Stem spray + Flag spray + Flag leaf top up (3 spray)
6. Decision tree
7. In furrow decision tree

2024 Results:

Crop responses in this season

- Neo (8.39 t/ha) outyielded Planet (7.50 t/ha) by 0.89 t/ha
- In both cultivars there was no yield response to fungicide (range 7.72 -8.22 t/ha), however the cost of fungicide affected the economics.
- All treatments were too high in protein to be accepted as malt quality.
- The levels of Net Form Net Blotch observed in Planet barley, even with three fungicides, are concerning as it appears that resistance to fungicides is developing.

Key Points: Reward, profit, or economic responses

- With planet barley all 1 and 2 unit fungicides (trt, 2,3,6,7) gave a similar response and ranged from $35-$50/ha net margin over the untreated. Achieving an ROI of 50-90% (for every $ spent an extra 50 – 90 cents were generated).
- The 3-unit treatments gave a bigger net margin ($87-$110/ha) and ROI (70-87%) than the other treatments.
- Neo barley had no response to fungicide, and all treatments made a loss over the untreated of $47-$129/ha.

GRDC RiskWi$e Project – Developing and validating a disease management decision tree

Disease management in barley – MRZ Yarrawonga 2024

Ben Morris, Tom Price & Rebecca Murray – FAR Australia

Grain Yield and Quality

Neo CL had significantly higher average yield (8.39 t/ha) than RGT Planet (7.50 t/ha). There were no significant differences between fungicide treatments, nor was there an interaction between cultivar and fungicide.

Table 1. Grain yield (t/ha) harvested 19 November.

	Yield (t/ha)					
Treatment	**RGT Planet**		**Neo CL**		**Mean**	
Untreated	7.05	-	8.39	-	**7.72**	**-**
1 Unit	7.40	-	8.41	-	**7.91**	**-**
2 Units	7.54	-	8.43	-	**7.98**	**-**
2 Units + Systiva	7.86	-	8.58	-	**8.22**	**-**
3 Units	7.77	-	8.37	-	**8.07**	**-**
Decision Tree	7.41	-	8.22	-	**7.82**	**-**
Decision Tree + Systiva	7.45	-	8.34	-	**7.90**	**-**
Mean	**7.50**	**b**	**8.39**	**a**		
Variety	LSD	0.30		P Val	0.002	
Treatment	LSD	ns		P Val	0.067	
Variety x Treatment	LSD	ns		P Val	0.377	

Table 2. Actual treatments applied.

	Variety x Treatment	GSOO	GS31	GS39	GS59-61
RGT Planet	Untreated	-	-	-	-
	1 Unit	-	Prosaro	-	-
	2 Units	-	Prosaro	Aviator Xpro	-
	2 Units + Systiva	Systiva	Prosaro	Aviator Xpro	-
	3 Units	-	Prosaro	Aviator Xpro	Opus
	Decision Tree	-	-	Aviator Xpro	Opus
	Decision Tree + Systiva	Systiva	-	Aviator Xpro	-
Neo CL	Untreated	-	-	-	-
	1 Unit	-	Prosaro	-	-
	2 Units	-	Prosaro	Aviator Xpro	-
	2 Units + Systiva	Systiva	Prosaro	Aviator Xpro	-
	3 Units	-	Prosaro	Aviator Xpro	Opus
	Decision Tree	-	-	-	Opus
	Decision Tree + Systiva	Systiva	-	-	-

RiskWi$e Disease management in wheat – MRZ Yarrawonga 2024

GRDC RiskWi$e Project – Developing and validating a disease management decision tree

Disease management in barley – MRZ Yarrawonga 2024

Ben Morris, Tom Price & Rebecca Murray – FAR Australia

Objectives: To develop and validate a decision tree for disease management inputs in cereals (barley & wheat)

Experimental Treatments:

Cultivars

1. Susceptible cultivar (Scepter)
2. Resistant cultivar (Major)

Fungicide Treatments

1. Untreated
2. Flag Spray (1 spray)
3. Early Stem spray + Flag spray (2 spray)
4. In furrow + Flag spray (Furrow + Flag)
5. Early Stem spray + Flag spray + Flag top up (3 spray)
6. Decision tree
7. In furrow decision tree

Results:

Crop responses in this season

- Major (6.41 t/ha) outyielded Scepter (5.74t/ha) by 0.67 t/ha.
- In Major there was no yield response to fungicide (range 6.25-6.51 t/ha), however the cost of fungicide and grain quality effected the economics.
- The 3-spray approach was the least profitable in Major as it was an expensive option.
- In both cultivars, the decision tree treatments were the most profitable.
- The In-furrow decision tree was less profitable than the decision tree in both cultivars.

Key Points: Reward, profit, or economic responses

- The ROI for fungicide in the decision tree treatments ranged from 374% to 1017% ($3.74 return for $ & $10.17 return for every $ spent).
- A 3-spray approach lost money in major (-46% ROI) but made money in Scepter (371% ROI).

Grain Yield and Quality

LRPB Major had significantly higher average yield (6.41 t/ha) than Scepter (5.74 t/ha). There was no significant interaction between cultivar and fungicide. There was statistical difference in grain yield for treatments that had either flutriafol at sowing or a GS31 fungicide spray (6.06 - 6.28 t/ha). The untreated was significantly lower yielding (5.71 t/ha).

Disease management in barley – MRZ Yarrawonga 2024

Ben Morris, Tom Price & Rebecca Murray – FAR Australia

Table 3. Grain yield (t/ha) harvested 19 November.

	Yield (t/ha)					
Treatment	**Scepter**		**LRPB Major**		**Mean**	
Untreated	5.16	-	6.25	-	**5.71**	**c**
1 Unit	5.40	-	6.31	-	**5.85**	**bc**
2 Units	5.82	-	6.44	-	**6.13**	**a**
1 Unit + Flutriafol	5.69	-	6.44	-	**6.06**	**ab**
3 Units	6.05	-	6.43	-	**6.24**	**a**
Decision Tree	6.06	-	6.51	-	**6.28**	**a**
Decision Tree + Flutriafol	5.99	-	6.49	-	**6.24**	**a**
Mean	**5.74**	**b**	**6.41**	**a**		
Variety	LSD	0.173		P Val	0.001	
Treatment	LSD	0.270		P Val	<0.001	
Variety x Treatment	LSD	ns		P Val	0.107	

Table 4. Actual treatments applied.

	Variety x Treatment	GSOO	GS31	GS39	GS59-61
Scepter	Untreated	-	-	-	-
	1 Unit	-	-	Opus	-
	2 Units	-	Prosaro	Opus	-
	1 Unit + Flut.	Flutriafol	-	Opus	-
	3 Units	-	Prosaro	Amistar	Opus
	Decision Tree	-	Tebuconazole	Opus	-
	Dec. T + Flut.	Flutriafol	-	Opus	-
LRPB Major	Untreated	-	-	-	-
	1 Unit	-	-	Opus	-
	2 Units	-	Prosaro	Opus	-
	1 Unit + Flut.	Flutriafol	-	Opus	-
	3 Units	-	Prosaro	Amistar	Opus
	Decision Tree	-	-	-	Opus
	Dec. T + Flut.	Flutriafol	-	-	-

Ben Morris, Tom Price & Rebecca Murray – FAR Australia

Economics

As there was some variation around grain quality within treatments, the grain quality was determined for each plot and the gross income calculated accordingly, then averaged for the 4 plots in each treatment.

Table 5. Grain quality showing percentage of each quality received for each treatment.

	Variety x Treatment	AGP	APW	H2	Average grain price
Scepter	Untreated	100%			$ 275.00
	1 Unit	25%	50%	25%	$ 302.50
	2 Units	50%		50%	$ 295.00
	1 Unit + Flut.		75%	25%	$ 311.25
	3 Units		50%	50%	$ 312.50
	Decision Tree		50%	50%	$ 312.50
	Dec. T + Flut.		100%		$ 310.00
LRPB Major	Untreated	25%		75%	$ 305.00
	1 Unit	25%		75%	$ 305.00
	2 Units			100%	$ 315.00
	1 Unit + Flut.	25%		75%	$ 305.00
	3 Units	25%		75%	$ 305.00
	Decision Tree			100%	$ 315.00
	Dec. T + Flut.	25%		75%	$ 305.00

LRPB Major with an average net margin of $1935/ha was more profitable than Scepter with an average net margin of $1696/ha.

In Scepter every fungicide strategy was more profitable ($195-$426) than the untreated. The decision tree without flutriafol was the most profitable but comparable to the decision tree with flutriafol and the 3-unit strategy. The Decision tree strategy with flutriafol gave the highest ROI (1017%) due to the low cost.

Some of the fungicide strategies in LRPB Major were less profitable than the untreated as there was a low response to fungicide and a poorly timed spray had little positive impact. The most profitable treatment was the decision tree, with one well timed spray achieving a marginal increase of $112/ha and an ROI of 374%. The decision tree plus flutriafol was the second most profitable (+$64/ha) and achieved the highest ROI of 708%.

Disease management in barley – MRZ Yarrawonga 2024

Ben Morris, Tom Price & Rebecca Murray – FAR Australia

Table 6. Marginal gain from fungicide application.

Scepter	Yield	Grade	Gross Income	Fungicide Cost	Net Margin	Difference	ROI
Untreated	5.16	AGP	$ 1,420	$ -	$ 1,420		
1 Unit	5.40	Var*	$ 1,645	$ 30.00	$ 1,615	$195.29	651%
2 Units	5.82	Var*	$ 1,720	$ 61.88	$ 1,658	$238.24	385%
1 Unit + Flut.	5.69	Var*	$ 1,769	$ 39.00	$ 1,730	$310.64	797%
3 Units	6.05	Var*	$ 1,891	$ 100.08	$ 1,790	$370.90	371%
Decision Tree	6.06	Var*	$ 1,895	$ 49.06	$ 1,846	$426.03	868%
Dec. T + Flut.	5.99	APW	$ 1,855	$ 39.00	$ 1,816	$396.66	1017%
LRPB Major	Yield		Gross Income	Fungicide Cost	Net Margin	Difference	ROI
Untreated	6.25	Var*	$ 1,907	$ -	$ 1,907		
1 Unit	6.31	Var*	$ 1,925	$ 30.00	$ 1,895	-$11.63	-39%
2 Units	6.44	H2	$ 2,029	$ 61.88	$ 1,967	$59.79	97%
1 Unit + Flut.	6.44	Var*	$ 1,965	$ 39.00	$ 1,926	$19.24	49%
3 Units	6.43	Var*	$ 1,961	$ 100.08	$ 1,861	-$46.35	-46%
Decision Tree	6.51	H2	$ 2,049	$ 30.00	$ 2,019	$112.20	374%
Dec. T + Flut.	6.49	Var*	$ 1,980	$ 9.00	$ 1,971	$63.75	708%

Closing the yield gap - reflection on FAR Australia research results from east v west.

Nick Poole & FAR Australia team

Background

The following results are taken from observations in FAR's own Germplasm Evaluation Network (GEN) trials comparing the profitability of controlling disease with foliar fungicides in eastern states versus WA. Why is this important? Compared to 20 years ago we have some of the most advanced fungicide technology available to us here in Australia. However, over those 20 years we have moved from under use of fungicide to overuse of fungicides particularly in L-MRZ regions of Australia. The following research data starts to identify where we don't see profitable returns from fungicides.

Key Points

- *The current presence of stripe rust Puccinia striiformis and Septoria tritici blotch (STB) Zymoseptoria tritici in eastern states milling wheat crops results in significantly higher returns from fungicide application in the Eastern states crops compared to WA.*
- *The maximum yield response in Scepter to a three-spray fungicide programme incorporating SDHI fungicide over three years at our high yielding research site at Wallendbeen has been 5.72t/ha 2022, 1.85t/ha 2023 and 3.28 t/ha 2024.*
- *In contrast in the WA HRZ of Esperance the following response were seen in Scepter in 0.11t/ha in 2021, 0.17t/ha in 2022 and no response in 2024 (no site in 2023).*
- *In lower yielding scenarios in the eastern states at 3-5t/ha one disease is driving response more than any other in wheat, **it is stripe rust**.*
- *As 2023 indicated you can have very high levels of STB inoculum at GS31, but it does not mean that the disease will rob you of yield. Yield reduction is associated with wet conditions during stem elongation when the main yield contributing leaves emerge, the so-called money leaves.*

Results

Foliar fungicide application in **wheat** in the eastern states is a major driver of closing the yield gap, even in drier years such as 2023 and 2024. In the relatively high yielding NSW research site at Wallendbeen, it was cereal rusts that were driving the yield responses, with stripe rust the key disease in all varieties except Triple 2 that lost yield potential as a result of leaf rust (Figure 1). However, in FAR Australia research results in the WA HRZ it has been difficult to demonstrate the same effect on yield and profit.

Closing the yield gap - reflection on FAR Australia research results from east v west.

Nick Poole & FAR Australia team

The following 2024 graphs illustrate this difference with reference to FAR Australia's Germplasm Evaluation Network (GEN) trials where cereal varieties are tested with and without a comprehensive fungicide programme.

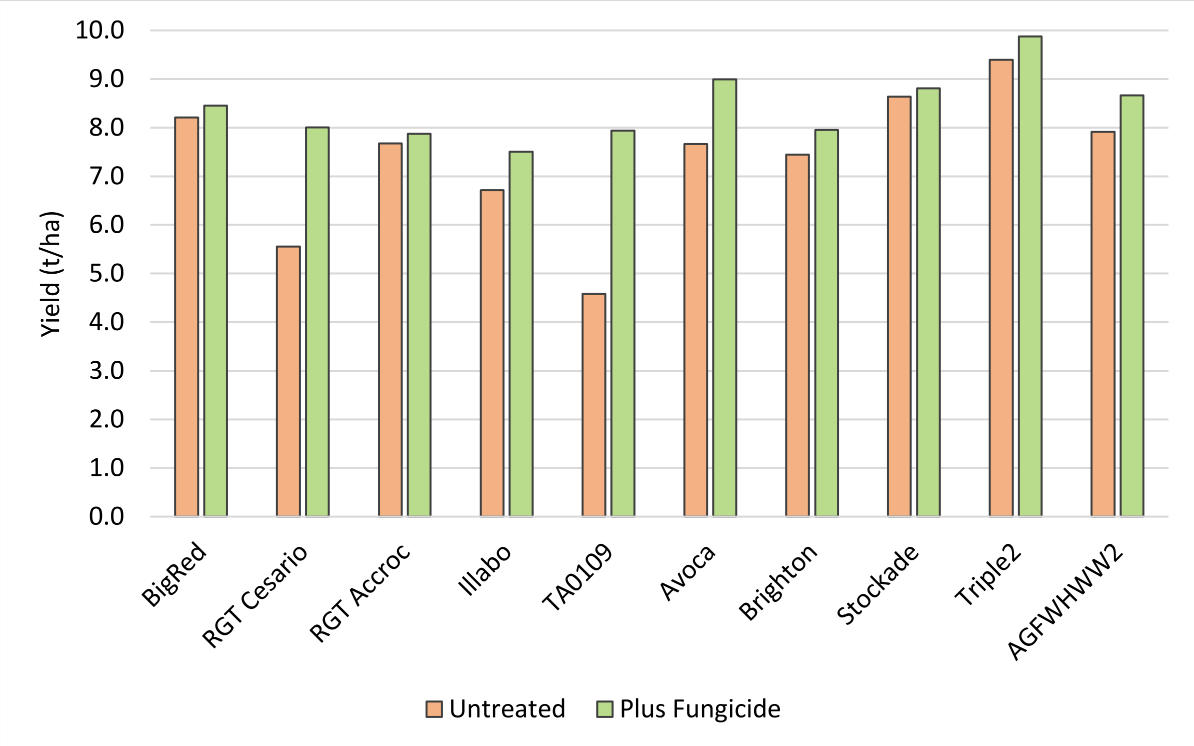

Figure 1. Variety yield response to fungicide application – **Wallendbeen CTC, NSW 2024** sown 17 April **2024**. **GSR (Apr-Nov) 390.8mm**

When yield potential is high it is easy to make the case for fungicide applications in susceptible varieties. However, we can use data such as this over a number of years to explore the yield gap due to disease in different regions and use the data to pick reliable high yielding options that don't depend on the level of fungicide.

The ability of stripe rust to rob yield however is not limited to high yielding scenarios but also scenarios where rainfall deciles are well below the norm. This was observed in southern Victoria in 2024 when growing season rainfall was restricted to 255mm and yields from May sown wheats was pegged at 3-5t/ha (Figure 2).

In contrast in the same season with roughly similar and yields the following results were obtained in the Esperance port zone in the WA HRZ (Figure 3).

Closing the yield gap - reflection on FAR Australia research results from east v west.

Nick Poole & FAR Australia team

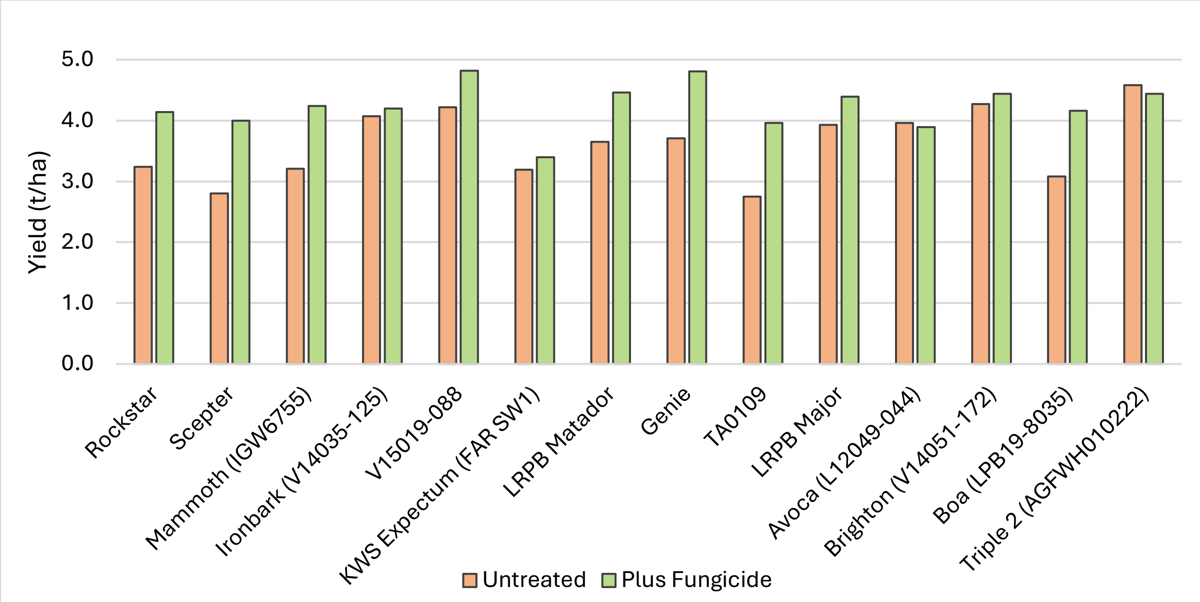

Figure 2. Influence of variety and fungicide application (based on three foliar sprays) on grain yield (t/ha) at **Gnarwarre, Victoria CTC** – sown 20 May **2024**. **GSR (Apr-Nov) 255mm.**

Key point: *The fungicide response of varieties averaged between minus 0.07t/ha – 1.2t/ha. Genie gave over a tonne response to fungicide compared to 0.08t/ha in Esperance, WA 0.28t/ha in Scaddan, WA and minus 0.31t/ha in Frankland River, WA. In Scepter the yields of fungicide treated crops were 1.2t/ha greater than untreated at Gnarwarre.*

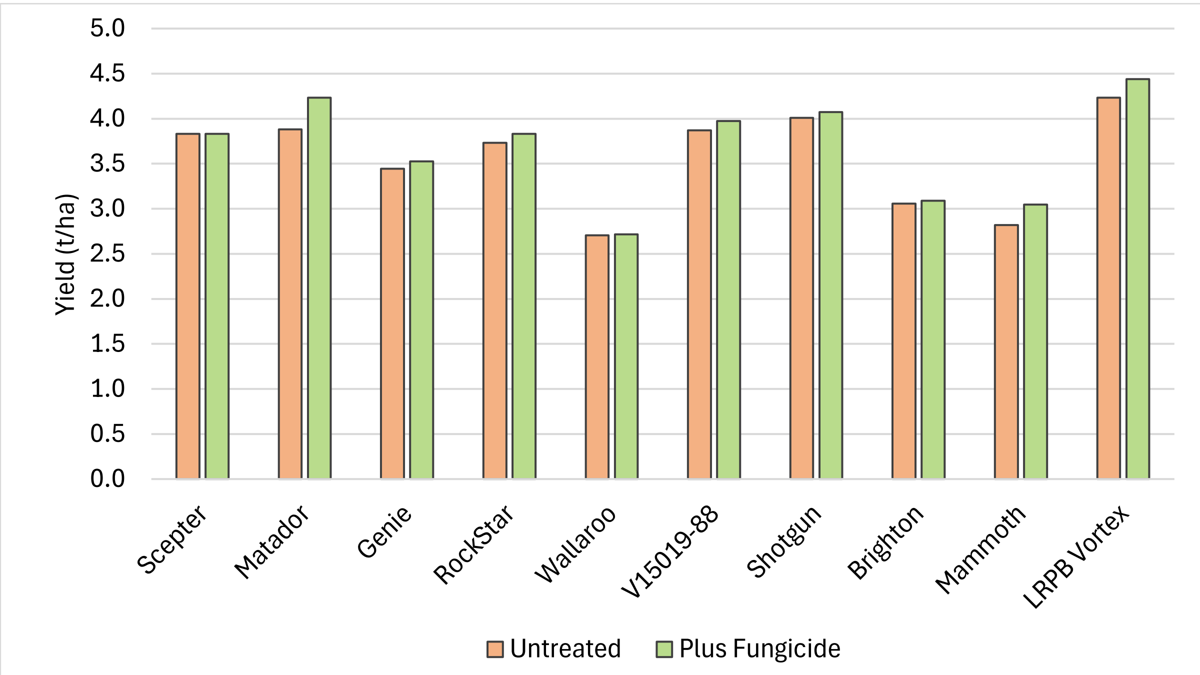

Figure 3. Influence of variety and fungicide application (based on two foliar sprays) on grain yield (t/ha) at **Gibson, Esperance CTC** – sown 10 May **2024** (t/ha). **GSR (Apr-Oct) 279mm.**

Closing the yield gap - reflection on FAR Australia research results from east v west.

Nick Poole & FAR Australia team

Key point: *The only significant yield results were amongst varieties in Esperance. There was no significant response to fungicide application. In Scepter the yields of treated and untreated were identical.*

So why the difference and was it just 2024?

The difference is simply the absence of two diseases in the west that are regularly robbing yield in the eastern states, stripe rust *Puccinia striiformis* and to a lesser extent Septoria tritici blotch (STB) *Zymoseptoria tritici*. Much of the milling wheat germplasm (e.g. Scepter) grown in the eastern states is susceptible to these two diseases. This difference between east and west appears not to be "a one off", since been recorded in trials at FAR Australia in previous years. The only caveat is that WA trials have not been exposed to Wheat Powdery Mildew (WPM). However, in 2025 the later sown GEN trial in Esperance has high levels of WPM in susceptible varieties. This will be an important piece of new data for the GEN research programme.

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.

SOWING THE SEED FOR A BRIGHTER FUTURE

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